

Sixth National Report of Ukraine on the Implementation of the Convention on Biological Diversity

English version

December, 2018



Kyiv – 2018

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Introduction

The Convention on Biological Diversity (CBD) was open for signature in 1992 in Rio de Janeiro. Ukraine signed the CBD in 1992 and ratified it in 1994.

In 2000, the Cartagena Protocol on Biosafety to the Convention on Biological Diversity was adopted, and it entered into force in 2003: Ukraine signed it in 2002. In 2010 the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity was adopted; it entered into force in 2014: Ukraine did not ratify it. Also, in 2010 the COP10 adopted the Strategic Plan for Biodiversity for the 2011–2020 period, including Aichi Biodiversity Targets, which are to be globally achieved by 2020. Each Party was to develop and adopt its national biodiversity strategy and action plans (NBSAP) as the main tools for achieving each of the Aichi Biodiversity Targets at the national level.

This report covers the 2013–2017 period. In addition, the events and measures taken during 2018 were included if they were particularly important for the implementation of the CBD and the Strategic Plan for Biodiversity for the 2011–2020 period, including Aichi Biodiversity Targets.

The report is prepared as a part of the research project “Scientific Summary of Data and Preparation of the Sixth National Report of Ukraine on the Implementation of the Convention on Biological Diversity” by the I. I. Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, together with the WWF Ukraine. The authors of the analytical reviews are: Section 1: Godlevska, L., Vasyliuk, O., Gol'din, P.; Sections 2–4: ABT 1 – Biodiversity awareness: Kovalenko, O. (contributed by A. Poluda); ABT 2 – Biodiversity mainstreaming: Vasyliuk, O., Godlevska, L., Gol'din, P.; ABT 3 – Incentives and subsidies – Atamas, N., Godlevska, L., Gol'din, P.; ABT 4 – Sustainable production and consumption: Denyshchuk, O.; ABT 5 – Habitat fragmentation and degradation: Plyha, A.; ABT 6 – Sustainable fisheries: Buzevich, I., Chashchin, A., Goch, I.; ABT 7 – Sustainable resource management: Plyha, A., Godlevska, L., Buzevich, I., Gol'din, P.; ABT 8 – Pollution: Ghazali, M., Ruban, A.; ABT 9 – Invasive alien species: Kutsokon, Yu., Buzevich, I., Chashchin, A.; ABT 10 – Ecosystems vulnerable to climate change: Sadogurska, S.; ABT 11 – Protected areas: Vasyliuk, O., Godlevska, L., Gol'din, P. (contributed by A. Poluda); ABT 12 – Species and extinctions: Kostyushin, V., Nekrasova, O., Poluda, A., Ivanova, V., Gol'din, P.; ABT 13 – Genetic diversity: Vishnevsky, L., Sidorenko, O. (animals), Ryabchun, V., Zadorozhna, O., Kuzmishina, N., Boguslavsky, R. (plants); ABT 14 – Ecosystem services: Kolomytsev, G.; ABT 15 – Climate resilience, sequestration and restoration: Sadogurska, S.; ABT 16 – Access and benefit sharing: Vasyliuk, O.; ABT 17 – National biodiversity strategies and action plans: Vasyliuk, O., Godlevska, L., Gol'din, P.; ABT 18 – Traditional knowledge: Kuzemko, A., Vasyliuk, O.; ABT 19 – Science and research: Atamas, N., Ghazali, M.; ABT 20 – Resource mobilization: Atamas, N.; Section 5, Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation: Kuzemko, A., Peregrym, M.; Section 6, Updated biodiversity country profile: edited by P. Gol'din. Editors: Godlevska, L., Gol'din, P., Ghazali, M., Dzeverin, I., Lashkova, O. Translation by O. Kovalenko (Sections 1-5) and P. Gol'din (Section 6).

Acknowledgements

We sincerely thank for the help by: O. Burkovsky, D. Chmyshenko, N. Gozak, L. Gronska, V. Domashlinets, A. Drapaliuk, S. Korneev, Ju. Mel'nyk, A. Pavelko, O. Petrovych, S. Pryadko, N. Pustovit, M. Savchenko, M. Son, O. Tarasova-Krasiieva, P. Tiestov, N. Fyshko, M. Shevera, D. Shyriaieva, M. Yakovlev, M. Yashkyna.

We thank all the institutions and organizations that provided reports on the implementation of CBD

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Abbreviations

ABT	Aichi biodiversity target
ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area
AEWA	African-Eurasian Migratory Waterbird Agreement
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS (also, Bonn Convention)	Convention on the Conservation of Migratory Species of Wild Animals
EaP GREEN	“Greening Economies in the Eastern Neighbourhood” program
EBRD	European Bank for Reconstruction and Development
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EU	European Union
EUROBATS	Agreement on the Conservation of Populations of European Bats
FAO	Food and Agriculture Organization of the United Nations
FSC	Forest Stewardship Council
GBIF	Global Biodiversity Information Facility
GFCM	General Fisheries Commission for the Mediterranean
GHG	Greenhouse gases
GMOs	Genetically modified organisms
IAS	Invasive alien species
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
LULUCF	Land Use, Land-Use Change and Forestry
Ministry of Agropolicy (unofficial abbreviation)	Ministry of Agrarian Policy and Food of Ukraine
Ministry of Ecology (unofficial abbreviation)	Ministry of Ecology and Natural Resources of Ukraine
NAAS	National Academy of Agrarian Sciences of Ukraine
NAP 2011–2015	The National Action Plan for Environment Protection for 2011–2015
NAS of Ukraine	National Academy of Sciences of Ukraine
NATO	North Atlantic Treaty Organization
NDC	Intended Nationally Determined Contribution
NGO(s)	Non-governmental organization(s)
NNP	National Nature Park
NPP	Nuclear Power Plant

NRF	Nature Reserve Fund
NSB	National strategy on biodiversity (= Law of Ukraine about Environmental Policy; Law of Ukraine “On the Main Principles (Strategy) of the National Environmental Policy of Ukraine until 2020”)
NT	National biodiversity target
PA(s)	Protected area(s)
SDG	Sustainable Development Goal(s)
SEA	Strategic Environmental Assessment
SME	Small and medium-sized enterprises
UkrBIN	Ukrainian Biodiversity Information Network
UNCCD	United Nations Convention to Combat Desertification
UNDP GEF	Global Environmental Finance, United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wide Fund for Nature

Section I. Information on the targets being pursued at the national level

Ukraine has presented the Law of Ukraine “On the Main Principles (Strategy) of the National Environmental Policy of Ukraine for the Period until the Year 2020” (as of 2010) as the officially approved National Action Plan for implementing the global Strategic Plan for Biodiversity and the Aichi Biodiversity Targets (ABT). This document identifies seven national targets.

My country has adopted national biodiversity targets or equivalent commitments in line with the Strategic Plan for Biodiversity 2011–2020 and the Aichi Targets

National Target 1 (NT1). Increasing the level of public environmental consciousness

Rationale for the national target

The need to increase the level of awareness and education of the population on the issues of conservation and protection of the natural environment, information dissemination; improving the skills of the government officials, whose competence includes environmental protection; the need to support and promote civic associations and communities involved in environmental protection; creation of information & experiment and demonstration & learning centers for the support of measures on introduction and distribution of non-exhaustive management models and environmentally friendly technologies, etc.

The target and relevant objectives meet the obligations under the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters; they are also consistent with the implementation of many other international environmental treaties signed and ratified by Ukraine and / or with their respective resolutions and decisions.

Level of application

- Regional/multilateral – please indicate area concerned
 National/federal
 Subnational – please indicate area concerned

Relevance of the national targets to the Aichi Biodiversity Targets

Main related Aichi Biodiversity Targets

- 1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other related Aichi Biodiversity Targets

- 1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other relevant information

Implementation of the target is directly and indirectly supported by the provisions of the current legislation, in particular:

- Laws of Ukraine “On the Access to Public Information”, “On the Ecological Network of Ukraine”, “On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015”, “On Environmental Protection”, “On Environmental Impact Assessment”, “On Flora”, “On Stra-

tegic Environmental Assessment”, “On the Red Data Book of Ukraine”;

- “Provisions on the Green Data Book of Ukraine”, “Concept of the National Biodiversity Conservation Program for 2005–2025” and others.

Relevant websites, web links, and files

- On the Ecological Network of Ukraine (2004, revised) – <http://zakon.rada.gov.ua/laws/show/1864-15>
- On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015 (2000, revised) – <http://zakon.rada.gov.ua/laws/show/1989-14>
- On Environmental Protection (1991, revised) – <http://zakon.rada.gov.ua/laws/show/1264-12>
- On Environmental Impact Assessment (2017) – <http://zakon.rada.gov.ua/laws/show/2059-19>
- On Flora (1999, revised) – <http://zakon.rada.gov.ua/laws/main/591-14>
- On Strategic Environmental Assessment (2018) – <http://zakon.rada.gov.ua/laws/show/2354-19>
- On the Red Data Book of Ukraine (2002, revised) – <http://zakon.rada.gov.ua/laws/main/3055-14>
- Provisions on the Green Data Book of Ukraine (2002, revised) – <http://zakon.rada.gov.ua/laws/show/1286-2002-п>
- On the implementation of the Concept of the National Biodiversity Conservation Program for 2005–2025 (2004) – <https://zakon.rada.gov.ua/laws/show/675-2004-p>

National Target 2 (NT 2). Improving the environmental situation and increasing the level of environmental security

Rationale for the national target

The importance of increasing the level of environmental security by implementing a comprehensive approach to risk assessment, prevention and mitigation of natural disasters in accordance with the Johannesburg Action Plan, reduction of emissions of common pollutants, implementation and / or intensification of measures for protection of water resources and reduction of their pollution, for land and soil protection and their management on the basis of sustainable development; the need to increase the forest area; introduction of safe technologies and standards in the mining operations, water quality control; protection against man-made and natural disasters; proper management of waste and hazardous chemicals; minimizing the effects of the Chernobyl accident (radioecological monitoring, transforming the Shelter Object into an environmentally safe system, etc.).

NT 2 is consistent with the implementation of the provisions of the signed and ratified international treaties, in particular: the Convention on the Protection of the Black Sea Against Pollution, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, the Convention on Environmental Impact Assessment in a Transboundary Context, the Convention on Long-Range Transboundary Air Pollution, the UN Convention to Combat Desertification, etc.

Level of application

- Regional/multilateral – please indicate area concerned
 National/federal
 Subnational – please indicate area concerned

Relevance of the national targets to the Aichi Biodiversity Targets

Main related Aichi Biodiversity Targets

- 1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other related Aichi Biodiversity Targets

1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other relevant information

Implementation of the target is directly and indirectly supported by the provisions of the current legislation, in particular:

- Land, Water and Forest Codes and the Code of Ukraine on Bowels;
- Laws of Ukraine “On Waste”, “On the State Land Cadastre”, “On the Ecological Network of Ukraine”, “On General Principles of Further Operation and Decommissioning of Chornobyl NPS and Transformation of Ruined Fourth Power Unit of This NPS into Ecologically Safe System”, “On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015”, “On Land Management”, “On Air Protection”, “On Environmental Protection”, “On Environmental Impact Assessment”, “On Strategic Environmental Assessment”, “On Handling Radioactive Waste”, “On Nature Reserve Fund of Ukraine”, “On Fishery, Commercial Fishing and Protection of Aquatic Bioresources”, “On Fauna”;
- “National Action Plan to Combat Land Degradation and Desertification”, “National Strategy for Waste Management in Ukraine until 2030”, “Action Plan for the Implementation of Stockholm Convention on Persistent Organic Pollutants”, “National Transport Strategy of Ukraine until 2030”, “Concept of the National Biodiversity Conservation Program for 2005–2025”, etc.

Relevant websites, web links, and files

- Water Code of Ukraine (1995, revised) – <http://zakon.rada.gov.ua/laws/show/213/95-bp>
- Land Code of Ukraine (2001, revised) – <http://zakon.rada.gov.ua/laws/show/2768-14>
- Code of Ukraine on Bowels (1994, revised) – <http://zakon.rada.gov.ua/laws/show/132/94-bp>
- Forest Code of Ukraine (1994, revised) – <http://zakon.rada.gov.ua/laws/show/3852-12>
- On Waste (1998, revised) – <http://zakon.rada.gov.ua/laws/show/187/98-bp>
- On the State Land Cadastre (2011, revised) – <http://zakon.rada.gov.ua/laws/main/3613-17>
- On the Ecological Network of Ukraine (2004, revised) – <http://zakon.rada.gov.ua/laws/show/1864-15>
- On General Principles of Further Operation and Decommissioning of Chornobyl NPS and Transformation of Ruined Fourth Power Unit of This NPS into Ecologically Safe System (1998, revised) – <http://zakon.rada.gov.ua/laws/show/309-14>
- On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015 (2000, revised) – <http://zakon.rada.gov.ua/laws/show/1989-14>
- On Land Management (2003, revised) – <http://zakon.rada.gov.ua/laws/main/858-15>
- On Air Protection (1992, revised) – <http://zakon.rada.gov.ua/laws/show/2707-12>
- On Environmental Protection (1991, revised) – <http://zakon.rada.gov.ua/laws/show/1264-12>
- On Environmental Impact Assessment (2017) – <http://zakon.rada.gov.ua/laws/show/2059-19>
- On Handling Radioactive Waste (1995, revised) – <http://zakon.rada.gov.ua/laws/show/255/95-bp>
- On Nature Reserve Fund of Ukraine (1992, revised) – <http://zakon.rada.gov.ua/laws/show/2456-12>
- On Fishery, Commercial Fishing and Protection of Aquatic Bioresources (2011, revised) – <http://zakon.rada.gov.ua/laws/show/3677-17>
- On Strategic Environmental Assessment (2018) – <http://zakon.rada.gov.ua/laws/show/2354-19>

- On Fauna (2001, revised) – <http://zakon.rada.gov.ua/laws/show/2894-14>
- On the Red Data Book of Ukraine (2002, revised) – <http://zakon.rada.gov.ua/laws/main/3055-14>
- National Strategy for Waste Management in Ukraine until 2030 (2017) – <http://zakon.rada.gov.ua/laws/show/820-2017-p#n8>
- National Transport Strategy of Ukraine until 2030 (2018) – <http://zakon.rada.gov.ua/laws/show/430-2018-p>
- National Action Plan to Combat Land Degradation and Desertification (2016) – <http://zakon.rada.gov.ua/laws/show/271-2016-p#n8>
- Action Plan for the Implementation of Stockholm Convention on Persistent Organic Pollutants (2012) – <http://zakon.rada.gov.ua/laws/show/589-2012-p#n7>
- On the implementation of the Concept of the National Biodiversity Conservation Program for 2005–2025 (2004) – <https://zakon.rada.gov.ua/laws/show/675-2004-p>

National Target 3 (NT 3). Attaining the environmental conditions safe for human health

Rationale for the national target

The necessity to ensure the biosafety of the population, in particular, through the following measures: compliance and prevention of violations with regards to the health and safety standards of the air quality within localities, the quality of surface water in places of intensive water use by the population, the quality of water used for drinking water supply and cooking needs of the rural population; preparation of a target program for the assessment and prevention of health risks induced by environmental factors among the population of Ukraine; identification of environmental risk zones and preparation of a state target program for reducing the technogenic pressure on the public health within the environmental risk zones; strengthening the state environmental control over compliance with the legislation in the process of placement, construction, exploitation of new man-made objects; creating the institutional basis for informing the public about environmental risks; development of the state environmental monitoring system through its modernization, strengthening coordination of monitoring entities and improvement of data management systems as the foundation for making management decisions.

Level of application

- Regional/multilateral – please indicate area concerned
 National/federal
 Subnational – please indicate area concerned

Relevance of the national targets to the Aichi Biodiversity Targets

Main related Aichi Biodiversity Targets

- 1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other related Aichi Biodiversity Targets

- 1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other relevant information

Implementation of the target is directly and indirectly supported by the provisions of the current legislation, in particular:

- Water Code of Ukraine;
- Laws of Ukraine “On Waste”, “On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015”, “On Air Protection”, “On Environmental Protection”, “On Environmental Impact Assessment”, “On Drinking Water and Drinking Water Supply”, “On Nature Reserve Fund of Ukraine”, “On Flora”, “On Strategic Environmental Assessment”, “On Fauna”, etc.;
- “National Transport Strategy of Ukraine until 2030”, “Concept of the National Biodiversity Conservation Program for 2005–2025”, etc.

Relevant websites, web links, and files

- Water Code of Ukraine (1995, revised) – <http://zakon.rada.gov.ua/laws/show/213/95-bp>
- On Waste (1998, revised) – <http://zakon.rada.gov.ua/laws/show/187/98-bp>
- On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015 (2000, revised) – <http://zakon.rada.gov.ua/laws/show/1989-14>
- On Air Protection (1992, revised) – <http://zakon.rada.gov.ua/laws/show/2707-12>
- On Environmental Protection (1991, revised) – <http://zakon.rada.gov.ua/laws/show/1264-12>
- On Environmental Impact Assessment (2017) – <http://zakon.rada.gov.ua/laws/show/2059-19>
- On Nature Reserve Fund of Ukraine (1992, revised) – <http://zakon.rada.gov.ua/laws/show/2456-12>
- On Strategic Environmental Assessment (2018) – <http://zakon.rada.gov.ua/laws/show/2354-19>
- On Flora (1999, revised) – <http://zakon.rada.gov.ua/laws/main/591-14>
- On Fauna (2001, revised) – <http://zakon.rada.gov.ua/laws/show/2894-14>
- National Transport Strategy of Ukraine until 2030 (2018) – <http://zakon.rada.gov.ua/laws/show/430-2018-p>
- On the implementation of the Concept of the National Biodiversity Conservation Program for 2005–2025 (2004) – <https://zakon.rada.gov.ua/laws/show/675-2004-p>

National Target 4 (NT 4). Integrating the environmental policy and improving the integrated environmental management system

Rationale for the national target

The need for development and introduction of legislative support for the mandatory integration of environmental policy into other documents; institutional development and reinforcement of the efficiency of public administration in the environment sector; development of partnerships between sectors of society in order to involve all stakeholders in environmental policy planning and implementation; introduction of environmental management systems and preparation of state target programs on greening certain branches of the national economy; introduction of new standards aimed at greening the industry and energy sectors, transport, construction, housing and utilities, agriculture; development and introduction of an incentive system for economic entities implementing an environmental management system; etc.

Level of application

- Regional/multilateral – please indicate area concerned
- National/federal
- Subnational – please indicate area concerned

Relevance of the national targets to the Aichi Biodiversity Targets

Main related Aichi Biodiversity Targets

- 1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other related Aichi Biodiversity Targets

- 1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other relevant information

The target and the specified objectives are related, directly or indirectly, to the norms and provisions of the Ukrainian legislation, in particular:

- Land and Water Codes of Ukraine;
- Laws of Ukraine “On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015”, “On Environmental Protection”, “On Air Protection”, “On Environmental Impact Assessment”, “On Strategic Environmental Assessment”, etc.;
- “National Action Plan to Combat Land Degradation and Desertification”, “Action Plan for the Implementation of the Concept on State Climate Change Policy Implementation until 2030”, “Concept of the National Biodiversity Conservation Program for 2005–2025”, etc.

Relevant websites, web links, and files

- Water Code of Ukraine (1995, revised) – <http://zakon.rada.gov.ua/laws/show/213/95-BP>
- Land Code of Ukraine (2001, revised) – <http://zakon.rada.gov.ua/laws/show/2768-14>
- On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015” (2000, revised) – <http://zakon.rada.gov.ua/laws/show/1989-14>
- On Air Protection (1992, revised) – <http://zakon.rada.gov.ua/laws/show/2707-12>
- On Environmental Protection (1991, revised) – <http://zakon.rada.gov.ua/laws/show/1264-12>
- On Environmental Impact Assessment (2017) – <http://zakon.rada.gov.ua/laws/show/2059-19>
- On Strategic Environmental Assessment (2018) – <http://zakon.rada.gov.ua/laws/show/2354-19>
- On the implementation of the Concept of the National Biodiversity Conservation Program for 2005–2025 (2004) – <https://zakon.rada.gov.ua/laws/show/z675-2004-p>
- National Action Plan to Combat Land Degradation and Desertification (2016) – <http://zakon.rada.gov.ua/laws/show/271-2016-p#n8>
- Action Plan for the Implementation of the Concept on State Climate Change Policy Implementation until 2030 (2017) – <http://zakon.rada.gov.ua/laws/show/878-2017-p#n8>

National Target 5 (NT 5). Halting the loss of biological and landscape diversity and establishing the ecological network

Rationale for the national target

The need to create a system for prevention and control of invasive alien species; control over the trade in

endangered species of wild flora and fauna; education on the value of ecosystem services and further enforcement of the ecosystem services value appraisal; increasing the area of the national ecological network, implementing a system of environmental protection measures to preserve the biological and landscape diversity, and expanding the nature reserve fund area; introduction of the ecosystem approach to management and adaptation of the Ukrainian legislation in the field of environmental protection in accordance with the requirements of the European Union aquis communautaire; creation of a network of *ex situ* breeding and reaclimatization centers for rare and endangered plant and animal species; creation of a system of economic incentives to promote the preservation of biological and landscape diversity and the formation of the ecological network; adopting measures to stop the catastrophic decline of stocks of aquatic living resources.

The target is consistent with the implementation of the provisions of the signed and ratified international treaties, in particular: the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention), CMS and several agreements concluded under the CMS auspices (EUROBATS, ACCOBAMS, AEWa); CITES; the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat; the Convention on the Protection of the Black Sea Against Pollution; the UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions; the Framework Convention on the Protection and Sustainable Development of the Carpathians; the European Landscape Convention.

Level of application

- Regional/multilateral – please indicate area concerned
- National/federal
- Subnational – please indicate area concerned

Relevance of the national targets to the Aichi Biodiversity Targets

Main related Aichi Biodiversity Targets

- 1 6 11 16
- 2 7 12 17
- 3 8 13 18
- 4 9 14 19
- 5 10 15 20

Other related Aichi Biodiversity Targets

- 1 6 11 16
- 2 7 12 17
- 3 8 13 18
- 4 9 14 19
- 5 10 15 20

Other relevant information

Implementation of the target is directly and indirectly supported by the provisions of the current legislation, in particular:

- Laws of Ukraine “On the Ecological Network of Ukraine”, “On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015”, “On Environmental Protection”, “On Environmental Impact Assessment”, “On Nature Reserve Fund of Ukraine”, “On Fishery, Commercial Fishing and Protection of Aquatic Bioresources”, “On Flora”, “On Fauna”, “On Strategic Environmental Assessment”, “On the Red Data Book of Ukraine”, etc.;
- “Provisions on the Green Data Book of Ukraine”, “Concept of the National Biodiversity Conservation Program for 2005–2025”, etc.

Relevant websites, web links, and files

- On the Ecological Network of Ukraine (2004, revised) – <http://zakon.rada.gov.ua/laws/show/1864-15>
- On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015 (2000, revised) – <http://zakon.rada.gov.ua/laws/show/1989-14>
- On Environmental Protection (1991, revised) – <http://zakon.rada.gov.ua/laws/show/1264-12>
- On Environmental Impact Assessment (2017) – <http://zakon.rada.gov.ua/laws/show/2059-19>
- On Nature Reserve Fund of Ukraine (1992, revised) – <http://zakon.rada.gov.ua/laws/show/2456-12>
- On Fishery, Commercial Fishing and Protection of Aquatic Bioresources (2011, revised) – <http://zakon.rada.gov.ua/laws/show/3677-17>
- On Flora (1999, revised) – <http://zakon.rada.gov.ua/laws/main/591-14>
- On Strategic Environmental Assessment (2018) – <http://zakon.rada.gov.ua/laws/show/2354-19>
- On Fauna (2001, revised) – <http://zakon.rada.gov.ua/laws/show/2894-14>
- On the Red Data Book of Ukraine (2002, revised) – <http://zakon.rada.gov.ua/laws/main/3055-14>
- On the implementation of the Concept of the National Biodiversity Conservation Program for 2005–2025 (2004) – <https://zakon.rada.gov.ua/laws/show/675-2004-p>
- Provisions on the Green Data Book of Ukraine (2002, revised) – <http://zakon.rada.gov.ua/laws/show/1286-2002-п>

National Target 6 (NT 6). Ensuring ecologically balanced nature management

Rationale for the national target

The importance of ensuring non-exhaustive use of natural resources, further development of the national system of natural resource inventories (cadastres), state statistical reporting on the use of natural resources and environmental pollution; preparation of the Concept of Sustainable Consumption and Production; introduction of a system of incentive mechanisms for the producers to implement sustainable approaches to nature management and environmental protection, application of the latest clean technologies, innovations in the field of nature management; enhancing the energy efficiency of production; increasing the use of renewable and alternative energy sources; increasing the land sector for organic agriculture; creation of an environmentally and economically sound system of payments for the special use of natural resources and pollution charges to stimulate economic entities for environmental management; reform of the current system of environmental protection funds.

NT 6 is consistent with the implementation of the provisions of the signed and ratified international treaties, in particular: the UNFCCC, the UNCCD.

Level of application

- Regional/multilateral – please indicate area concerned
 National/federal
 Subnational – please indicate area concerned

Relevance of the national targets to the Aichi Biodiversity Targets

Main related Aichi Biodiversity Targets

- 1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other related Aichi Biodiversity Targets

- | | | | |
|----------------------------|-----------------------------|-----------------------------|--|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 6 | <input type="checkbox"/> 11 | <input type="checkbox"/> 16 |
| <input type="checkbox"/> 2 | <input type="checkbox"/> 7 | <input type="checkbox"/> 12 | <input type="checkbox"/> 17 |
| <input type="checkbox"/> 3 | <input type="checkbox"/> 8 | <input type="checkbox"/> 13 | <input type="checkbox"/> 18 |
| <input type="checkbox"/> 4 | <input type="checkbox"/> 9 | <input type="checkbox"/> 14 | <input checked="" type="checkbox"/> 19 |
| <input type="checkbox"/> 5 | <input type="checkbox"/> 10 | <input type="checkbox"/> 15 | <input checked="" type="checkbox"/> 20 |

Other relevant information

Implementation of the target is directly and indirectly supported by the provisions of the current legislation, in particular:

- Laws of Ukraine “On the Ecological Network of Ukraine”, “On Air Protection”, “On Environmental Protection”, “On Environmental Impact Assessment”, “On Fishery, Commercial Fishing and Protection of Aquatic Bioresources”, “On Flora”, “On Fauna”, “On Strategic Environmental Assessment”;
- “Energy Strategy of Ukraine for the Period until 2035 “Safety, Energy Efficiency, Competitiveness”, “National Action Plan to Combat Land Degradation and Desertification”, “Action Plan for the Implementation of the Concept on State Climate Change Policy Implementation until 2030”, “Concept of the National Biodiversity Conservation Program for 2005–2025”.

Relevant websites, web links, and files

- On the Ecological Network of Ukraine (2004, revised) – <http://zakon.rada.gov.ua/laws/show/1864-15>
- On Air Protection (1992, revised) – <http://zakon.rada.gov.ua/laws/show/2707-12>
- On Environmental Protection (1991, revised) – <http://zakon.rada.gov.ua/laws/show/1264-12>
- On Environmental Impact Assessment (2017) – <http://zakon.rada.gov.ua/laws/show/2059-19>
- On Fishery, Commercial Fishing and Protection of Aquatic Bioresources (2011, revised) – <http://zakon.rada.gov.ua/laws/show/3677-17>
- On Strategic Environmental Assessment (2018) – <http://zakon.rada.gov.ua/laws/show/2354-19>
- On Fauna (2001, revised) – <http://zakon.rada.gov.ua/laws/show/2894-14>
- Energy Strategy of Ukraine for the period up to 2035 “Safety, Energy Efficiency, Competitiveness” (2017) – <http://zakon.rada.gov.ua/laws/show/605-2017-p#n8>
- On the implementation of the Concept of the National Biodiversity Conservation Program for 2005–2025 (2004) – <https://zakon.rada.gov.ua/laws/show/675-2004-p>
- National Action Plan to Combat Land Degradation and Desertification (2016) – <http://zakon.rada.gov.ua/laws/show/271-2016-p#n8>
- Action Plan for the Implementation of the Concept on State Climate Change Policy Implementation until 2030 (2017) – <http://zakon.rada.gov.ua/laws/show/878-2017-p#n8>

National Target 7 (NT 7). Improving the regional environmental policy

Rationale for the national target

The need for improving the regional policy to consider the environmental component, in particular, through development and implementation of regional environmental action plans (including the development of methodology and preparation of local action plans); incorporation of an environmental component into strategic documents for urban and regional development; designing a regulatory framework for environmental and economic macroregions; classification of regions by the level of technogenic and environmental risks, creating the relevant databanks for geodata and maps; execution of a pilot project on combining the spatial planning system with long-term forecasting procedures, ecological and socio-economic planning and strategic environmental assessment; fostering “public-government-business” partnership at the regional level;

mitigating the negative impact of urbanization processes on the natural environment.

The target is consistent with the implementation of the provisions of the Framework Convention on the Protection and Sustainable Development of the Carpathians and the UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions, signed and ratified by Ukraine.

Level of application

Regional/multilateral – please indicate area concerned
 National/federal
 Subnational – please indicate area concerned

Relevance of the national targets to the Aichi Biodiversity Targets

Main related Aichi Biodiversity Targets

1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other related Aichi Biodiversity Targets

1 6 11 16
 2 7 12 17
 3 8 13 18
 4 9 14 19
 5 10 15 20

Other relevant information

Implementation of the target is directly and indirectly supported by the provisions of the legislation, in particular the laws of Ukraine “On the Ecological Network of Ukraine”, “On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015”, “On Air Protection”, “On Environmental Protection”, “On Environmental Impact Assessment”, “On Strategic Environmental Assessment”, etc., as well as the following provisions: “State Strategy for Regional Development of Ukraine until 2020”, “Concept of the National Biodiversity Conservation Program for 2005–2025”, etc.

Relevant websites, web links, and files

- On the Ecological Network of Ukraine (2004, revised) – <http://zakon.rada.gov.ua/laws/show/1864-15>
- On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015 (2000, revised) – <http://zakon.rada.gov.ua/laws/show/1989-14>
- On Air Protection (1992, revised) – <http://zakon.rada.gov.ua/laws/show/2707-12>
- On Environmental Protection (1991, revised) – <http://zakon.rada.gov.ua/laws/show/1264-12>
- On Environmental Impact Assessment (2017) – <http://zakon.rada.gov.ua/laws/show/2059-19>
- State Strategy for Regional Development of Ukraine until 2020 (2014) – <http://zakon.rada.gov.ua/laws/file/text/59/f430556n25.doc>
- On the implementation of the Concept of the National Biodiversity Conservation Program for 2005–2025 (2004) – <https://zakon.rada.gov.ua/laws/show/675-2004-p>

Section II. Implementation measures taken, assessment of their effectiveness, associated obstacles, and scientific and technical needs to achieve national targets

This section introduces the key measures implemented in order to fulfill the objectives of the Aichi Biodiversity Targets.

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

1. Increasing the level of public awareness of biodiversity

Legal and regulatory measures aimed at creating a system for informing and providing access to information on biodiversity conservation and sustainable use of biodiversity.

The main objectives and targets pertaining to raising public awareness of environmental protection and sharing knowledge on biodiversity are defined by a set of strategic and program documents, such as the Law of Ukraine “On the Main Principles (Strategy) of the National Environmental Policy of Ukraine for the Period until the Year 2020” (NSB) (2010), Concept of the National Biodiversity Conservation Program for 2005–2025, National Action Plan for Environment Protection for 2011–2015, and other documents.

The establishment of a national environmental information system is one of the main activities for this measure. The government has approved the [Concept of the all-national Open Environment automated system \(2018\)](#). This concept envisages the creation of a nationwide automated information and analysis system for information access, systematic provision of information on the activities of the executive branch, provision of data on natural resource inventories, etc.

Information centers (Aarhus Information Center and relevant subdivisions of the regional state administrations) operate in accordance with the principles of the Aarhus Convention.

[Order of the Ministry of Ecology “On the ecological passport of the region” \(2014\)](#) determines the reporting procedure regarding the interaction with the public and mass media. The document is crucial for the indirect assessment of the public interest in biodiversity conservation. Annual ecological passports of the regions are available for the public on the website of the Ministry of Ecology.

NSB stipulates increasing environmental advertising in mass media, public participation in decision-making, development and implementation of the Strategy for Environmental Education for Sustainable Development, development of a network of environmental education centers, and creation of a system of environmental training and skill development for the government officials. The reporting period was marked by the creation of the Intersectoral Coordination Centre, the Interdepartmental Working Group, and a Partnership Network of Education for Sustainable Development (ESD), as well as by the development of relevant programs and methodological support; also, certain ESD-related initiatives were implemented.

The creation of environmental education centers is primarily associated with protected areas (PAs). Annually, environmental summer camps are organized at the national nature parks (“Desniansko-Starohutskyi”, “Podilski Tovtry”, “Hutsulshchyna”, “Uzhansky”, and “Prypiat-Stokhid”).

In the context of Ukraine-NATO cooperation and Euro-Atlantic integration, the action plans incorporate matters related to environmental education and raising awareness. The Decree of the President of Ukraine “On the National Strategy of Education Development in Ukraine until 2021” (2013) emphasizes “greening” of education in accordance with the principles of sustainable development. This also determines the ways for raising public awareness with regards to environmental protection and the procedure for information dissemination and outreach activities.

Scientific institutions, administrations of protected areas, NGOs, and educational institutions of various levels hold events that aim to popularize relevant knowledge among the general public: the all-Ukrainian initiative “Days of Science”, “Science Picnics in Ukraine”, the Ukrainian Science Festival, International Fascination of Plants Day, etc. The number of nationwide awareness-raising events and participants involved is steadily increasing. In 2015, Ukraine was ranked third among all the participating countries by the number of events held along the worldwide initiative “Fascination of Plants Day”, under the umbrella of the European Plant Science Organisation (EPSO); in 2017, Ukraine was ranked fifth. Ties are emerging with similar projects carried out in the EU countries. Traditional knowledge of indigenous peoples, in particular qırmlar

(Crimean Tatars) that inhabit the territory temporarily occupied by the Russian Federation, is introduced into the public space: a botany reference book “Illustrated dictionary of Crimean Tatar plant names” is prepared.

Ukraine takes part in Pan-European citizen science projects (BirdID).

Public events take place yearly to circulate knowledge on the importance of animals and plants for human livelihoods and for the planet. Regular campaigns aim to popularize and conserve wild species of fauna (World Migratory Bird Day, European Bat Night, etc.). An edition of the “Encyclopedia of Migratory Species of Wild Animals of Ukraine” has been prepared.

Training courses in ecology and conservation of bio- and habitat diversity have been organized for level II and III education specialists in the respective educational and scientific institutions. In cooperation with the Environment Canada, species identification guides for CITES-listed species, aimed at the State Environmental Inspectorate staff at border checkpoints, have been prepared and published – namely, for mammals (hunting trophies), birds, reptiles, fish (sturgeon), and arthropods.

Information materials on biodiversity (pop-science, booklets, online resources, leaflets, posters, calendars, etc.) have been published and disseminated. Social advertising campaigns were launched.

National Bank of Ukraine issued two series of commemorative coins dedicated to rare species of animals and plants, namely “Flora and Fauna of Ukraine” and “Fauna in Ukrainian Cultural Monuments”.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 1, ABT 1, ABT 11, ABT 12

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

Regulatory and legislative acts, reports of government agencies, and analytical publications of NGOs were analyzed. Main lines of assessment: availability of the information system and progress in its creation, the fact of regular publishing of reports and other reporting information, environmental advertising, assessment of citizens’ environmental awareness, strategic steps towards environmental education, and development of a network of environmental education centers.

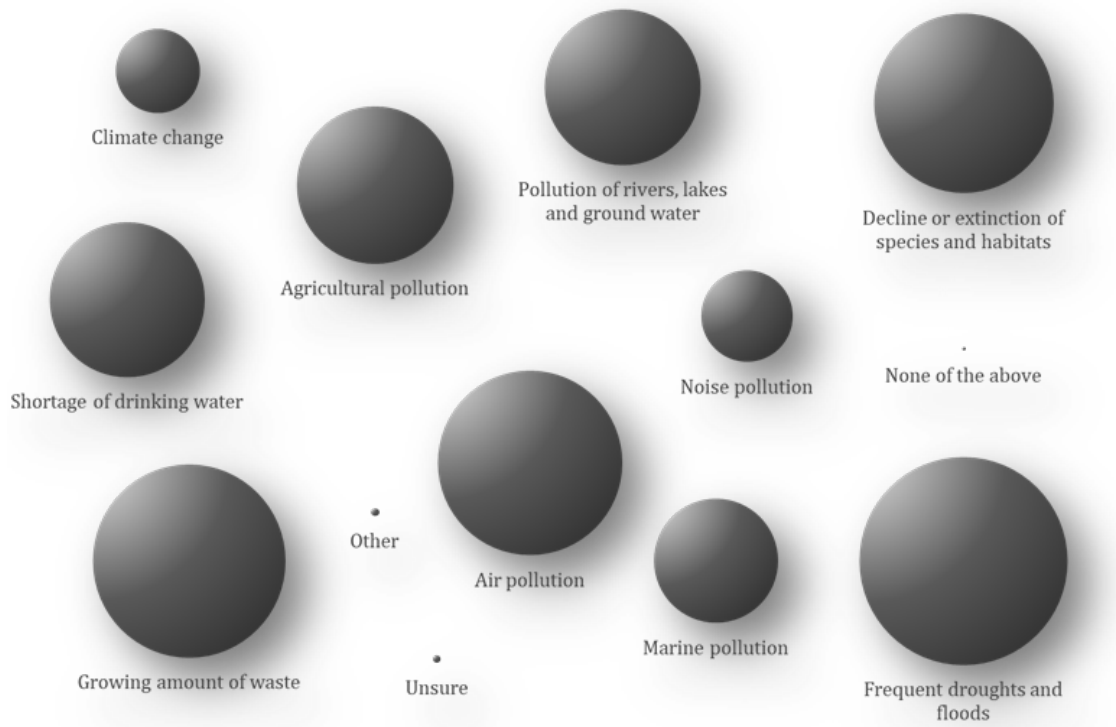
Implementation progress of this measure in the reporting period was uneven (although one should take into account the complex nature of the measure – the creation of a national information system and provision of information per se). The concept of the “Open Environment” automated system was approved only at the end of 2018. Therefore, even considering the involvement of the public in discussing the format of this system, progress along this criterion is assessed as insufficient. During the reporting period, the website of the Ministry of Ecology and other specialized web platforms were the main information portals. The analysis of environmental education in Ukraine, conducted in 2016, shows partial effectiveness of the applied measures for the implementation of the Concept of Environmental Education and highlights the need for monitoring, especially concerning basic and postgraduate education.

Progress towards the provision of regular information and reports on the state of environmental protection and preservation varies over the years. The latest National Report on the State of the Environment covers the year 2015, the National Report on Environmental Policy Implementation dates back to 2012, and the latest NGOs’ “Public Assessment Report on the National Environmental Policy” is only available for the year 2015. At the same time, access to certain data sets, including ecological passports of the regions and reporting on the progress in implementation of regional and national plans, is provided.

There is currently no collection of statistical data on environmental advertising. The National Reports on the state of the environment for the years 2013–2015 and the ecological passports of the regions provide limited statistical information, e. g., on the number of publications submitted to the print media. However, it is rather

common for the reports to offer qualitative characteristics of the work carried out (“constantly”, “regularly”) instead of quantitative and thematic data.

Finally, there is currently no systematic monitoring of public awareness pertaining to biodiversity. A number of NGOs, non-governmental think tanks, and the UNDP GEF investigated the issue, but each study used different wording of questions and focused on various issues (e. g., concern for environmental issues, understanding the concept of “environmental rights”, associating the word “environment” with wildlife conservation). Therefore, identification of significant trends in public awareness is not possible.



Environmental issues which Ukrainian citizens consider most important

Diameter of a bubble indicates the number of people who chose the respective answers. Raw data come from the analytical report “Environmental Portrait of the Citizen of Ukraine”

(<http://www.rac.org.ua/uploads/content/482/files/webenvportraitfullversion2018.pdf>).

Relevant websites, web links and files

- Ministry of Ecology and Natural Resources of Ukraine – <https://menr.gov.ua>
- The Aarhus Centre Kyiv – <https://menr.gov.ua/content/orhuskiy-centr.html>; <https://www.facebook.com/OrhusCentrKyiv>
- The ecological passports of all administrative regions of Ukraine – <https://menr.gov.ua/content/ekologichni-pasporti-regioniv.html>
- The Ministry of Ecology opens access to 12 data sets – <https://menr.gov.ua/news/31557.html>
- Reports of the Ministry of Ecology – <https://menr.gov.ua/timeline/Zviti.html>
- Evaluation of recent national environmental assessments in Ukraine (October 2017, European Environment Agency) – <https://bit.ly/2LhjMF4>
- ENI SEIS II East. Implementation of the Shared Environmental Information System (SEIS) principles and practices in the ENP East region. Ukraine profile – <https://bit.ly/2ZvA2ez>
- International Process “Education for Sustainable Development” – <http://ecoosvita.org.ua>
- Days of Science – <https://dni-nauky.in.ua/>
- The Ukrainian Science Festival – <http://festival.nas.gov.ua>
- West-Ukrainian Ornithological Society. BirdID Training Course– <http://zuotov.blogspot.com/p/birdid.html>

- International Bat Night in Ukraine – http://kazhan.org.ua/ukr/projects/pr_ibn_2013.htm
- Fascination of Plants Day in Ukraine – <https://plantday18may.org/category/europe/ukraine/>, <https://www.facebook.com/fopd.ukraine>
- The Flora of the Ukrainian sub-Mediterranean region in Kirimli. On the draft illustrated vocabulary of the Crimean Tatar phytonyms (dated 30.08.2017) – <http://www.nas.gov.ua/EN/Messages/News/Pages/View.aspx?MessageID=3409>
- Report “Portrait of the Ukrainian citizen in view of environmental issues”, 2018 – <http://www.rac.org.ua/uploads/content/482/files/webenvportraitfullversion2018.pdf>
- Decree of the President of Ukraine on the National Strategy of Education Development in Ukraine until 2021 (№ 344/2013, 25.06.2013) – <http://zakon2.rada.gov.ua/laws/show/344/2013>
- Order of the Ministry of Ecology and Natural Resources on Provisions of environmental education in the protected area entities (№ 399, 26.10.2015) – <http://zakon.rada.gov.ua/laws/show/ru/z1414-15>
- The order by the Ministry of Ecology “On the approval of the plan of measures” (№ 88, 14.03.2018) – https://menr.gov.ua/files/docs/nakazy/2018/nakaz_088.pdf
- Order of the Cabinet of Ministers of Ukraine on adoption of the Concept of the all-national “Open Environment” automated system (№ 825-p, 07.11.2018) – <http://zakon.rada.gov.ua/laws/show/825-2018-p>
- Radovenchik, V.M., Radovenchik, Ya.V., Kachula, I.G. 2016. Access to environmental information in Ukraine. Visnyk Nat. Tech. Uni. Ukraine “Kyiv Poytechnichny Instytut”. Chemical Engineering, Ecology and Resource Economy. 1: 75-81. – http://nbuv.gov.ua/UJRN/VKPI_hier_2016_1_17
- Isaenko, V.M. SWOT-analysis and GAP-analysis of policies, programs, plans and regulatory acts in education and research and recommendations for their improvement according to the CBD – Kherson: DS Hrin, 2016. – 106 p. – http://www.ua.undp.org/content/dam/ukraine/docs/EE/Rio/Rio-6_Osvita.pdf

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

2. Implementation of the Ukraine-European Union Association Agreement towards biodiversity conservation

A set of legal and regulatory measures aimed at integrating Ukraine into the European legal space. European integration is the main driver for modernizing the legislation on biodiversity conservation in Ukraine.

Chapter 6 of the Title 5 of the [Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part](#), acts as the legal basis for European integration processes in the field of environmental protection. Annex XXX to the Association Agreement entails the approximation of national legislation to EU legislation in the “Environment” sector. The Action Plan on implementation of the Ukraine-EU Association Agreement has been in place since 2017. It partially covers the objectives of ABTs 1, 5, 6, 7, 8, 9, 10, 12, 17 and provides for improved waste management, protection of migratory species of wild birds, implementation of the Birds and Habitats Directives, development of the Emerald Network, fostering environmental education, implementation of legislation concerning the Sea of Azov and the Black Sea, improvement of the water resources management at the basin level and prevention of water pollution, etc. Implementation of the plan is linked to the following: [“Procedure for the Development of River Basin Management Plans”](#), the Laws of Ukraine [“On Amendments to the Law of Ukraine “On Drinking Water and Drinking Water Supply”](#), [“On Ratification of the Agreement between the Government of the Republic of Moldova and the Cabinet of Ministers of Ukraine on Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin”](#), [“On Ratification of the Agreement on Financing the Danube Transnational Program”](#). Ministry of Ecology presented the draft Law of Ukraine [“On the Territories of the Emerald Network”](#) for a public hearing.

The Action Plan on implementation of the Agreement provides for transposition of the requirements of the relevant directives into the national legislation of Ukraine in order to reduce environmental pollution (see section 2.12).

Development of bills on environmental protection and institutional capacity building of stakeholders is carried out with the support of the European Commission, UNDP GEF, individual partner countries, and others. Implementation of the projects involves companies (for instance, EPTISA) and NGOs (e. g., Environment-People-Law, EPL).

APENA is the EU project “Support to Ukraine in approximation of the EU environmental acquis” (since 2015) aiming to assist in developing laws and regulations, raising public awareness and the institutional capacity of the Ministry of Ecology and other stakeholders.

Development of the Emerald network in Ukraine encompasses a series of civic initiatives aimed at collection of data and justification of the status of potential Emerald network sites.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 1, NT 2, NT 4, ABT 1, ABT 2, ABT 8, ABT 11, ABT 12

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

Assessment is based on the analysis of laws, regulations, draft legislation, and reports.

There is progress in the identification of areas for the Emerald network and maintenance of the Red Data Book of Ukraine (see Measures 16, 17). A set of laws and regulations is adopted for the implementation of the EU directives (see Measures 3, 4, 5, 6, 12, 21). Other acts are at various stages of drafting. Several successful joint projects were implemented in the fields of water resources, horizontal environmental legislation, waste, industrial emissions, etc.

Relevant websites, web links and files

- Eurointegration portal: Association Agreement between the European Union and its Member States and Ukraine – <https://eu-ua.org/tekst-uhody-pro-asotsiatsiiu>
- Action Plan for the Implementation of the Association Agreement between Ukraine, of the one part, and the European Union, the European Atomic Energy Community and their Member States, of the other part (approved by the order of the Cabinet of Ministers of Ukraine № 1106, 25.10.2017) – <http://bit.ly/2zphb6i>
- Progress reports on implementation of the Ukraine – EU Association Agreement – <https://bit.ly/2LkuQQ4>
- The Law of Ukraine on Adopting the National Target Program for Developing Water Management and Environmental Improvement of the Dnipro River Basin for the Period up to 2021 (№ 4836-VI, 24.05.2012) – <http://zakon.rada.gov.ua/laws/show/4836-17>
- The Law of Ukraine on Amendments to Certain Legislative Acts of Ukraine Regarding Implementation of Integrated Approaches in Water Resources Management Based on the Basin Principle (№ 1641-VIII, 04.10.2016) – <http://zakon.rada.gov.ua/laws/show/1641-19>
- Order of the Ministry of Ecology and Natural Resources on ratification of the Typical regulation of basin councils (№ 23, 26.01.2017) – <http://zakon.rada.gov.ua/laws/show/z0231-17>
- Order of the Ministry of Ecology on the identification of sub-basins and water management areas within the established river basin districts (№ 25, 26.01.2017) – <http://zakon.rada.gov.ua/laws/show/z0208-17>
- Order of the Ministry of Ecology and Natural Resources on the adoption of the Order of the water management balances development (№ 26, 26.01.2017) – <http://zakon.rada.gov.ua/laws/show/z0232-17>

- Order of the Ministry of Ecology and Natural Resources on the list adoption of pollutants to determine chemical condition of surface and underground waters arrays and ecological potential of the artificial or essentially changed array of surface waters (№ 45, 06.02.2017) – <http://zakon.rada.gov.ua/laws/show/ru/z0235-17>
- Order of the Ministry of Ecology and Natural Resources on the adoption of borders of river basins areas, subbasins and water-resource regions (№ 103, 03.03.2017) – <http://zakon.rada.gov.ua/laws/show/z0421-17>
- State Water Monitoring Procedures (approved by the resolution of the Cabinet of Ministers of Ukraine № 758, 19.09.2018) – <http://zakon.rada.gov.ua/laws/show/758-2018-п>
- Resolution of the Cabinet of Ministers of Ukraine on the approval of the Order of Elaboration of Management Plan for a River Basin (№ 336, 18.05.2017) – <http://zakon.rada.gov.ua/laws/show/336-2017-п>
- EPTISA Worldwide. Ukraine – <http://www.eptisa.com/en/eptisa-worldwide/europe/ukraine/>
- Eptisa wins new project in Ukraine: Support to Ukraine in approximation of EU Environmental Acquis (September 10, 2015) – <https://bit.ly/2LakaFh>
- ICO “Environment-People-Law” (EPL) – <http://epl.org.ua/en>
- APENA: EU Project “Support to Ukraine in approximation of EU Environmental Acquis” – <http://env-approx.org/index.php/en/>
- Public nature conservation initiative “Emerald – Natura 2000 in Ukraine” – <http://pryroda.in.ua/emerald/>
- Emerald Network and Natura 2000 – http://wwf.panda.org/uk/our_work/pa_networks/
- Involvement of the public and scholars in the design of the Emerald Network in Ukraine / Polyanska K.V., Borysenko K.A., Paweł Pawlaczyk, Vasylyuk O.V. and others. / ed. by A. Kuzemko. – Kyiv, 2017. – 304 p. – <https://bit.ly/2MHJJAr>

Other relevant information

EU funded projects and proactive civic organizations play a key role in the drafting and promotion of bills.

The book “Involvement of the Public and Scientists in the Design of the Emerald Network in Ukraine” contains the first version of the “Shadow list” (78 areas), suggestions for subsequent activities and expert recommendations on the principles for network development.

Obstacles and scientific and technical needs related to the measure taken

The provisions of the Bird and Habitat Directives that are key for biodiversity conservation have yet to be fully implemented in legislation of Ukraine. Bills on implementation of the directives and “On the Emerald network sites” are in preparation.

The efforts of stakeholders and the public sector resulted in the creation of a wide array of environmental initiatives; however, the adoption and approval of relevant regulations and their implementation are slow and complicated.

Relevant websites, web links and files

- The Ministry of Ecology initiates the public discussion of the draft law “On the Emerald Network Areas” – <https://bit.ly/2Zm5GvR>
- Ostap Semerak: The Association Agreement requires rapid adoption of the Bird and Habitat Directives – <https://bit.ly/2ruNsVs>
- Clean Water Map – <https://bit.ly/2HqHXje>
- Report of the Ministry of Ecology on Performance of the Agreement of Association between Ukraine and the EU for the 3rd quarter, 2018 – <https://bit.ly/2E86AAh>
- Geoportal “Water resources of Ukraine” – <http://map.davr.gov.ua:44481>
- Good Ecological Management in Ukraine: Compliance to the European Principles. The Expert Note. VEGO MAMA-86, 2018. – 36 p. – <https://bit.ly/2HtrydJ>

- How to enhance the effectiveness of the Ukraine-EU Association at the regional level. The expert note. – The think tank “Society and Environment”, 2018. – 20 p. – <https://bit.ly/2HssS0C>

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

3. Implementation of Environmental Impact Assessment and Strategic Environmental Assessment

Legal measure and the associated regulatory and policy procedures.

The Law of Ukraine “On Environmental Impact Assessment” (EIA) (adopted in 2017) entails the responsibility of economic entities for the environmental impact (including that on biodiversity), compulsory and public nature of environmental impact assessment, and mandatory public discussion of the EIA reports, notably concerning biodiversity (flora and fauna). The Law envisages implementation measures seeking to prevent, avert, avoid, reduce, eliminate a substantial adverse environmental impact, or otherwise identify the relevant compensatory measures. Under the new law, the authorities should take into account the outcomes of public discussions in the decision-making process.

The Law of Ukraine “On Strategic Environmental Assessment” (SEA) (adopted in 2018) develops the UNECE tools for the SEA, regulates relations in the field of the EIA, applies to the state planning documents for agriculture, forestry, fisheries, energy, industry, transport, waste management, water use, environmental protection, telecommunications, tourism, urban development or land management, the implementation of which will require EIA or evaluation of environmental impact on protected areas.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 4, ABT 2, ABT 5, ABT 8, ABT 11, ABT 12

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

Implementation of the abovementioned laws prompted amendments to a set of statutory laws, *inter alia*, the Law of Ukraine “On Fauna”, “On Flora”, “On Nature Reserve Fund of Ukraine”: during the EIA procedure, it is mandatory to consider the impact on fauna and flora, habitat, species migration routes and conditions favorable for reproduction, as well as impact on the territories and facilities of the NRF.

Environmental impact assessment is among the mandatory conditions for construction and subsoil use. The procedure for conducting public hearings is approved. The Unified National EIA Registry is developed, public hearings are held. Over the first seven months of the Registry’s operation, more than 2,000 entries were submitted. Assessment is based on the analysis of normative acts and open registries.

Relevant websites, web links and files

- The Law of Ukraine on Environmental Impact Assessment (№ 2059-VIII, 23.05.2017) – <http://zakon.rada.gov.ua/laws/2059-19>
- Environmental Impact Assessment. National Registry – <http://eia.menr.gov.ua/>
- The Law of Ukraine on Strategic Environmental Assessment (№ 2354-VIII, 20.03.2018) – <http://zakon.rada.gov.ua/laws/2354-19>
- Planning the Strategic Environmental Assessment –

http://www.env-approx.org/images/documents/221/info_02.pdf

- Order of the Ministry of Regions on Changes to the Order of Issuing Project Documentation for Construction (№ 174, 12.07.2018) – <http://zakon.rada.gov.ua/laws/z0883-18>
- Order of the Cabinet of Ministers of Ukraine on the Adoption of the Order for Special Permits on Mining (№ 615, 30.05.2011 (amended on 23.10.2018) – <http://zakon.rada.gov.ua/laws/615-2011-п>
- Order of the Cabinet of Ministers of Ukraine on the Adoption of the Order for Public Hearings for Environmental Impact Assessment (№ 989, 13.12.2017) – <http://zakon.rada.gov.ua/laws/989-2017-п>

Other relevant information

Environmental impact assessment is a new effective legal measure for habitat protection with the best-developed and enacted implementation mechanism.

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

4. Integration of plans on biodiversity conservation into strategic and sectoral development programs

A set of legal and regulatory measures that encompass the approval of relevant regulatory acts.

The “State Strategy for Regional Development of Ukraine for the period until 2020” (2014) has a task of “rational use of recreational resources of the territories and objects (entities) of the nature reserve fund for the formation of the economic environment and the development of employment in the regions”.

The “Poverty Alleviation Strategy” (2016) includes the issue of restoration, conservation and sustainable use of ecosystems, in particular as a result establishing the mechanism of economic incentives for the use and protection of land and improving soil fertility”.

“Strategy for the Development of Tourism and Resorts until 2026” (2017) incorporates the need to ensure the sustainable use of nature’s therapeutic and recreational resources, preserving the natural systems’ capacity to repair themselves, and the creation of an interactive database on tourism and recreational resources of Ukraine, as well as sites of cultural heritage and PAs.

“Action Plan for the Implementation of the Concept of the State Climate Change Policy Implementation until 2030” (2017) provides for the “determination and introduction of approaches and technologies that facilitate the sustainable management of ecosystems”.

“National Transport Strategy of Ukraine until 2030” (2018) endorses the development of safe for society, environmentally friendly and energy-efficient transportation. It includes fulfillment of obligations to the Convention on the International Maritime Organization, the CBD and the UNCCD, requires the application of technologies that minimize the wildlife- and land-related impact, contribute to marine biodiversity conservation, mainstream environmental protection, conservation of land, water bodies and biodiversity during transport infrastructure development.

The Energy Strategy of Ukraine for the period until 2035 (approved in 2017) aims to satisfy the society’s and economy’s needs in fuel and energy in a technically reliable, safe, economically efficient and environmentally friendly way to assure enhancement of quality of life. The strategy provides for implementation of measures to fulfil the strategic environmental goals, including the approval of the National Emissions Reduction Plan for Large Combustion Plants and the reconstruction and modernization of thermal power stations and cogeneration plants; curbing the environmental impact of energy, *inter alia*, by impact assessments; introduction of environmental management and audit system (EMA8); promoting the waste-to-energy approach.

One of the aims of the Agricultural Sector Development Strategy until 2020 (2013) is the sustainable use of agricultural land and the reduction of the human-induced environmental pressures pertaining to the agricultural sector.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 4, NT 7, ABT 2, ABT 11

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

Assessment is based on the analysis of documents defining the national goals and strategies for national and regional development, reports, and analytical publications of NGOs and UNDP GEF. Incorporation of biodiversity values into national and regional development strategies commenced in 2016–2018 and is still ongoing. Relevant adjustments are awaited in the development strategies for forestry, fisheries, agricultural production, and military sectors.

Relevant websites, web links and files

- State Strategy for Regional Development of Ukraine for the period until 2020 (approved by the order of the Cabinet of Ministers of Ukraine № 385, 06.08.2014) – <http://zakon.rada.gov.ua/laws/385-2014-п>
- Poverty Alleviation Strategy (approved by the order of the Cabinet of Ministers of Ukraine № 161-p, 16.03.2016) – <http://zakon.rada.gov.ua/laws/161-2016-p>
- Strategy for the Development of Tourism and Resorts until 2026 (approved by the order of the Cabinet of Ministers of Ukraine № 168-p, 16.03.2017) – <http://zakon.rada.gov.ua/laws/168-2017-p>
- Concept of the State Climate Change Policy Implementation until 2030 (approved by the order of the Cabinet of Ministers of Ukraine № 932-p, 07.12.2016) – <http://zakon.rada.gov.ua/laws/878-2017-p>
- National Transport Strategy of Ukraine until 2030 (approved by the order of the Cabinet of Ministers of Ukraine № 430-p, 30.05.2018) – <https://zakon.rada.gov.ua/laws/show/430-2018-p>
- Energy Strategy of Ukraine for the Period until 2035 “Safety, Energy Efficiency, Competitivity” (approved by the order of the Cabinet of Ministers of Ukraine dated № 605-p, 18.08.2017) – <https://zakon0.rada.gov.ua/laws/show/605-2017-p>
- Resolution of the Cabinet of the Ministers of Ukraine on approval of the Strategy of Development of the Agrarian Sector of Economy by 2020 (№806-p, 17.10. 2013) – <https://zakon.rada.gov.ua/laws/show/806-2013-p>
- Elbakidze, M., Hahn, T., Zimmermann N. E., et al. Chapter 4: Direct and indirect drivers of change in biodiversity and nature’s contributions to people. *IPBES (2018): The IPBES regional assessment report on biodiversity and ecosystem services for Europe and Central Asia*. – Germany, Bonn: Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. – P. 549–810. – <https://www.ipbes.net/assessment-reports/eca>

Obstacles and scientific and technical needs related to the measure taken

Procedures to adopt relevant laws and regulations show slow progress. The majority of the strategic initiatives are still unsupported by financial and political measures.

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

5. Green economy and ecological modernization

A set of legal, regulatory, financial and policy measures pertaining to greening the various sectors of the economy.

The Law of Ukraine “On Amending Some Laws of Ukraine on Ensuring Competitive Conditions of Electricity Production from Alternative Energy Sources” (2015) established an incentive system for the production of renewable energy. The system includes (1) “green” tariff (or feed-in tariff) that applies to solar, wind, biomass and small hydro energy sources; (2) tax benefits; (3) preferential conditions for joining the power grid. Other developments include a surcharge to the tariff for using Ukrainian equipment and introduction of restrictions over the “green tariff” for industrial facilities.

The “Energy Strategy of Ukraine until 2035” (adopted in 2017) indicates that the renewable sources in electricity generation should account for 7% by 2020 and should exceed 13% by 2025.

The Laws of Ukraine “On Standardization” (2014) and “On Technical Regulations and Conformity Assessment” (2015) and a number of regulations thereunder include provisions on certification and standardization of products and enterprises and endorse the establishment of certified environmental management systems in accordance with the ISO standards and introduction of products into “green markets”.

In accordance with the Law of Ukraine “On Insurance”, certain principles of insuring investor’s civil liability for environmental damage are delineated by the relevant resolution of the Cabinet of Ministers of Ukraine (2013).

Article 22 of the Law of Ukraine “On Public Procurement” (2015) specifies that the tender documentation should include information on any measures required for environmental protection. The Cabinet of Ministers of Ukraine approved the Strategy for Public Procurement Reform (Roadmap) until 2022, which, *inter alia*, should secure compliance with environmental standards and requirements in public procurement procedures (Articles 74 and 77 of Directive 2014/24/EU).

The Law of Ukraine “On Organic Production and Trade in Organic Products and Raw Materials” (2013) defines the principles to ensure a high level of biodiversity; preservation and improvement of soil fertility, soil stability, and soil biodiversity using methods that optimize the soil biological activity and provide a balanced supply of plant nutrients. This document lost its validity to be replaced by the Law of Ukraine “On General Principles and Standards of Organic Production, Trade and Labeling of Organic Products” was adopted (2018). The new law defines the directions of the state policy in terms of organic production, trade, and labeling of organic products, particularly in “safeguarding genetic safety, biodiversity and sustainable use of natural resources and their restoration”, “ensuring environmental safety in organic production processes”.

A set of financial and regulatory measures underway aims to provide incentives, support and develop the “greening” mechanisms in various sectors of the economy. State support for energy-efficient housing is in place; for instance, the “Warm Loans” state program has been active since October 2014. EBRD-managed lending programs and financial support for energy efficiency from other donors have been established.

The Resolution of the Cabinet of Ministers of Ukraine (2013) approved the Procedure of using state budget funds for financial support of target projects in the ecological modernization of enterprises.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 2, NT 4, NT 5, NT 6, ABT 3, ABT 4

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment is based on the analysis of regulatory framework on greening various sectors of the economy, as well as communication materials and reports.

The sector of renewable energy in Ukraine is growing (amounting to about 2% of total electricity production

by 2018), and likewise is the number of facilities generating electricity according to the “green” (feed-in) tariff (based on data of the State Agency on Energy Efficiency and Energy Saving of Ukraine). However, the experts point out that, for instance, hydropower development poses a threat to biodiversity, particularly in the Carpathian region (Vasko et al., 2015), where the river resources are known for the highest water quality, the lowest anthropogenic pressure, and hence a high level of biodiversity (the portion of water bodies with “good” and “excellent” status is 60% in Zakarpattia region, in line with the EU Water Framework Directive). The canyons of the Dniester and Pivdennyi Buh rivers, which are centers of endemism, are under threat of being flooded for new hydropower plants. Extensive hydropower development will lead to biodiversity loss.

Ukrainian standardization system underwent reformation, in line with the implementation of the Ukraine-European Union Association Agreement. Meanwhile, the economic mechanisms of greening various industries call for improvement.

There are no tax benefits for land users whose land includes the protected area, Emerald network or ecological network sites. The land tax abolition bill for protected areas has not been passed.

Relevant websites, web links and files

- The Law of Ukraine on Amending Some Laws of Ukraine on Ensuring Competitive Conditions of Electricity Production from Alternative Energy Sources (№ 514-VIII, 06.04.2015) – <http://zakon.rada.gov.ua/laws/514-19>
- Order of the Cabinet of Ministers of Ukraine on improvement of tariffication system for electricity from alternative energy sources (№ 589-p, 18.06.2014) – <http://zakon.rada.gov.ua/laws/589-2014-p>
- Order of the Cabinet of Ministers of Ukraine on temporary emergency measures at the electricity market” (terminated on 24.09.2014) (№ 764-p, 13.08.2014) <http://zakon.rada.gov.ua/laws/764-2014-p>
- The Law of Ukraine on Standardization (№ 1315-VII dated 05.06.2014) – <http://zakon.rada.gov.ua/laws/1315-18>
- Resolution of the Cabinet of Ministers of Ukraine on the approval of the order and rules of mandatory insurance of civil responsibility of an investor on harm posed to environment, public health under production sharing agreement, if not considered by such an agreement (№ 981, 3.11.2013) – <https://zakon.rada.gov.ua/laws/show/981-2013-rr>
- The Law of Ukraine on Technical Agreements and Compliance Assessment (№124-VIII, 15.01.2015) – <http://zakon.rada.gov.ua/laws/124-19>
- The Law of Ukraine on Public Procurements (№ 922-VIII , 25.12.2015), Article 22. Tender Documentation. – <https://zakon.rada.gov.ua/laws/show/922-19>
- Order of the Cabinet of Ministers of Ukraine on the Strategy of reforming public procurement system (roadmap) (№ 175-p, 24.02.2016,) – <https://zakon.rada.gov.ua/laws/show/175-2016-p>
- The Law of Ukraine on Production and Turnover of Organic Agricultural Products and Materials (№ 425-VII, 03.09.2013) – <https://zakon.rada.gov.ua/laws/show/425-18>
- The Law of Ukraine on the Basic Principles and Requirements for Organic Production, Turnover and Labeling of the Organic Products (№ 2496-VIII, 10.07.2018) – <https://zakon.rada.gov.ua/laws/show/2496-19>
- State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE). Data on electricity produced by alternative sources <http://sae.gov.ua/sites/default/files/2016VDE.pdf>
- State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE). In 2017 generation of renewable sector doubled to 2016: <http://sae.gov.ua/uk/news/2158>
- Orzhel, O. 2015. Green pass to Europe. Ekonomichna Pravda. 10 Feb. 2015.– <https://www.epravda.com.ua/columns/2015/02/10/527157>
- Energy Strategy of Ukraine for the Period until 2035 “Safety, Energy Efficiency, Competitiveness” (approved by the order of the Cabinet of Ministers of Ukraine dated № 605-p, 18.08.2017) – <https://zakon0.rada.gov.ua/laws/show/605-2017-p>
- Development of renewable energy in Ukraine (2017). A report on the project “The Energy Efficiency

Secretariat and Expert Hub” – <http://abc.in.ua/wp-content/uploads/2017/03/Rozvitok-VDE-v-Ukrai-ni.pdf>

- State Support for Energy Saving. Governmental program of “warm loans” – <http://saee.gov.ua/uk/consumers/derzh-pidtrymka-energozabespechenya>
- Environmental modernization – <https://bit.ly/2KWY2zd>
- Order of the Cabinet of Ministers of Ukraine on the Order of Use of Funding Provided for Environmental Modernization (№ 569, 07.08.2013) – <http://zakon.rada.gov.ua/laws/show/569-2013-п>
- Transition of Ukraine to renewable energy until 2050. A report on the results of modelling for basic and alternative scenarios of development of energy sector. – <https://bit.ly/2L6PowU>
- Vasko P.F., Vasko V.P., Ibrahimova M.R. Small hydroenergy production in the structure of energy industry of Ukraine // Renewable Energy. – 2015. – № 3. – P. 53–61. – http://nbuv.gov.ua/UJRN/vien_2015_3_11
- National Plan for the Tysa River Basin Management – <https://bit.ly/2Zvrfp0>
- Position of the WWF on development of small hydroenergetics in Ukraine, 2018 – <http://wwf.panda.org/uk/?323990/position-on-small-hydro>
- Order of the Cabinet of Ministers of Ukraine on the Adoption of Strategy of Development of the Agrarian Sector of Economy until 2020 (№ 806-p, 17.10.2013) – <http://zakon.rada.gov.ua/laws/806-2013-p>
- Ministry of Agropolicy supports organic production though land auctions – <http://www.minagro.gov.ua/uk/node/23027>
- Draft law on changes in article 282 of the Tax Code of Ukraine (terminating land tax for PAs) № 4134, 23.02.2016 – <https://bit.ly/2ZrqBN7>

Other relevant information

There are no state financial institutions in Ukraine that provide small and medium-sized enterprises (SME) with targeted preferential loans for environmental investments. Credit lines provided by international financial institutions are the main source of long-term financing for green investment.

According to IKNET Company, the following alternative energy projects are in place: a renewable energy financing program (Ukraine Sustainable Energy Lending Facility, or USELF) provided a credit line of up to €50 million; the “Innovative vouchers” program is a financial instrument for development and application of climate technologies and reduction of energy consumption (2017–2018, €1 million); the Eastern Europe Energy Efficiency and Environment Partnership Fund (E5P) (€150 million); SME finance facility of the German-Ukrainian Fund (GUF). Notably, 133 projects in energy efficiency and renewable energy were implemented during 2007–2016 though the UKEEP (“Ukraine Energy Efficiency Program”) credit line of €150 million from the EBRD. The EU’s “Greening Economies in the European Union's Eastern Neighbourhood” (EaP GREEN) program has been launched to endorse the SME greening and the SEA.

Relevant websites, web links and files

- IKNET Company. Funding alternative energy sector – <https://iknet.com.ua/uk/articles/useful-to-know/funding-programs/>
- USELF: Funding alternative energy production in Ukraine – <http://www.uself.com.ua/>
- Program “Innovative vouchers” – <http://innovoucher.com.ua/aboutprog/>
- E5P, Eastern Europe Energy Efficiency and Environment Partnership – <http://ukraine-ru.e5p.eu/>
- German Ukrainian Foundation programs – <http://guf.gov.ua/uk/programi-1>
- UKEEP, Ukraine Energy Efficiency Program – <http://www.ukeep.org/uk/>
- Marushevskiy G., Khikman D. Green business for small and medium enterprises. Kyiv, 2017. – <https://bit.ly/2PiT6UK>

Obstacles and scientific and technical needs related to the measure taken

The fundamental challenges are lack of a holistic economic development strategy and of an incentive system in such “green” sectors as green tourism, organic farming, green business of SME, and absence of relevant regional strategies.

It is essential to further encourage energy efficiency measures and the development of economical renewables. Introduction of renewable energy auctions (specifically, for solar and wind energy facilities) in 2020 should be one of the key elements of this process.

According to expert opinions, the establishment of a national integrated biodiversity conservation concept is crucial along the lines of further development of alternative energy. In particular, conservation of biodiversity calls for identification and legal confirmation of particularly valuable rivers and river areas (the so-called “no-go areas”) where construction of small hydropower plants will be prohibited entirely and the environmental standards for construction and operation of small hydro facilities will be developed.

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

6. Implementation of integrated water resource management

A set of legal, regulatory and practical measures. Ukraine is going through reforms of the state water resources management system. The reform objectives are: (1) to provide sufficient volume of good-quality water resources for the restoration, rehabilitation and continued development of aquatic and semi-aquatic ecosystems; (2) to achieve good condition of Ukrainian water bodies; (3) to establish integrated water resource management using a basin approach for restoration and sustainable development of Ukraine’s water resource capacities and its natural aquatic ecosystems. The reform includes but is not limited to such measures, as development and approval of a procedure for integrated water resource management, establishment of river basin councils, development of river basin management plans, etc.

As a part of the reform, Ukraine developed the legislative framework to implement the EU Water Framework Directive; the basins were identified, and basin management offices were established to be responsible for water resources restoration and implementation of river basin management plans.

The Cabinet of Ministers of Ukraine adopted the Resolution № 336 (dated May 18, 2017) “On Approving the Procedure for Developing a River Basin Management Plan”. A river basin management plan contains an analysis of the status and measures implemented to achieve environmental objectives for each river basin district within a time frame and, ultimately, to reach a good environmental status, which will foster conservation and sustainable use of biological and habitat diversity.

Another strategic document that guarantees implementation of the EU Water Framework Directive principles is the Procedure for State Water Monitoring approved by the Resolution № 758 (dated September 19, 2018) of the Cabinet of Ministers of Ukraine.

Geoportal “Water resources of Ukraine” was launched; it is an open platform that displays modern attributes of nine river basin districts (river sub-basins, water management units, ecoregions, and state water cadastre subdivision).

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 2, NT 3, NT 5, NT 6, ABT 4, ABT 7, ABT 8

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment is based on the analysis of laws, regulations, and reporting documents. This measure signifies an important starting point to the process of attaining a good ecological status of waters; however, the required practical steps to protect and conserve the biodiversity of aquatic ecosystems are yet to be taken.

Laws were adopted to support the implementation of the EU Water Framework Directive. Subsequently, a number of orders of the Ministry of Ecology were issued for their implementation. The Procedure for State Water Monitoring and the Procedure for Developing a River Basin Management Plan were approved.

Relevant websites, web links and files

- The Law of Ukraine on Adopting the National Target Program for Developing Water Management and Environmental Improvement of the Dnipro River Basin for the Period up to 2021 (№ 4836-VI, 24.05.2012) – <http://zakon.rada.gov.ua/laws/show/4836-17>
- National report on the state of the environment in Ukraine in 2015. – Kyiv: Ministry of Ecology and Natural Resources of Ukraine, 2017 – 308 p. – <https://menr.gov.ua/news/31768.html>
- Sustainable management of water resources – <https://menr.gov.ua/timeline/Ohorona-vod.html>
- The Law of Ukraine on Amendments to Certain Legislative Acts of Ukraine Regarding Implementation of Integrated Approaches in Water Resources Management Based on the Basin Principle (№ 1641-VIII, 04.10.2016) – <http://zakon.rada.gov.ua/laws/1641-19>
- Order of the Ministry of Ecology and Natural Resources on ratification of the Typical regulation of basin councils (№ 23, 26.01.2017) – <http://zakon.rada.gov.ua/laws/show/z0208-17>
- Order of the Ministry of Ecology and Natural Resources on the adoption of the Order of the water management balances development (№ 26, 26.01.2017) – <http://zakon.rada.gov.ua/laws/show/z0232-17>
- Order of the Ministry of Ecology and Natural Resources on the adoption of borders of river basins areas, subbasins and water-resource regions (№ 103, 03.03.2017) – <http://zakon.rada.gov.ua/laws/show/z0421-17>
- Resolution of the Cabinet of Ministers of Ukraine on the approval of the Order of Elaboration of Management Plan for a River Basin (№ 336, 18.05.2017) – <http://zakon.rada.gov.ua/laws/show/336-2017-rr>
- State Water Monitoring Procedures (approved by the resolution of the Cabinet of Ministers of Ukraine № 758, 19.09.2018) – <http://zakon.rada.gov.ua/laws/show/758-2018-rr>
- Monitoring and environment assessment of water resources of Ukraine. State Agency of Water Resources of Ukraine – <https://bit.ly/34741cr>
- Geoportal “Water resources of Ukraine” – <http://map.davr.gov.ua:44481>

Other relevant information

The National Target Program for Developing Water Management and Environmental Rehabilitation of the Dnipro River Basin for the Period up to 2021 is an essential program for implementation of the adopted legislation; it stipulates the reform objectives, among them aiming to restore the value of agriculturally improved land in securing the country, to optimize water consumption, prevent and eliminate the ramifications of the detrimental effects of water. However, there are no biological indicators among the objectives, although proper implementation of the program will indirectly contribute to biodiversity conservation.

In order to prevent degradation of small river ecosystems, Article 80 of the Water Code prohibits the following: (1) alteration of the terrain of the river basin; (2) destruction of ephemeral river beds, streams and water-courses; (3) straightening the river beds and deepening the river bottom below the natural level or obstructing them without installing drains, by-passes, or aqueducts; (4) reducing the natural vegetation and forest cover of the river basin; (5) ploughing floodplain lands and treating them with chemicals; (6) carrying out drainage reclamation of wetlands and marshes in the upper reaches of rivers; (7) allocating floodplain land for any construction (except for hydrotechnical, hydrometric and linear structures), as well as gardening and

horticulture; (8) performing other work that may or does adversely affect the amount and quality of the river waters.

The treaty between the Cabinet of Ministers of Ukraine and the Government of the Republic of Moldova on Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin (2017) encompasses, inter alia, biodiversity conservation. In the context of the agreement, the Commission on Sustainable Use and Protection of the Dniester River Basin and the Working Group on Ecosystems and Biodiversity were launched.

Relevant websites, web links and files

- Report of the Ministry of Ecology on the process and results of implementation of the state (directed) programs, 2017. Part 1. The State Directed Program of Water Economy Development and Environmental Health of the Dnieper River until 2021. – <https://menr.gov.ua/news/32714.html>

Obstacles and scientific and technical needs related to the measure taken

Only partial funding is provided for implementation of the measures listed in the NSB; research opportunities for the creation of the river basin management plans are limited.

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

7. Identification of ancient and primeval forests of the Carpathians

A comprehensive measure that resulted in:

- introducing amendments to the legislation through the adoption of the law on virgin forests – “On Amending Certain Laws of Ukraine on the Protection of Primeval Forests in Accordance with the Framework Convention on the Protection and Sustainable Development of the Carpathians” (2017),
- approval of the “Methodology for identifying forest areas as primeval forests, quasi-primeval forests, and natural forests” (hereinafter – Methodology for identifying virgin forests) (2018) by the Ministry of Ecology and Natural Resources, and
- creation of the map “Ancient and primeval forests of the Ukrainian Carpathians”.

The effort was initiated and executed by a number of NGOs. As a consequence of this step, 93,777 hectares of virgin and old forests or quasi-virgin forests were identified as of January 1, 2018 (unpublished data, courtesy of the WWF Ukraine); these forests were barely or not at all exposed to anthropogenic influence. The legislative framework for their further protection was established.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 5, NT 7, ABT 5

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

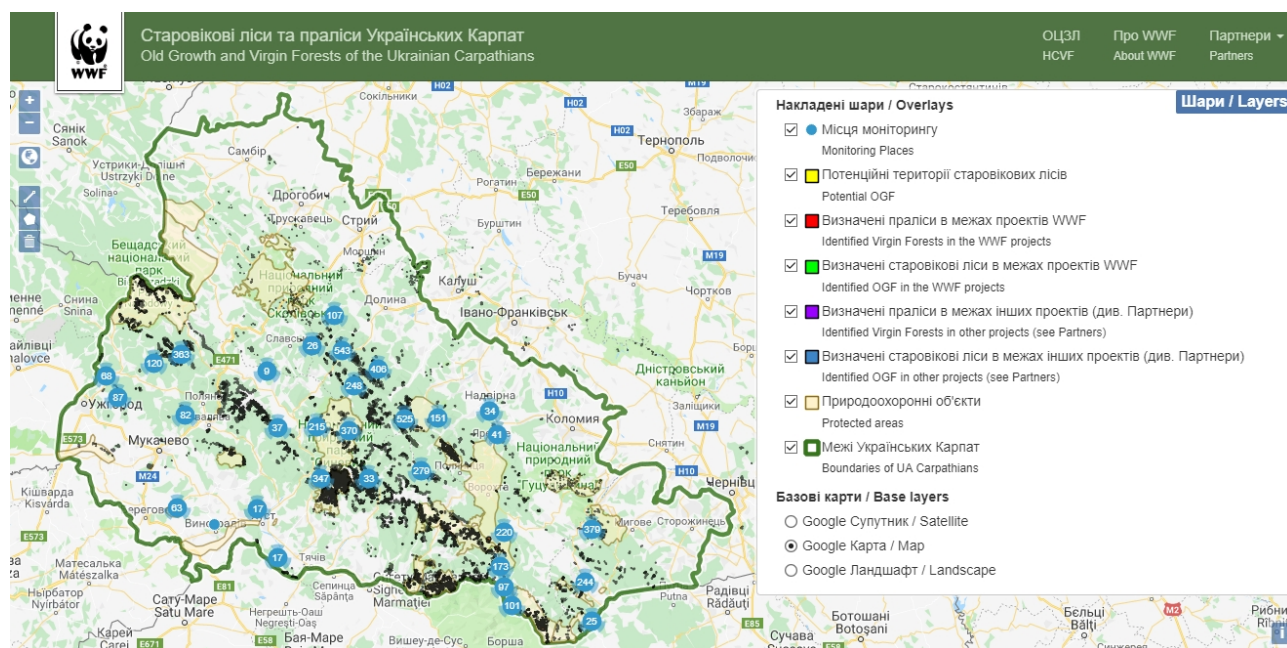
Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

A number of laws were amended. In particular, the concepts of primeval forests, quasi-primeval forests and natural forests were introduced into the Forest Code, and all types of logging were prohibited. Relevant fines were introduced in the Code of Ukraine on Administrative Offenses. A new type of natural monuments was

described in the Law of Ukraine “On the Nature Reserve Fund of Ukraine”: virgin forest monuments with management regime implying total logging ban. In early 2018, an agreement concerning a moratorium on logging of virgin forests was reached, aiming to prevent deforestation before the forests obtain the official status according to the approved “Methodology for identifying virgin forests”. However, even prior to the moratorium (during 2014–2017), about 10,000 hectares of plots with characteristics of virgin and old forests were cut down; and after the moratorium was imposed, the permission to cut down 85 plots of a total area of 130 hectares was granted, at total of 150 cleared plots covering 500 hectares (including the plots where permissions were obtained before the moratorium was put into effect). The assessment is based on the data from the dedicated survey conducted by the WWF-Ukraine.

Relevant websites, web links and files

- The Law of Ukraine on Amendment to Several Legal Acts of Ukraine on Protection of Primeval Forests according to The Framework Convention on the Protection and Sustainable Development of the Carpathians (№ 2063-VIII, 23.05.2017,) – <http://zakon.rada.gov.ua/laws/show/2063-19>
- Order of the Ministry of Ecology and Natural Resources on approval of the Methodology for determining the belonging of forest territories to primeval forests, quasi-virgin forests and natural forests (№ 161, 18.05.2018) – <http://zakon.rada.gov.ua/laws/z0707-18>
- The State Forest Resources Agency of Ukraine stopped clearcuttings in Carpathian virgin forests – <https://bit.ly/2zkCQwv>
- Map “Old Growth and Virgin forests of the Ukrainian Carpathians” – <http://gis-wwf.com.ua>



Web-page layout “Ancient and primeval forests of the Ukrainian Carpathians” <http://gis-wwf.com.ua/>

Other relevant information

This measure is one of the essential ones to achieve ABT 5, as it identifies the key forest areas where destruction, fragmentation, and degradation should be halted, and it provides a mechanism for this. The consolidation of forest status at the legislative level forms the basis for expanding the work on searching for such forests beyond the Carpathian region.

Obstacles and scientific and technical needs related to the measure taken

There is a need to enhance the legal and practical system for the protection of virgin forests. Previously, forest management disregarded the virgin forests; therefore, some of them were classified as exploitation forests, providing legal grounds for clearcut logging. Meanwhile, the moratorium on logging of virgin forests

has a merely recommendatory nature. The situation is further complicated by the fact that it may take a long time for virgin forests to obtain the official status; therefore, it is crucial to simplify the procedure of granting official status to already identified areas. There is also a need for expanding the work of discovering forests that persisted in the natural state in the Polissya region.

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

8. Improvement of sanitary regulations in the forests of Ukraine and implementation of FSC forest certification

Regulatory and practical measure.

The latest edition of the Forest Sanitary Regulations of Ukraine (2016) prohibits clearcut logging for sanitary purposes within all territories of the NRF, except for the transition zone of the national parks and the anthropogenic habitats of the biosphere reserves. Moreover, cutting of hollow, deadwood and damaged trees is forbidden in nature reserves and other NRF territories with comparable protection status. Relevant norms aim to enhance the conservation regime within the forest areas of the NRF.

Forest certification shows substantial progress, with many forests being certified according to the international standards of the Forest Stewardship Council (FSC) that ensures sustainable forest management.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes
NT 5, NT 6, ABT 4, ABT 5, ABT 7, ABT 11

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

Prior to the adoption of the revised version of the Forest Sanitary Regulations of Ukraine, large-scale clearcut logging for sanitary and other reasons within the boundaries of the NRF sites, particularly in forest sanctuaries (*zakaznyky*), was a common practice. Subsequently, the NRF territories were losing their conservation value. The introduction of the new rules brought this practice to an end. Nonetheless, the experts point out that banning clearcut logging provokes increasing selective logging and the ensuing degradation of retained forest patches.

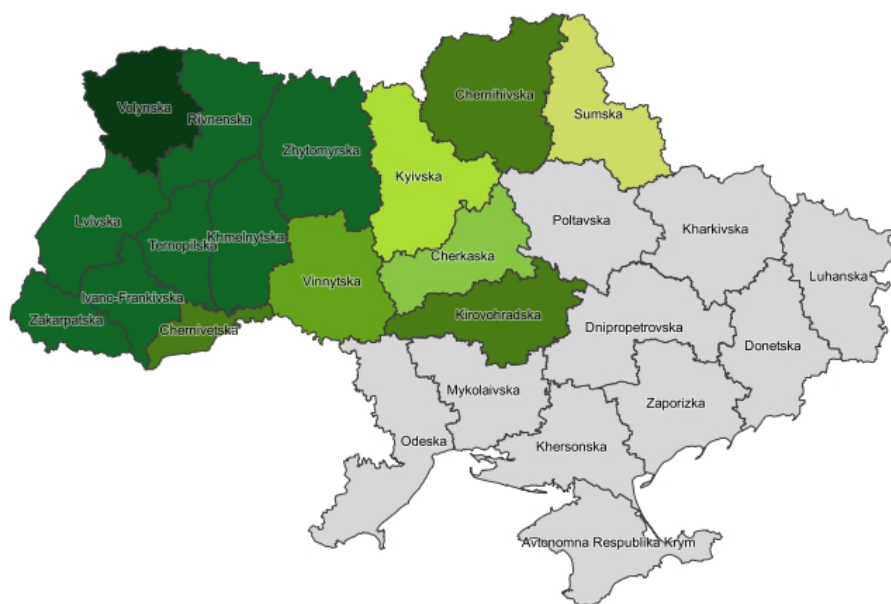
The measure is effective in terms of expanding the area of certified forests: in 2013, approx. 1.5 million hectares; in 2018, 4.02 million hectares (as of November 2018, 39% of the total forest area of Ukraine). Currently, Ukraine is the fifth in Europe in certified forest area (#10 back in 2013).

Relevant websites, web links and files

- Resolution of the Cabinet of Ministers of Ukraine on approval of the Sanitary Rules in forests of Ukraine (№ 555, 27.07.1995, amended on 11.11.2016) – <http://zakon.rada.gov.ua/laws/show/555-95-п>
- A quarter of protected areas in the Kyiv Oblast fell under total clearcuttings (published on 8.05.2015) – <https://bit.ly/2LbMVBh>
- Savran protected area: potato fields instead of ancient oak forests (published on 5.04.2018) – <https://bit.ly/2zo5VXR>
- How to stop extermination of protected forests of Ukraine? (published on 19.04.2018) – <https://bit.ly/343dOjy>

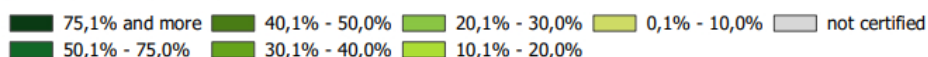
- Forest Stewardship Council, FSC – <https://ua.fsc.org/ua-ua>

FSC-CERTIFIED FORESTS IN UKRAINE
(4,01 Mio. ha or 39% of the forest area of the country)



Region (oblast)	Forest area, ha	FM/CoC
Vynnytska	132 581,4	6
Volynska	586 389,0	2
Zhytomyrska	607 694,0	18
Zakarpatska	440 407,8	15
Ivano-Frankivska	338 274,7	10
Kyivska	91 578,1	4
Kirovohradska	75 224,9	4
Lvivska	430 431,0	1
Rivnenska	427 315,5	11
Sumska	21 285,3	1
Temopilska	118 350,3	4
Khmelnyska	185 957,3	9
Cherkaska	99 401,2	3
Chemivetska	108 984,0	4
Chemihivska	341 436,8	10
Total	4 005 311,3	102

Share of FSC-certified forest area



Source: <https://ua.fsc.org/preview.2018.a-535.pdf>

Other relevant information

Advancement of the forest sanitary regulations is vital for achieving ABT 5, as it endorses preservation of forest habitats within the NRF.

Forest certification is essential to conserve biodiversity. On the one hand, expanding the area covered by FSC certified forest enterprises provides the opportunity to implement additional conservation measures, while, on the other, provides a tool for cooperation with certified forest users in terms of biodiversity conservation. In compliance with the certification standards, forest enterprises are open to proposals from the environmental community.

Obstacles and scientific and technical needs related to the measure taken

The provisions of the new Forest Sanitary Regulations of Ukraine complicate the management of different categories of forest within the NRF territories, particularly within the boundaries of human settlements or artificial plantations. In addition, clearcut logging restriction can instigate an expansion in the total area of selective logging.

Violations of environmental legislation and inefficient biodiversity management remain, namely: deforestation in areas where logging is prohibited; forest-related activities do not always consider rare species; etc.

The challenges with implementing the FSC certification mechanisms are weak auditor and public supervision over compliance with the certification norms and, with regards to biodiversity conservation, a lack of involvement of biologists in field studies specified in the forest certification procedure.

Relevant websites, web links and files

- March 21, 2018. Press conference: How Ukraine implements international standards of forestry, <https://www.ukrinform.ua/rubric-presshall/2423122-ak-ukraina-vprovadzue-miznarodni-standarti-vedenna-lisovogo-gospodarstva.html>

- Why forest certification does not work properly in Ukraine? – <http://epl.org.ua/en/about-us-posts/chomu-v-ukrayini-lisova-sertyfikatsiya-ne-pratsyuye-na-povnu>

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

9. Fish stocks assessment and improvement of fisheries organization

A set of regulatory, scientific and practical measures.

Regulation of fisheries is administered according to the Law “On Fishery, Commercial Fishing, and Protection of Aquatic Bioresources”. Regulation of commercial fisheries involves the implementation of the requirements of certain basic and periodic regulations that set the permissible fishing limits for a particular year. Moreover, in 2015, the Cabinet of Ministers of Ukraine streamlined the system of granting the right to use aquatic bioresources. A differentiated system for setting the allowable catch limits has been in place since 2016.

Improvement of the fisheries organization is conducted using a few instruments of permanent or periodic action which regulate the fisheries' qualitative thresholds.

The “Rules of Fisheries” (Fisheries Regulations) identify the main criteria for the acceptable fishing gears, the allowable size of fish for catching, the seasons and areas for closure. These rules are adjusted under the annual Fisheries Regime. In particular, recent years have seen the prohibition to use the fine-mesh fishing gears that capture the juveniles of the most vulnerable species, the increase in allowable fish size to catch, and additional areas where fishing is banned. Fines for illegal catch of aquatic bioresources were increased, and scientific principles for assessment of damage as a criterion for identifying criminal liability were partially introduced into law enforcement practice.

In 2015, new supervising authorities, fish protection patrols, were introduced. These entities received new equipment and an additional budget for personnel.

Under the WWF Danube-Carpathian Program (“WWF-DCP”) and the LIFE project, protection of sturgeons in the Lower Danube region by preventing and combating illegal fishing and trade in sturgeon products. In July 2013, the “Sturgeon 2020” program for Danube sturgeon protection and rehabilitation was developed; it provides for the involvement of all countries interested in the fish protection measures.

Ukrainian research institutes contribute to a number of international commissions:

- The General Fisheries Commission for the Mediterranean (GFCM), with Ukraine being an associate member since 2015, regulates multinational fisheries in the Black Sea; an international working group and a special expert unit for stock assessment were established and met on an annual basis; additional expert meetings were held on specific issues;
- Ukrainian-Russian Interstate Commission on Fisheries in the Sea of Azov; since 2014, its activity subsided due to the conflict following the illegal occupation of the Crimean peninsula by Russia;
- The expert group at the Scientific, Technical and Economic Committee for Fisheries (STECF), along with scientists of the Black Sea countries.

Furthermore, regulation of fisheries in the estuaries of the large rivers (Danube and Dniester) was improved, following the decisions of the international working groups upon the recommendations of the “Regional Strategy for the Conservation and Sustainable Management of Sturgeon Populations of the N-W Black Sea and Lower Danube River in accordance with CITES”.

The decisions by these commissions form the background for fisheries regulations.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 5, NT 6, NT 7, ABT 4, ABT 6, ABT 12

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment is based on the analysis of reports, recommendations, and meeting documents of working groups and commissions.

Fish stock assessment criteria for inland water bodies: data on structural indicators of commercial fishing in the Dnipro reservoirs during 2015–2017. Industrial statistical records data for a total of 22 fish species. The percentage of species of low and medium abundance in landings increased from 8.9% to 15.6%; the catches for these categories increased 2.9-fold (I. Buzevich, unpublished data).

Fish stock assessment criteria for marine areas: data on the long-term dynamics of annual landings by species. According to the state statistics, the catches of most species of fish and shellfish decreased by 5–20 times in the Black Sea water area of Ukraine. The increase in landings was reported primarily for the new target species, such as shrimps and the invasive rapana sea snail.

There are positive outcomes of organizing a new environmental protection authority, fish protection patrols. Furthermore, community fishing associations became increasingly active in recent years.

Relevant websites, web links and files

- The Law of Ukraine on Fishery, Commercial Fishing and Protection of Aquatic Bioresources (№ 3677-VI, 08.07.2011) – <http://zakon.rada.gov.ua/laws/show/3677-17>
- Procedure for the special use of aquatic bioresources in internal fish-farming water bodies (their parts), inland sea waters, territorial sea, exclusive (marine) economic zone and on the continental shelf of Ukraine (approved by the resolution of the Cabinet of Ministers of Ukraine, № 992, 25.11.2015) – <http://zakon.rada.gov.ua/laws/992-2015-п>
- Now the fish protection patrol is operating in 17 regions of Ukraine. – State Fisheries Agency of Ukraine, 31.05.2017. – <https://bit.ly/2ZvmifQ>
- FAO-GFCM – General Fisheries Commission for the Mediterranean. Interactive dashboards of capture production statistics – <http://www.fao.org/gfcm/data/capture-production>
- The order of the State Committee of Fisheries on approval of Rules of fisheries for fishing objects of Ukraine (№ 33, 18.03.1999) – <http://zakon.rada.gov.ua/laws/show/z0326-99>
- The order of the Ministry of Agropolicy on approval of fishing regimes in 2018 (№ 710, 29.12.2017) – <http://zakon.rada.gov.ua/laws/show/z0047-18>
- Resolution of the Cabinet of Ministers of Ukraine on approval of fines for calculating the size of compensation of harm due to illegal takes or damage of valuable species of aquatic biological resources (№ 1209, 21.11.2011) – <http://zakon.rada.gov.ua/laws/show/1209-2011-п>
- Hrytsiniak, I.I., Chuklin, A.V., Buzevich, I. Yu. Ichthyological aspects of identification of significant harm for fisheries // Fishery Science of Ukraine. – 2013. – 2013. – 3. – P. 7–14. – http://nbuv.gov.ua/UJRN/rmu_2013_3_3
- General Fisheries Commission for the Mediterranean. Report of the Thirty-Ninth Session. Milan, Italy, 25–29 May 2015 – <http://www.fao.org/3/a-i5346e.pdf>
- GFCM High-level conference towards enhanced cooperation on Black Sea fisheries and aquaculture – <http://www.fao.org/gfcm/publications/proceedings/52/en/>
- GFCM. First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and Black Sea. 27–30 November 2013, Saint Julian's, Malta. –

<http://www.fao.org/gfcm/publications/proceedings/39>

- The members of the Russian delegation of the Commission on Fisheries in the Azov Sea are banned for entering Ukraine. – 26.11.2018. – <https://bit.ly/2zl7AgS>
- STECF – Scientific, Technical and Economic Committee for Fisheries – <https://stecf.jrc.ec.europa.eu/index.html>
- Stock assessments in the Black Sea (STECF-17-14). European Union, 2017 – <https://bit.ly/2ZyH3eu>
- Danube – Carpathian WWF project – <https://bit.ly/30B6F84>
- Project “LIFE for Danube Sturgeons” – <https://danube-sturgeons.org/the-project>
- Sturgeon 2020. A program for the protection and rehabilitation of Danube sturgeons – <https://bit.ly/2ZsRr7x>

Other relevant information

To preserve the ichthyofauna of small and medium-sized rivers, commercial inland fisheries are active exclusively in the Dnipro reservoirs and the Dnipro River. Commercial landings in the Dnipro reservoirs increased from 8.9 to 13.5 thousand tons during 2013–2017. Primarily, the increase was attributable to the Prussian carp, roach, bream, and sander. The commercially valuable fishes accounted for 22.4% of the overall catch increase. The population structure indices of the main harvested fish species (natural mortality 0.17–0.29 and harvest mortality 0.22–0.31) were at the level typical for stable populations. When compared to the EU countries, commercial fishing in Ukraine is the most regulated. At the same time, a discrepancy is found between the observed recruitment of the reproductive core of populations and the abundance of hatchlings. The primary reason is the increased harvesting of younger age groups (I. Yu. Buzevich, unpublished data).

The GFCM Working Group assessed the population status of the European anchovy, sprat, horse mackerel, turbot, merling, Atlantic bonito, and rapana. Also, evaluation of zooplankton as a trophic base for fish was proposed. The European Commission supported the collection and synthesis of research data and drafting recommendations for fisheries in the Black Sea. GFCM’s work in the Black Sea is very active. This enhanced stock assessments and the elaboration of measures on fisheries management. For the first time, the scientific data on the status of commercially exploited fish populations and some invertebrates in the Black Sea were consolidated.

As a result of stakeholder cooperation in 2017, gill nets with a thread thickness of more than 1.2 mm for both internal and external sheets were banned, as adult sturgeons were usually caught there during the upstream spawning migration. The maximum height of the floating nets was limited. In 2018, non-specialized fisheries in the Danube avandelta using nets with a mesh size larger than 45 mm were prohibited. These changes, combined with educational activities for the local communities and the introduction of the video surveillance along a part of the Danube River, resulted in partial improvement in fish protection.

During 2017, a draft Law of Ukraine “On Ensuring Traceability of the Origin of Aquatic Bioresources” was developed; it will support the introduction of a control mechanism regarding the origin of aquatic bioresources and products thereof. This will ensure sustainable management of aquatic bioresources and will help to safeguard the interests of fishery entities operating under Ukrainian legislation.

Relevant websites, web links and files

- Kovaliv, Ya. “Fish” reforms, view from inside: what is the result of establishing the first fish protection patrol // Ekonomichna Pravda. – 17.08.2016. – <https://bit.ly/2NzM1kX>
- EU intervention in inland fisheries. Study published 14-12-2011 – <https://bit.ly/2ZnDHvR>
- GFCM. Seventh meeting of the Working Group on the Black Sea. July, 2018. – <http://www.fao.org/gfcm/reports/technical-meetings/detail/en/c/1156493>
- Life for Danube sturgeons: figures and achievements after the first year of work. – 26.11.2018. – <https://ua.danube-sturgeons.org/one-year-in-ukraine/>

- Sturgeons. Man can exterminate fishes which survived the dinosaur age... – <https://bit.ly/2KYW0yB>
- Project of the Law of Ukraine dated as 10.09.2018 “On Organization of Tracing The Origin of Aquatic Biological Resources and Products Made of Them” – <https://bit.ly/2MFHc9U>

Obstacles and scientific and technical needs related to the measure taken

The root cause for partial effectiveness of the measure is tough economic times in the country. The level of protection of aquatic bioresources remains unsatisfactory for the sake of the high volume of Illegal, Unreported and Unregulated (IUU) fishing for the turbot, sander, crayfish, and shrimp. The experts note that the de facto amount of catch may exceed the reported figures severalfold. The high level of poaching is due to the poverty of the population and fishing entities, as well as the lack of alternative livelihoods in certain areas.

The issue lies in catching valuable fish species with harvesting intensity exceeding the optimal values. A possible solution may be to encourage catching widespread species which population status is good (e. g., tyulka in the Dnipro reservoirs, Prussian carp, rapana), without setting limits.

Improving the “Rules of Fisheries” (with scientific justification) is essential, along with strengthening effective control and regulation of fisheries. Moreover, experts estimate that traditional resource users should obtain long-term fishing rights, the incentives for local communities should be introduced, and the regional development of coastal areas should be implemented.

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

10. *Ex situ* breeding of native fish species

A financial measure. It is a part of sustainable aquaculture management, and it includes spawning of native fish species in aquaculture.

Reintroduction of viable populations of native fish species for recruitment of capacity of their small populations is among the priority areas in aquaculture (the Law of Ukraine “On Aquaculture”). Accordingly, in line with the national program “Breeding of aquatic bioresources in inland reservoirs and the Azov-Black Sea basin”, the main directions were identified for *ex situ* breeding of populations, the status of which can be defined as threatened. Furthermore, the state fish-breeding farms were directed to the production of aboriginal fish seed material.

Before 2013, the share of public funding for the *ex situ* breeding of native species was steadily increasing; during the budget allocation for fisheries, priority was given to aboriginal species. However, due to the limited market of native fish spawn in Ukraine, the state fish-breeding farms got a key role in the implementation of this measure. During 2000–2017, these entities released more than 66 million specimens of juvenile fish of various species into the reservoirs of Ukraine. Private farms, which, *inter alia*, breed native species (primarily, the brown trout) for compensatory restocking of rivers in the Carpathian region, also play an important role.

In Ukraine, spawn production technologies are being successfully adapted, hence, if funding is available, the fish-breeding enterprises are capable to meet the needs for breeding at least the rare species at the level comparable with natural recruitment.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 5, NT 6, ABT 4, ABT 7

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

Assessment criteria: *ex situ* breeding statistics. Sources: official statistics of the State Fisheries Agency of Ukraine, information provided in online publications.

Relevant websites, web links and files

- The Law of Ukraine on Aquaculture (№ 5293-VI, 18.09.2012) – <http://zakon.rada.gov.ua/laws/main/5293-17>
- Yakovleva T. V. , Khandogivska A. I., Mruk A. I., Buzevitch I. Ju. Key tendencies of works on artificial reproduction of valuable species of fish in the internal water reservoirs of Ukraine // Issues of Belarus Fish Industry. – 2014. – 30. – P. 289–300. – http://www.belniirh.by/attachments/30_2014.pdf
- Yakovleva T. Artificial reproduction of ichthyofauna of Dnieper reservoirs: current state, problems and perspectives // Fishery Science of Ukraine. – 2013. – 1. – P. 5–12. – http://nbuv.gov.ua/UJRN/rnu_2013_1_3
- State Fisheries Agency of Ukraine: During the latest eight years state fish farms released more than 66 million specimens of fish into Ukrainian water bodies. – http://darg.gov.ua/_protjagom_ostannih_vosjmi_0_0_0_6134_1.html
- Energy company group “RENER” did the annual large-scale action on fish release to the rivers of the Transcarpathian region and the Tiachiv area. - http://tyachiv.com.ua/NewsOpen/id_news_406907

Other relevant information

According to the analysis of ‘1A-fish’ form reporting, herbivorous fish and the carp are the main targets of *ex situ* breeding. Predominantly, this is explained by the economic aspects: these species reach the greatest gross output of fish per investment.

Mariculture of Ukraine exists only as farming of the native invertebrate species, in particular, mussels. Reintroduction of bivalve mollusc populations into the Black Sea is critically important after the rapana invasion, and it is believed that sustainable mariculture will contribute to the restoration of natural populations and partially lessen harvesting the marine resources. However, currently there are very few mussel and oyster farms which impact on the natural ecosystems and the coastal economy is minor.

Relevant websites, web links and files

- Patent № 92569 Ukraine, IPC A01K 61/00. Method of forming a repair-breeding herd of the brown trout in industrial conditions. – № 2014 02245; applied 05.03.2014; published 26.08.2014, Bul. № 16. – <http://bit.ly/2HtP36r>
- A method of cultivating young European grayling: Patent № 115275 Ukraine / № u 201509783; applied 25.10.2016; published 10.04.2017, Bul. № 117. – <http://bit.ly/2NAFxT2>

Obstacles and scientific and technical needs related to the measure taken

The fundamental constraint for *ex situ* breeding of native species is the lack of funding. The issue of providing compensation for restocking expenditures remains unsettled: the rates for the year 2007 are currently applied, which are utterly inconsistent with the current costs.

Mariculture development is hindered by a lack of tradition, the need for start-up investments, and the complexity of regulatory procedures. Measures are needed to engage the coastal communities, traditionally involved in fishing, in mariculture.

Relevant websites, web links and files

- Order of the Ministry of Agrarian Policy and Food of Ukraine on approval of funding on measures on restoration of aquatic living resources in inner water bodies and the Azov and the Black Sea basin (06.07.2007, № 473) – <http://zakon.rada.gov.ua/laws/show/z0937-07>

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

11. Establishing protection and sustainable use of agricultural land

A set of legal, regulatory and practical measures. A few paragraphs on protection and sustainable use of agricultural land are included in a number of legislative acts adopted in the reporting period.

The NSB includes an objective pertaining to sustainable agriculture management and dissemination of relevant information (NT 1) and an objective on protecting land and soil, *inter alia*, through cutting down the area of arable land by an average of 5–10% by 2020; removal of slopes with more than 3° steepness and lands of water protection zones from the list of arable lands, conservation of degraded, lowly productive and technogenically contaminated agricultural lands with subsequent afforestation of sites in the forest and forest-steppe zones and restoration of land in the steppe zone (NT 2); ensuring full compliance with environmental requirements during land allocation for industrial, construction, energy, transport and communication facilities and in resolution of issues related to removal (acquisition), provision, change of land plot purpose by 2015; development and implementation of a agrolandscape management system using agrosilvicultural methods along the lines of sustainable development by 2020.

In 2014, the Cabinet of Ministers of Ukraine approved the Concept of combating land degradation and desertification, which aims to increase the implementation success of the state policy for combating land degradation and desertification, define priority objectives, strengthen institutional capacity, improve coordination of the relevant authorities in this domain, and ensure compliance of Ukraine in fulfillment of its international obligations under the UNCCD.

The “National Action Plan to Combat Land Degradation and Desertification” (2016) describes the following measures: creation and restoration of hayfields and pastures in line with science-based indicators and considering the regional natural and climatic features; ordering of arable land via removing slopes, lands of water protection zones, lands with erosion hazard and other land unsuitable for ploughing; acceleration of conservation efforts on degraded, technogenically contaminated and poorly productive lands, reclamation of disturbed land; establishment of regional schemes and programs for ecological network development, along with pilot land management projects to regulate the land ownership and land use matters for the territories and sites of the ecological network.

“The Strategy of Improving the Management Mechanism for State Agriculture Land Use, Protection and Disposal” (2017) stipulates conservation of degraded, lowly productive and technogenically contaminated land and reclamation of disturbed land; termination of economic use of environmentally unsafe and economically inefficient land plots and their restoration or afforestation.

These acts are in line with other applicable legislation of Ukraine, particularly the Law of Ukraine “On Land Management” (2003), which specifies exclusion of degraded, poorly productive and technogenically contaminated agricultural lands that are subject to conservation from among the lands that are subject to distribution, and the Law of Ukraine “On State Control over Use and Protection of Land” (2003), which determines the possibility of conservation of degraded lands.

The national cadastre system was developed with the support of the World Bank and became publicly available in the format of a “Public cadastral map” since January 1, 2013, on the official website of the State Land Cadastre. The map contains information on the form of ownership of a particular land plot, its purpose, and a cadastral number. It also includes information on soil and administrative division. The work was carried out in compliance with the Law of Ukraine “On State Land Cadastre” (2011). This law also partially corresponds to ABT 7, particularly in terms of organizing and preparing maps on sustainable land use.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 1, NT 2, ABT 1, ABT 7, ABT 11

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment is based on the analysis of information resources, reports, and available implementation results.

The cultivation intensity of Ukrainian lands is among the highest in the world. Nearly 71% of the territory of Ukraine is agricultural land; arable land constitutes 54% of Ukraine's territory. The need to reduce these figures has been repeatedly mentioned and indicated in the action plans. Relevant measures are implemented in various regions of Ukraine, but their scope remains quite limited.

The creation of the Cadastral map is a crucial step for enabling easy access to spatial and land cadastre data. Currently, the database covers the majority of Ukraine's territory.

Relevant websites, web links and files

- The web-site of the Ministry of Ecology. Protection of lands – <https://menr.gov.ua/timeline/Ohorona-zemel.html>
- Order of the Cabinet of Ministers of Ukraine on approval of the Concept of combating land degradation and desertification (№ 1024, 22.10.2014) – <https://zakon.rada.gov.ua/laws/show/1024-2014-p>
- National Action Plan to Combat Land Degradation and Desertification (approved by the order of the Cabinet of Ministers of Ukraine, № 271-p, 30.03.2016) – <https://zakon.rada.gov.ua/laws/show/271-2016-p>
- Public Cadastre Map – <http://map.land.gov.ua/kadastrova-karta>
- The Law of Ukraine on the State Land Cadastre (07.07.2011, № 3613-VI; amended 23.03.2017, № 1983-VIII) – <https://zakon.rada.gov.ua/laws/show/3613-17>
- Review of the implementation state of the National Action Plan for combating land degradation and desertification. – <https://menr.gov.ua/news/32333.html>
- National report on the state of the environment in Ukraine in 2015. – Kyiv: Ministry of Ecology and Natural Resources of Ukraine, 2017 – 308 p. – <https://menr.gov.ua/news/31768.html>

Other relevant information

In 2017, the Cabinet of Ministers of Ukraine established the Coordination Council for Combating Land Degradation and Desertification (Resolution № 20, January 18, 2017). The Council endorsed the proposals (as of May 4, 2018) to set a voluntary national target to achieve the land degradation neutrality in Ukraine: by 2020, achieve a stable level of organic carbon (humus) in agricultural soils (at least, as high as the baseline of 2010 (on average 3.14% in Ukraine; baselines by region: Polissya, 2.24%; Forest-Steppe, 3.19%; Steppe, 3.40%)); by 2030, reach an increase at least by 0.1%.

To support the implementation of relevant measures and objectives, implementation of the GEF/FAO project “Integrated Management of Natural Resources in Degraded Landscapes in the Forest-Steppe and Steppe Zones of Ukraine” (2018) was launched.

Relevant websites, web links and files

- Resolution of the Cabinet of Ministers of Ukraine on establishing the Coordinating council on combating land degradation and desertification (№ 20, 18.01.2017) – <https://zakon.rada.gov.ua/laws/show/20-2017-rr>
- Meeting minutes of the Coordinating Council on combating land degradation and desertification, including recommendations, proposals and tasks for achieving the neutral level of land degradation – <https://menr.gov.ua/news/32479.html>.

Obstacles and scientific and technical needs related to the measure taken

Obstacles to the implementation of the measure are lack of law enforcement, incoherent actions of different institutions, lack of proper funding, lack of harmonization in current legislation. In particular, the procedure for acquisition and conservation of arable land is rather complicated and optional.

Relevant websites, web links and files

- Review of the implementation state of the National Action Plan for combating land degradation and desertification. – <https://menr.gov.ua/news/32333.html>
- National report on the state of the environment in Ukraine in 2015. – Kyiv: Ministry of Ecology and Natural Resources of Ukraine, 2017 – 308 p. – <https://menr.gov.ua/news/31768.html>
- Aspects of change of land use category for agricultural lands – www.svdevelopment.com/ru/info_guide/polinfo/glossary/21/139
- Rakoyid O. The state of reflection in the program documents of Ukraine and the status of implementation of the provisions of the UN Convention to Combat Desertification. Analytical report. – 2017. - 100 p. – http://www.ua.undp.org/content/dam/ukraine/docs/EE/Rio/Desertification_Rakoyid_Web.pdf

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

12. Reduction of environmental pollution

A set of regulatory, financial, policy, legal and practical measures.

The NSB includes three targets pertaining to pollution: NT 2, NT 3, and NT 7. The NAP 2011–2015 contained several measures that corresponded to these targets.

The Action Plan on implementation of the Ukraine-EU Association Agreement stipulates transposition of the requirements of the Water Framework Directive (2000/60/EC), the Drinking Water Directive (98/83/EC), Urban Waste Water Treatment Directive (91/271/EEC), and the Nitrates Directive (Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources) into the national legislation of Ukraine.

The “Annual National Program under the auspices of the Ukraine-NATO Commission” for the years of 2015, 2016 and 2017 has a target “Ensuring environmental safety” (paragraph 1.6.1 in 2015–2016 and 1.4.1 in 2017).

Decree № 408 of the Cabinet of Ministers of Ukraine (dated June 12, 2013) introduced amendments to the Technical Regulations on Detergents regarding the limitation of the content of phosphates and other phosphorus compounds. The following documents in support of the Nitrates Directive implementation were prepared: Methodology for identification of nitrate vulnerable zones, a preliminary list of the nitrate sensitive areas, and the analysis of the Code of Good Agricultural Practices.

In 2013, Ukraine cancelled the state registration of the zinc phosphide pesticide and all its preparation forms.

The National Strategy for Waste Management in Ukraine until 2030 was developed and approved. It specifies the waste management measures. The document is currently under the SEA. The National Emissions Reduction Plan for Large Combustion Plants for the period of 2018–2023 was approved.

Other implementations include online registration and the approved procedure for submitting waste declarations on the website of the Ministry of Ecology (as of November 2018, more than 15,000 online declarations were submitted). The ECOMAPA Interactive Map (developed by the Ministry of Ecology) has been in place since 2016, providing citizens with an opportunity to submit georeferenced submissions on illegal dumpsites, supported with photos. As of November 15, 2018, citizens filed 3,788 applications; 810 (21%) requests were satisfied, 2052 (54%) are in progress. The Ministry of Ecology promptly informs the local authorities responsible for the timely eradication of such dumpsites.

Technical regulation on requirements for motor gasoline, diesel, marine and boiler fuels was approved; it sets

the requirements for motor gasoline, diesel, marine and boiler fuels in order to secure human, animal, and plant life and health, protect the environment and natural resources. According to the Tax Code of Ukraine, the environmental tax is included in the fuel cost.

Construction of the new safe confinement over reactor 4 of the Chernobyl Nuclear Power Plant commenced in 2012. On November 8, 2017, the Chernobyl NPP commissioned its “enclosing perimeter”; the Shelter object is currently being dismantled.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes
NT 2, NT 3, ABT 4, ABT 7, ABT 8

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment relies on the analysis of regulatory framework, reporting documents, environmental data of the State Statistics Service of Ukraine, and relevant online sources.

Annually, the State Statistics Service of Ukraine computes the environmental indicators recommended by the United Nations Economic Commission for Europe (Methodological statements...). In addition, Boris Sreznovsky Central Geophysical Observatory collects data on air, water and soil pollution.

Important regulations on the reduction of environmental pollution were adopted and the implementation of provisions of the relevant EU Directives into the national legislation has started. A series of important practical steps were taken. Banning the use of zinc phosphide and related products is necessary for conservation of fauna, particularly the migratory species.

The National Information System on environmental pollution monitoring has only a limited number of indicators.

Relevant websites, web links and files

- The report on the implementation state of measures of the National Action Plan for Environment Protection for 2011–2015 – <https://bit.ly/342u2tf>
- Interactive map of identified loci of illegal dumpings – <https://ecomapa.gov.ua/>
- Interactive web page: Waste declarations. – <https://e-eco.gov.ua>
- National Strategy for Waste Management in Ukraine until 2030 (approved by the order of the Cabinet of Ministers of Ukraine, № 820-p, 08.11.2017) – <http://zakon.rada.gov.ua/laws/show/820-2017-p>
- Resolution of the Cabinet of Ministers of Ukraine on approval of the Order of providing the waste declaration and its forms (№ 118, 18.02.2016) – <http://zakon.rada.gov.ua/laws/show/118-2016-п>
- The public urges the Ministry of Ecology to improve the project of the National Waste Management Plan – <https://bit.ly/2ZnDXLI>
- Open Environment: now some data on environment are open for everyone – <https://bit.ly/2ZvHd6v>
- Order of the Ministry of Ecology on cancellation of state registration of the zinc phosphide pesticide and all of its preparation forms (№ 500, 05.12.2013) – <https://zakon.rada.gov.ua/rada/show/v0500737-13>
- The letter by the State Veterinary and Phytosanitary Service of Ukraine, 05.02.2014 №15-10-2-1/2861 “On the cessation of the state registration of pesticides”.
- State Statistics Service of Ukraine – <http://www.ukrstat.gov.ua>
- Methodological statements on forming and dissemination of ecological indicators by the State Statistics

Service according to world standards, the order by the State Statistics Service, № 311, 01.12.2017 — <https://bit.ly/2zqvXU0>

- Emissions of pollutants into the Ukrainian air (1990–2018) – <https://bit.ly/2L1tFrz>

Other relevant information

Among the successfully implemented NSB tasks are the new safe confinement construction over the reactor 4 of Chornobyl NPP and the resolution of the Cabinet of Ministers of Ukraine that introduced the requirements for motor gasoline and diesel for Euro 3 – Euro 5 standards.

The Shelter at the reactor 4 of Chornobyl NPP is being transformed into an environmentally safe area. A corresponding national program is in place. Following the new safe confinement arch sliding over the Shelter, the amount of the pumped out radioactively contaminated water decreased 4 times, gas and aerosol emissions decreased 3 times, and the magnitude of the dose rate around the object decreased 10–20 times. In 2017, the content of radioactive isotopes in water was among the lowest after the accident. Liquidation of the “Vakulenchuk” radioactive waste burial ground in Zhytomyr region (2016–2017) was successfully implemented, and the new project “Tsybuleve” in Kirovohrad region was launched.

Water monitoring indicators were determined. An interactive map of river pollution in Ukraine (Clean Water map) provides water monitoring data. As of November 14, 2018, a number of web portals provided information on air quality (EcoInfo service, supported by Dnipro Regional State Administration and NGOs), water quality (State Agency of Water Resources) and river pollution, as well as reports on environmental pollution delivered by the Boris Sreznevsky Central Geophysical Observatory.

Regional waste management programs were developed for Kyiv and nine regions (Dnipro, Donetsk, Kyiv, Lviv, Luhansk, Mykolaiv, Odesa, Poltava, and Khmelnytskyi).

A cohort of NGOs (“Ecoltava”, “Second Life”) and initiatives (“No Waste Ukraine”, Zero Waste Ukraine) promote the sorting of household waste and encourage local administrations to act on the matter. A mobile app “Sortui” (“Sort”) facilitates waste sorting. The Open Society Foundation deals with open data issues pertaining to environmental quality (“Open Access Environment” project). NGO “Data Journalism Agency” created an interactive map of river pollution in Ukraine (Clean Water map). The map covers more than 400 river water check points, each of them containing up to 16 pollution parameters with an opportunity to evaluate the 5-year dynamics.

Relevant websites, web links and files

- Resolution of the Cabinet of Ministers of Ukraine on approval of the Technical regulation on requirements for motor gasoline, diesel, marine and boiler fuels (№ 927, 01.08.2013) – <http://zakon.rada.gov.ua/laws/show/927-2013-п>
- Project “New Safe Confinement Construction” – <https://chnpp.gov.ua/en>
- The Law of Ukraine on General Principles of Further Operation and Decommissioning of Chornobyl NPS and Transformation of Ruined Fourth Power Unit of this NPS into Ecologically Safe System (№ 309-XIV, 11.12.1998, as amended under the Law of Ukraine on Amendments and Declaring to be Invalid Some Legislative Acts of Ukraine № 76-VIII, 28.12.2014) – <http://zakon.rada.gov.ua/laws/show/309-14>
- Review of state of environmental pollution of the area of Ukraine, observation data by hydrometeorological organizations: 2016 – <https://bit.ly/2ZkNRgD>; 2017 – <https://bit.ly/2ZjJG4B>
- The elimination of the Vakulenchuk nuclear waste storage facility in the Zhytomyr Oblast is complete. – <http://nte.com.ua/ua/news/2018/06/01/23/view>
- Ukraine, supported by NATO, eliminates the nuclear waste storage in the Kirovograd Oblast. – <https://bit.ly/2ZwU48C>
- ECOINFO. The state of air by location – https://ecoinfo.pro/site/any_points
- State of environmental pollution at the area of Ukraine – <https://bit.ly/2HHqK5h>
- Monitoring and environment assessment of water resources of Ukraine. State Agency of Water

Resources of Ukraine – <http://watermon.iisd.com.ua/EcoWaterMon/GDKMap/Index>

- Clean Water Map – <https://bit.ly/2HqHXje>
- Dnipro Oblast, “The Oblast complex program of waste management in 2006–2015” and “Oblast Strategy of management of municipal solid waste (in the frames of the Dnipro Oblast complex program (Strategy) of environmental safety and combating climate change in 2016–2025)” – <https://bit.ly/30EEvc3>
- Donetsk Oblast, “Program of waste management in the Donetsk Oblast in 2016–2020” – <http://ecology.donoda.gov.ua/programi-3>
- Lviv Oblast “The Oblast program of municipal solid waste management in 2007–2015” and “Program of measures for establishing the system of municipal solid waste management in the city of Lviv in 2017 – 2019” – <https://bit.ly/2MN0EC3>
- Mykolaiv Oblast, “Program of municipal solid waste management in the Mykolaiv Oblast until 2020” – <https://bit.ly/2L7NCLY>
- Odesa Oblast “Regional program of toxic waste management in the Odesa Oblast in 2008–2015” – <https://bit.ly/3411wbn> and “Program of municipal solid waste management in the Odesa Oblast in 2013–2017” – <https://bit.ly/2NBjefY>
- NGO Ekoltava – <http://www.ekoltava.org>
- Zero Waste Ukraine – <http://nowaste.com.ua/>
- The first trial in Ukraine on waste management – <https://bit.ly/2OyXVfE>
- Ukrainian app will help to sort waste – <https://bit.ly/2ZkQQWn>

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

13. Management of invasive alien species

A set of legal, regulatory and policy measures aiming at drawing up a list of priority invasive alien species (IAS); arranging quarantine of potentially dangerous invasive alien species (IAS); regulating the requirements for ecologically safe aquaculture.

NSB contains NT 5 that, *inter alia*, intends to create a system of precautionary measures for invasive species and control the introduction of such species into ecosystems, particularly marine ones.

The Law of Ukraine “On Plant Quarantine” (1993, amended October 4, 2018) envisages a complex of measures; their implementation is supported by the issued regulatory acts.

The Law of Ukraine “On Aquaculture” (2013) defines the notions of “alien” and “non-native” species in the context of aquatic organisms and the concept of “closed-containment aquaculture”. Requirements for the breeding of alien species were set in order to prevent them from infiltrating the natural environment. Aquaculture enterprises that cultivate alien species are in the medium-risk group, which entails additional routine measures of state control over their activities.

The Interagency Working Group on IAS was set up at the Ministry of Ecology, members representing the executive branch and academia.

Presently, individual studies are conducted on the distribution of some IAS groups. In 2015, the National Research Institute of the Ukrainian Research Institute of Environmental Problems of the Ministry of Ecology conducted a research “Assessment of the status of alien species problem (alien animals and plants) in Ukraine and development of recommendations for legislative and organizational framework for regulation and establishment of a control system over introduction and distribution of such organisms in the territory of Ukraine in compliance with the requirements of the Convention on Biodiversity and the decisions of its governing bodies”.

In response to a written inquiry from the Ministry of Ecology, many administrations of protected areas and several regional administrations reported on the implementation of biotechnical measures pertaining to the

<p>elimination of the threat of invasive species (e. g., Khmelnytskyi Regional State Administration, Dzharylhach NNP, Oleshky Sands NNP, etc.).</p>
<p>For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes</p> <p>NT 5, NT 6, ABT 9</p>
<p>Assessment of the effectiveness of the implementation measure</p> <p><input type="checkbox"/> Measure taken has been effective</p> <p><input checked="" type="checkbox"/> Measure taken has been partially effective</p> <p><input type="checkbox"/> Measure taken has been ineffective</p> <p><input checked="" type="checkbox"/> Unknown</p> <p>Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above</p> <p>The assessment is based on the analysis of the regulatory framework, scientific publications, and research project reports.</p> <p>Quarantines of certain territories are announced regularly, following the “List of regulated pests”, in particular for the physical extermination of IAS. However, monitoring and quarantine of animal and plant species that have an adverse effect on natural ecosystems are not conducted at the national level. The assessment relies upon the information provided to the Interagency Working Group on IAS.</p> <p>Assessment criteria regarding the status of alien species used in aquaculture: data on species abundance. At present, about 10 alien fish species formed self-sustaining populations in inland water bodies. They account for up to 15% of juvenile fish in the shallows of the Dnipro reservoirs. Furthermore, intended restocking of reservoirs is conducted using a number of alien species.</p> <p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • The Law of Ukraine on Plant Quarantine (№ 3348-XII, 30.06.1993, amended 04.10.2018) – https://zakon.rada.gov.ua/laws/show/en/3348-12 • Order of Ministry of Agropolicy on approval of the List of controlled harmful organisms (№ 716, 29.11.2006) – https://zakon.rada.gov.ua/laws/show/z1300-06 • Quarantine Status, Ukraine. – https://bit.ly/30CE4ip • Order of Ministry of Ecology on establishing of the Inter-Agency working group on invasive alien species (№ 207, 14.06.2018) – https://bit.ly/2Ldgh2a • The Law of Ukraine on Aquaculture (№ 5293-VI, 18.09.2012) – http://zakon.rada.gov.ua/laws/main/5293-17 • Resolution of the Cabinet of Ministers of Ukraine on criteria for risk assessment in economy of fisheries and schedule for planned measures of control by the State Agency of Fisheries (№ 276, 17.04.2013) – http://zakon.rada.gov.ua/laws/show/276-2013-rr • Ukrainian Research Institute of Ecological Problems. Achievements – http://www.niiep.kharkov.ua/node/15 • Information on practical implementation of research done by the Ukrainian Research Institute of Ecological Problems in 2015. – https://bit.ly/2BZ0f8G <p>Other relevant information</p> <p>A regulatory act (National Water Monitoring Procedures), which defines indicators for invasive aquatic species, was issued to improve the monitoring situation regarding the IAS. Also, under the FAO Country Programming Framework for Ukraine (FAO, July 2016), paragraph 1.4 stipulates an increase in the number of plant quarantine personnel and phytosanitary inspectors that identify the plant shipments in need of quarantine.</p>

Monitoring and quarantine of IAS having a detrimental effect on the environment, particularly natural ecosystems, are not executed at the national level. Only a few AIS, most dangerous for economic activities, are in the List of Regulated Pests. Records of these species lead to quarantines of certain territories and physical extermination of these organisms. However, other non-listed invasive species remain unaddressed, and the risk of related damage keeps increasing.

Using alien species for restocking is the main approach for enhancing fish productivity of small and medium water reservoirs and river bed ponds. In 2015–2017, up to 60% of the total catch of aquatic bioresources by commercial fisheries came from silver carp. A number of alien species (silver carp *Hypophthalmichthys molitrix*, grass carp *Ctenopharyngodon idella*) are used to control growth of aquatic plants and are therefore valuable aquaculture species, besides, unable to naturally reproduce in the waters of Ukraine.

Relevant websites, web links and files

- National Water Monitoring Procedures (approved by the resolution of the Cabinet of Ministers of Ukraine, № 758, 19.09.2018) – <http://zakon.rada.gov.ua/laws/show/758-2018-п>
- The FAO Country Programming Framework for Ukraine – <http://www.fao.org/3/a-bp567e.pdf>

Obstacles and scientific and technical needs related to the measure taken

Obstacles include a lack of monitoring programs for IAS that, aside from agriculture, threaten biodiversity; insufficient funding for IAS monitoring.

The issue of liability for the unauthorized introduction of aquatic alien species remains unregulated. In the setting of large and medium-sized reservoirs, measures aiming to diminish the number of widespread alien species will be ineffective due to the tight integration of the latter into aquatic ecosystems.

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

14. Reduction of anthropogenic pressure on vulnerable ecosystems

A set of legal and regulatory measures aiming to alleviate anthropogenic impact on marine, coastal and terrestrial ecosystems that are vulnerable due to climate change and ocean acidification.

The NSB includes NT 2 on conservation of the ecosystems of the Black and Azov Seas. The NAP 2011–2015, in turn, stipulates impact assessment of pollution on the state of the Sea of Azov and the Black Sea, along with creating protected areas covering at least 10% of coastal and marine areas. Moreover, the NAP 2011–2015 contains paragraph 58, “Ensuring scientific and practical research on vulnerability of environmental and socio-economic systems to climate change”.

In order to comply with the UN Convention on Desertification, the National Action Plan to Combat Land Degradation and Desertification was adopted in 2016; it includes measures on restoration and protection of forests and wetlands.

Ukraine is involved in the BlackSeaWet initiative. The work plan for 2018–2021 regarding the use of wetlands and adaptation to climate change in the Azov-Black Sea region was negotiated.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes

NT 2, NT 4, NT 5, NT 7, ABT 10

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment is based upon the analysis of regulatory and reporting documents, research data and maps, as well as expertise of participating in the implementation of measures. Initial assessment of the ecological status of seawater and the impact resulting from human activities was conducted during the projects “Environmental monitoring of the Black Sea” (EMBLAS I and EMBLAS II). Major pollutants specific for the Black Sea were identified for the first time, and recommendations for enhancement of environmental monitoring were developed.

In 2013–2017, no new marine protected areas were established in Ukraine. As for the coastal territories, the wetland of international importance “Dnipro River Delta” became a part of the newly established Nyzhniodniprovskii NNP.

The strategic documents include targets pertinent to the conservation of vulnerable terrestrial ecosystems. Anthropogenic impact reduction can be achieved via the inclusion of such ecosystems in the PAs. Nonetheless, there are only a few measures aimed at restoring vulnerable terrestrial ecosystems.

In pursuance with paragraph 58 of the NAP 2011–2015, research efforts directed at supporting adaptation to climate change were launched.

Relevant websites, web links and files

- BlackSeaWet – <https://bit.ly/2L9qyMV>
- Improving Environmental Monitoring in the Black Sea (EMBLAS-I) Final Report ENPI/2012/293-589 1 January 2013 – 31 March 2015 – <https://bit.ly/2MEkdfC>
- EMBLAS – <http://emblasproject.org/publications-reports>
- On the project of the National Strategy of Marine Environmental Policy. – <https://menr.gov.ua/news/31381.html>
- Order of the President of Ukraine on founding of The Nyzhniodniprovskii National Nature Park (№ 657/2015, 24.11.2015) – <http://zakon.rada.gov.ua/laws/show/657/2015>
- The Law of Ukraine on Changes in Several Legal Acts of Ukraine for Implementation of The Convention on the Conservation of European Wildlife and Natural Habitats (№ 1832-VIII, 07.02.2017) – <http://zakon.rada.gov.ua/laws/show/1832-19>
- The Law of Ukraine on Nature Reserve Fund of Ukraine (№ 2456-XII, 16.06.1992; revised) – <http://zakon.rada.gov.ua/laws/show/2456-12>
- The report on the implementation state of measures of the National Action Plan for Environment Protection for 2011–2015 – <https://bit.ly/342u2tf>

Other relevant information

Measures related to forest conservation and adaptation of ecosystems to climate change, as well as efforts to combat land degradation, are partially effective. Among the successful practical projects is the restoration of the “Valley of Daffodils” in the Carpathian Biosphere Reserve by restoration of the hydrological regime of the site.

The Law “On Amendments to Certain Legislation of Ukraine related to Implementation of the Convention on the Conservation of European Wildlife and Natural Habitats” (2017) prohibits mowing using mechanical means and implementation of biotechnical interventions within nature reserves. However, by expert opinions, this approach complicates the restoration and management of vulnerable ecosystems (which is most critical for the steppe ecosystems that, in absence of grazing animals, require mowing).

Obstacles and scientific and technical needs related to the measure taken

It is essential to provide a legal definition and a list of ecosystems affected by climate change or ocean acidification in Ukraine. Creation of new protected areas in the coastal zone is required, as well as science-based

measures for conservation of the most vulnerable ecosystems.

The number of PAs that include the marine area was 36 in 2014, with 23 of them in the Crimea, temporarily occupied by Russia since 2014. The occupier authorities altered (diminished) the status of many of them, and some of the PAs were abolished. This makes preservation of the most valuable marine and coastal ecosystems in temporarily occupied territories impossible.

Relevant websites, web links and files

- Vasyliuk, O., Norenko, K., Shiryayeva, D. *et al.* 2015. The Glacial Period for protected areas: 2014–2015 // Environment People Law Journal. – 2015. – 25–26. – P. 65–6. – <https://bit.ly/2KWG1Rv>

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

15. Restoration of wetlands

A set of regulatory and financial measures focusing on restoration of wetlands which are vulnerable due to climate change and ocean acidification.

NSB envisages protection of water resources, *inter alia*, by introducing the integrated water resources management based on the basin principle.

Six new wetlands were approved according to the Ramsar Convention, and information on available websites is being updated.

A successful project was carried out on the territory of the “Tyligulskyi Liman” Ramsar site, where a canal was built (2017) between the estuary and the Black Sea, which facilitated the restoration of the water level. Artificial islands for nesting waterfowl were built in the Tuzly Lagoons NNP. Several wetland restoration projects were successfully implemented with the support of the WWF. Hydrological regime of the Chorne Bahno hydrological sanctuary (*zakaznyk*) in the Zacharovany Krai NNP was restored. Currently, the WWF in Ukraine is assessing the restoration outcomes on Ermakov Island and Maly Tataru Island in the Danube Delta.

Financial measures included “Construction of a connecting canal for the restoration of a water link between the Sea of Azov and the Molochnyi Liman” (€35.2 million budgeted in 2018) and “Restoration of the hydrological regime of the Sula River in Lohvytskyi district in Poltava region” (€4.5 million in 2017 budget).

The “Consolidation of the nature protected areas’ network for biodiversity protection and sustainable development in the Danube Delta and Lower Prut river region – PAN Nature” project was implemented in the Danube Delta, within the framework of the Romania-Ukraine-Moldova Cross Border Cooperation Program, in particular aiming to restore the ecosystem of the “Kartal Lake” Ramsar site.

In line with the project “Climate Change and Security in Eastern Europe, Central Asia and the Southern Caucasus”, the “Strategic Framework for Adaptation to Climate Change in the Dniester River Basin” and the Implementation Plan was developed.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes
NT 5, NT 7, ABT 10

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment stems from the analysis of the reports. A series of successful local ecosystem restoration activities were implemented. Factors that negatively affect the wetlands are drainage, pollution, invasive species, and unregulated construction. Wetlands are among the most vulnerable ecosystems that suffer from drainage and peat extraction.

Relevant websites, web links and files

- Ramsar National Report to COP13: Ukraine – <https://bit.ly/30ExQ1D>
- Artificial islands in the “Tuzly Lagoons” National Park – <https://menr.gov.ua/news/31571.html>
- Restoration of Chorne Bahno bog – <https://bit.ly/2NBEe64>
- Restoration of the Danube wetlands – <https://bit.ly/2PgddaX>
- “Construction of the connecting channel for the reconstruction of the waterway of the Azov Sea with the Molochnyi Estuary” – <http://zakon.rada.gov.ua/laws/show/361-2018-п>
- “Restoration of the hydrological regime of the Sula River in the Lokhvytsya district of the Poltava region” – <http://zakon.rada.gov.ua/laws/show/473-2017-п>
- “Consolidation of the protected areas network for biodiversity conservation and sustainable development of the Danube and the Lower Prut deltas - PAN Nature” – <http://openaid.gov.ua/uk/projects/641>
- Restoration of the Ramsar site “Lake Kartal” ecosystem – <http://www.crs.org.ua/en/projects/current/186.html>
- “Strategic Directions for Adaptation to Climate Change in the Dnister Basin” – <https://www.osce.org/secretariat/260306>
- “Strategic Directions for Adaptation to Climate Change in the Dnister Basin” Implementation Plan – <https://www.osce.org/secretariat/366721>
- Ramsar Convention on Wetlands. (2018). Global Wetland Outlook: State of the World’s Wetlands and their Services to People. Gland, Switzerland: Ramsar Convention Secretariat. – <https://bit.ly/2ImMQce>
- Didukh, Ya. (2009). Ecological aspects of the global climate changes: reasons, consequences and actions. Visnyk NAN Ukrainy. 2: 34–44. – <https://bit.ly/2Zi89aI>

Obstacles and scientific and technical needs related to the measure taken

Development of a nationwide program for restoration of vulnerable ecosystems and preparation of a consolidated cadastre of wetlands, peatlands and drained land complexes is needed.

Relevant websites, web links and files

- Konishchuk V. V. Ecological bases of development and protection of peat bogs of Polissya: author's abstract. Thesis ... Dr. Biol. Sciences: 03.00.16; NAAS of Ukraine, Institute of Agroecology and nature use. – Kyiv, 2013. – 44 p.

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

16. Conservation of areas key for biological and habitat diversity

A set of legal, regulatory and policy measures aimed to approve standard baseline indicators for the size of protected areas, identify and assign conservation status to the areas important for conservation of biological and habitat diversity.

For the NT 5 “Halting the loss of biological and landscape diversity and establishing the ecological network”, the following objective was defined: to expand the NRF area to 10% by 2015 and to 15% of the total area of the country by 2020. The NBS 2011–2015 also contains a corresponding paragraph.

The State Strategy of Regional Development for the Period until 2020 (2014) determines the percentage of

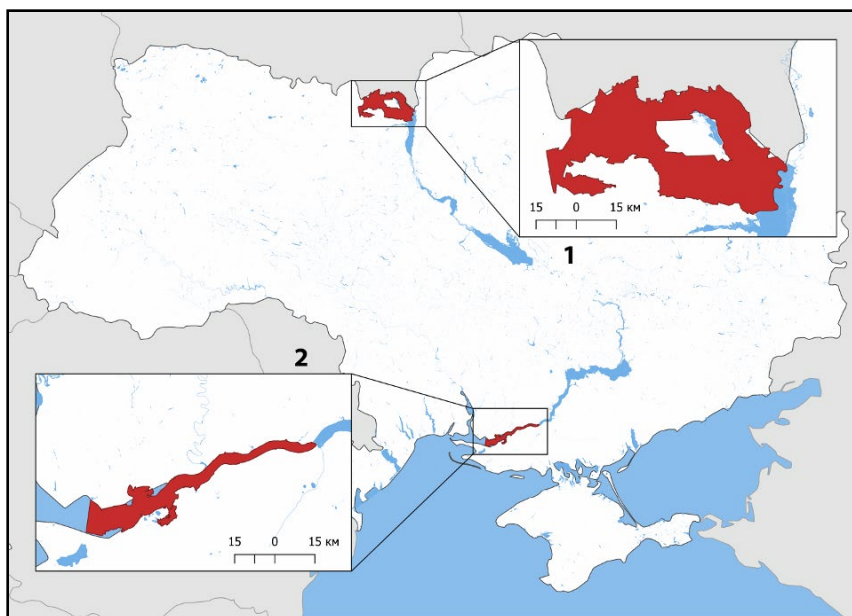
NRF territories by January 1, 2017 at 11%, and in early 2021 at 15% of the total area of the country (at the point of this document being approved, this figure was 6.1%). In 2017, the Strategy was amended to enhance the reporting system for NRF area expansion; presently, the data on the expansion of the NRF area is among the annual indicators for performance evaluation of regional state administrations.

The measures taken to identify natural areas, key for conservation of biological and habitat diversity, and assign those with a relevant status include the five key dimensions.

A) Establishment of new and expansion of existing protected areas (according to the Law of Ukraine “On Nature Reserve Fund”). Over the reporting period, 268 protected areas were established in Ukraine, with a total area of 334,209.7 ha (8.4% of the total NRF area). The largest of the newly established PAs are:

(1) Chernobyl Radiation and Ecological Biosphere Reserve (2016) within the Exclusion Zone and the Area of Mandatory Resettlement that was exposed to radioactive contamination resulting from the Chernobyl disaster, area – 227 thousand hectares (Kyiv region);

(2) Nyzhniodniprovskii National Nature Park (2015), which focuses on conservation of a wetland of international importance “Dnipro River Delta”, area – more than 80 thousand hectares (Kherson region).



The largest PAs of Ukraine established during the reporting period (map compiled by M. O. Savchenko).

In Ukraine, there are a total of 663 NRF territories and entities (PAs) of nationwide and 7633 of local importance.

Ukraine is engaged in transboundary environmental cooperation as a part of the implementation of UNESCO's Man and the Biosphere Program and the Convention Concerning the Protection of the World Cultural and Natural Heritage via the establishment of transboundary biosphere reserves and World Heritage Sites, respectively.

Certain territories were granted official international status. In particular, the beech forests of Ukraine, located within already established PAs (Gorgany Nature Reserve and Roztochya Nature Reserve, NNP Podilski Tovtry, NNP Synevyr, NNP Zacharovany Krai), were listed as a UNESCO World Heritage site “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe” (2017). Furthermore, a joint Ukrainian-Polish proposal for establishing the Roztocze Transboundary Biosphere Reserve has been prepared.

As of 2015, the decisions on identification and setting aside of valuable natural areas for conservation were made in 16 regions; regional ecological network programs are available and include sections regarding the prospective PAs.

B) Identification of potential Emerald Network sites. In 2017, the Standing Committee to the Bern Convention designated and approved a list of 271 Emerald Network sites in Ukraine (all in accordance with the IUCN protected area classification); their total area is 10% of the country. Experts from Ukrainian NGOs

continue working on adding more areas to the list (currently it includes nearly 150 additional territories). The draft law “On Emerald Network Sites” has been prepared by the experts from NGOs and the Ministry of Ecology.

C) Identification of Wetlands of International Importance (Ramsar Sites). Six wetlands were granted the ‘Wetland of International Importance’ status, following the decision of a relevant Ramsar Convention body. Currently, the total number of Ramsar sites in Ukraine is 39; the total area is over 786 thousand hectares. Protection of the Ramsar sites in Ukraine is chiefly ensured by including them in the NRF (as of today, most of them acquired the legal status). By the order of the Ministry of Ecology (dated March 4, 2016), the Plan of measures for implementation of the Ramsar Convention in Ukraine for 2016–2021.

D) Development of the National Ecological Network (in line with the Law of Ukraine “On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015”). Following the results of the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015, the spatial structure of the network (8 ecological corridors) was established; potential sites for ecological network development and their size was determined; conditions for setting aside the areas rich in biodiversity and further assigning them the protected area status were created; transboundary cooperation with ecological networks sites of the neighboring countries.

The Resolution № 1196 of the Cabinet of Ministers of Ukraine (dated December 16, 2015) “On approval of the Procedure for inclusion of territories and objects in the lists of territories and objects of ecological network” was adopted in order to establish effective management of the ecological network, identify and assign the legal status to its sites, and ensure the intended land use of the territory. The territories and entities listed within the network will be entered in the State Land Cadastre, urban planning and land management documentation.

E) Identification of areas and sites of international significance for conservation of fauna (birds, bats, cetaceans). The network of Important Bird Areas in Ukraine currently consists of 166 territories with a total area of 2.5 million hectares. Over the reporting period, Ukrainian scientists identified the key underground locations of bats; the database (List of internationally important underground sites) is updated in line with the implementation of the EUROBATS. In particular, 12 new sites were identified (currently, the list includes 47 sites). Moreover, conforming to the CBD, 5 ecologically or biologically significant marine areas (EBSA) were recognized in the Ukrainian waters of the Black Sea, one of them (Balaklava) of primary significance for cetaceans.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes
NT 5, NT 7, ABT 11, ABT 12, ABT 19

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment relies upon the analysis of documents governing or envisaging the creation of PAs, as well as the available reports on the identification of areas and sites key for conservation of biological and landscape diversity, compliance with international treaties, and analytical publications produced by NGOs and the UNDP GEF.

As of January 1, 2018, the Nature Reserve Fund of Ukraine covers more than 3,985 thousand hectares, including 8,296 areas and entities, which is 6.6% of the total area of the country. Furthermore, there is a protected area in the Black Sea of 402.5 thousand hectares in the exclusive economic zone of Ukraine. Therefore, the projected figures as to the ratio of PAs (defined in the abovementioned documents) were not accomplished.

Relevant websites, web links and files

- Resolution of the Cabinet of Ministers of Ukraine, on changes to the National strategy of regional development for the period till 2020 (№ 1089, 20.12.2017) – <https://bit.ly/2NGfauC>
- The Law of Ukraine on the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015 (№ 1989-III, 21.09.2000; revised) – <http://zakon.rada.gov.ua/laws/show/1989-14>
- Final report on results of the National program of forming the National ecological network of Ukraine in 2000–2015. – <https://menr.gov.ua/news/32903.html>
- Vasyliuk, O., Drapaliuk, A., Parchuk, H., Shyriaieva, D. Identification of territories suitable for the announcement of the nature reserve fund objects. – Lviv, 2015. – 80 p. – <https://bit.ly/1TPfAsC>
- Identification of new Emerald sites is foreseen by the EU-Ukraine Association Agreement. – http://zakon.rada.gov.ua/laws/show/984_011
- Order of the President of Ukraine on Founding the Chornobyl Radiation and Ecological Biosphere Reserve (№ 174/2016, 26.04.2016) – <http://zakon.rada.gov.ua/laws/show/174/2016>
- Order of the President of Ukraine On founding of The Nyzhniodniprovskii National Nature Park, 24.11.2015, № 657/2015. – <http://zakon.rada.gov.ua/laws/show/657/2015>
- Primeval beech forests of the Carpathians and other regions of Europe – <https://bit.ly/2KYDPC9>
- Information and analytical materials and propositions of the Ministry of Ecology on the analysis of the natural reserve pool of Ukraine. – Kyiv, 2017. – 46 p.
- Order of the Cabinet of Ministers of Ukraine on approval of the Plan of measures for conservation and development of the Ukrainian part of the natural object ‘Beech primeval forests of the Carpathians (№ 1619-p, 23.12.2009) – <https://zakon.rada.gov.ua/laws/show/1619-2009-p>
- Emerald Network in Ukraine – <https://bit.ly/2KWVqBg>
- About the draft law of Ukraine on the Areas of the Emerald Network – <https://menr.gov.ua/news/32142.html>
- Ramsar sites in Ukraine – <http://www.ramsar.org/sites/default/files/documents/library/sitelist.pdf>
- Action Plan for implementation of Ramsar Convention in Ukraine in 2016–2021 – <http://zakon.rada.gov.ua/rada/show/v0352737-12>
- Ramsar National Report of Ukraine to COP13 for 2015–2017 – <https://bit.ly/30ExQ1D>
- Resolution of the Cabinet of Ministers of Ukraine on approval of the Procedure for inclusion of territories and objects in the lists of territories and objects of ecological network (№ 1196, 16.12.2015) – <https://zakon.rada.gov.ua/laws/show/1196-2015-п>
- National Report on the IBA in Ukraine, 2016–2017. – <http://birdlife.org.ua/IBA-Programma>
- CMS Resolution 11.25 (on IBA) – <https://bit.ly/30CERzT>
- List of internationally important underground sites for EUROBATS – <https://bit.ly/2Zq13i5>
- New key underground bats sites – <https://bit.ly/32gSaXx>
- Identification of EBSA in the Black Sea – <https://bit.ly/33VCJW6>

Other relevant information

Forests remain to be the primary target for the expansion of the PAs, accounting for over 2/3 of all the natural and semi-natural territories in Ukraine. The NRF already includes 15.7% of the total area of forests, leading to 44.8% of the existing PAs being located within the lands of the State Forest Fund.

The experts suggest that in order to achieve the PA targets envisaged in the legislation in the coming years, it is crucial to include substantially larger areas of forested land in the NRF. In case when the natural areas of forests, wetlands, and steppe are proportionally set aside for protection, the total area of forests included in the NRF should rise up to 55.3% by 2021.

Simultaneously, the vast majority of the existing national nature parks and nature reserves in Ukraine are

located outside the steppe zone. However, the steppe habitats are represented significantly worse than any other habitats protected by the NRF of Ukraine. Currently, the PAs in the steppe regions predominantly comprise of forests, forest plantations, lakes and floodplains.

Relevant websites, web links and files

- Vasyliuk, O., Drapaliuk, A., Parchuk, H., Shyriaieva, D. Identification of territories suitable for the announcement of the nature reserve fund objects. – Lviv, 2015. – 80 p. –<https://bit.ly/1TPfAsC>

Obstacles and scientific and technical needs related to the measure taken

The obstacle arises with the complicated procedure of granting the legal status to an entity or area, which entails the approval of land users and landowners, who frequently oppose setting the areas aside for protection. Another challenging factor is the lack of administrative and financial resources.

Legal protection of the Ramsar sites, along with areas and sites key for conservation of fauna outside the PAs, is weak or nonexistent.

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

17. Species status assessment, protection and recovery of species

A set of legal, regulatory, scientific and practical measures.

The legal framework for achieving the ABT 12 was at large established in Ukraine prior to the reporting period of 2013–2017. Ukraine is engaged in a number of international treaties, namely: the CBD, UNFCCC, UNCCD, CITES, Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention), Bonn Convention (CMS) and the subsidiary agreements (AEWA, ACCOBAMS, EUROBATS; Memoranda of Understanding concerning Conservation Measures for the Aquatic warbler, the Great bustard, and the Slender-billed curlew); Bern Convention on the Conservation of European Wildlife and Natural Habitats; Framework Convention on the Protection and Sustainable Development of the Carpathians; Convention on the Protection of the Black Sea Against Pollution. Ukraine conducts relevant measures in line with these treaties. In addition, Ukraine participates in elaboration and adoption of resolutions and decisions by the parties pertaining to the implementation of the international treaties.

During the reporting period, amendments were introduced to the Law of Ukraine “On Licensing in the Field of Economic Activity” and the Law of Ukraine “On Amendments to the Customs Code of Ukraine and Some Other Laws of Ukraine Regarding the Implementation of the “single window” mechanism and Optimization of Control Procedures for the Movement of Goods across the Customs Border of Ukraine” (2018), with the aim of enhancing the legal and regulatory framework to control the trade in endangered species of wild flora and fauna. Control over trade in the CITES-listed species is governed by the resolutions of the Cabinet of Ministers of Ukraine.

The NSB includes target 5 “Halting the loss of biological and landscape diversity (...)”. The NAP 2011–2015 includes a set of measures designed to implement the target 5.

In order to harmonize the national legislation with the EU regulations, a number of amendments were made to the Laws of Ukraine “On Fauna”, “On Flora”, “On the Red Data Book of Ukraine”, “On the Ecological Network of Ukraine”, “On Game Management and Hunting”, and “On Nature Reserve Fund of Ukraine”, namely: prohibition of uncontrolled burning of dry vegetation, certain fishing and hunting gears (including snares, traps, electric fishing rods), ploughing of habitats of wild animals and destruction of hollow trees; legal enforcement of the “quiet season” during the breeding season of wild animals. By the orders of the Ministry of Ecology, the European elk was listed among the species of the Red Data Book of Ukraine; the lists of species that require special protection were approved for Kharkiv and Donetsk regions.

Several programs were active during the reporting period, the “Black Stork Conservation” and “White Stork Conservation” programs (coordinated by the West Ukrainian Ornithological Society); financial means were

provided for measures to support local populations and subpopulations of the European bison; ban on catching common the Black Sea bottlenose dolphins for dolphinarium, allegedly for animal rehabilitation, was introduced; action plan for conservation of the white-tailed eagle was developed (NNP Nyzhniosulskyi); population monitoring of the Eurasian beaver is carried out with public involvement (NNP Slobozhanskyi); artificial spawning grounds for the Black Sea gobies are being established (Dzharylhach NNP), etc.

Ukraine takes action in fulfillment of the signed treaties: CMS, ACCOBAMS, EUROBATS, AEWA and Memoranda of Understanding on *Acrocephalus paludicola*, *Otis tarda* and *Numenius tenuirostris*.

Overall, a number of CMS Annex I species were listed in the Red Data Book of Ukraine (3 mammal species, 184 bird species, and 1 species of fish). Enforcement of the adopted action plans is ongoing, focused on implementation of the Birds and the Habitats Directives in Ukraine; new Emerald Network sites were established. Ukraine files reports on the conservation measures carried out for a number of species in fulfillment of the Memoranda of Understanding (the Aquatic warbler *Acrocephalus paludicola*, the Great bustard *Otis tarda*, and the Slender-billed curlew *Numenius tenuirostris*). Ukraine is implementing measures pertaining to the conservation of African-Eurasian migratory waterbirds (AEWA), bat populations in Europe (EUROBATS), and cetaceans (ACCOBAMS).

Data collection is conducted for the Atlas of breeding birds of Ukraine (coordinated by the Ukrainian Society for the Protection of Birds) and the Mammal Atlas of Ukraine. Annual winter waterfowl census (“International waterbird census (IWC) in winter”) in the Azov-Black Sea region is carried out. The initial assessment of cetacean populations in the northwestern Black Sea was executed. The assessment of the status of biota in the open part of the Black Sea was carried out within the EMBLAS II project. Wildlife censuses are organized by the PAs. Publication of a special data collection on the Red Data Book species over the period of 2009–2018 by the I. I. Schmalhausen Institute of Zoology is a crucial step in preparation of the 4th edition of the Red Data Book of Ukraine (on fauna). The UkrBIN online database on biodiversity was created; data collection on sturgeons in the Danube region and the lynx in the Carpathians (WWF projects in Ukraine) is ongoing. In 2018, the Ministry of Ecology endorsed the research on summarizing data on certain species of plants and animals listed in the Red Data Book of Ukraine, as well as on plant and animal species and habitats identified as priority by the Bern Convention. The assessment of conservation status of plant species and plant communities in Ukraine is conducted in line with the preparation of a new edition of the Red Data Book of Ukraine (coordinated by the M. G. Kholodny Institute of Botany).

Species action plans are in place for conservation and recovery of the European bison *Bison bonasus* and the brown bear *Ursus arctos*. There are ongoing efforts to prepare the Action Plan for conservation of the black stork *Ciconia nigra* in Ukraine.

A number of measures are implemented to enhance *ex situ* breeding of species, in particular fish (including sterlet), breeding of great bustard, wood grouse, black grouse and wisent (NNPs Vizhnitsky, Verkhovynsky, and Karpatsky); wildlife rehabilitation centers operate in several locations (NNPs Halytsky, Synevyr; private centers “Feldman Ecopark”, bear sanctuary “Domazhyr”, bear rescue center “White Rock”). Captive breeding of rare species is carried out in zoos and biosphere reserves.

The strategy of forest genetic resource conservation entails both protecting individuals and populations in their natural environment (*in situ*) and conserving target species outside their natural habitat (*ex situ*). Collections of rare plant species are kept in arboreta and botanical gardens, and a collection of fungi was created at the NNP Hutsulshchyna.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes
NT 5 and ABT 11, ABT 12, ABT 14

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
- Measure taken has been partially effective
- Measure taken has been ineffective
- Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment relies upon the analysis of the current legislative framework of Ukraine and reporting documents, including the national reports of Ukraine (2014, 2017) in compliance with the Bonn Convention.

Certain legal provisions call for additional regulatory support. It is essential to establish a system for monitoring the number of species and introduce amendments to sectoral laws (in forestry, agriculture, water, and other sectors) in order to reduce the impact of economic activity on fauna and flora.

Efforts to combat poaching have not yielded significant results. First and foremost, poaching affects sturgeon, lynx, bear, wisent, elk and rare migratory species of waterfowl (e. g., lesser white-fronted goose *Anser erythropus* and the red-breasted goose *Branta ruficollis*). Some species of plants, invertebrates, amphibians, reptiles, and birds (all protected by law) are taken from the wild for commercial use. Cetaceans are bycaught in illegal fishing gears.

The abovementioned efforts on assessing the populations of plant and animal species are partial measures that require significant expansion.

Relevant websites, web links and files

- CITES Resolution CoP17-41 – <https://cites.org/sites/default/files/eng/cop/17/WorkingDocs/E-CoP17-41.pdf>
- CITES Resolution CoP17-Prop-42 – <https://cites.org/sites/default/files/eng/cop/17/prop/060216/E-CoP17-Prop-42.pdf>
- Decree of the Cabinet of Ministers of Ukraine on Approval of the Procedure for Issuing Permits for the Import and Export of Specimens of Wild Fauna and Flora Species, Certificates for Traveling Exhibitions, Re-exports and the Introduction of Such Specimens from the Sea that are Subject to the Convention on International Trade in Endangered Species of Wild Fauna and Flora Disappearance, in Part of Sturgeon Fishes and Products made from them (№ 953, 25.07.2007; as amended according to Decrees of the Cabinet of Ministers of Ukraine № 1221, 30.11.2011; № 98, of 30.01.2013; № 1173, 16.12.2015) – <https://zakon.rada.gov.ua/laws/show/953-2007-п>
- The Law of Ukraine on the Permit System in the Field of Economic Activity (№ 2806-IV, 06.09.2005) – <http://zakon.rada.gov.ua/laws/show/2806-15>
- The Law of Ukraine on Changes into the Customs Code and Several Other Laws of Ukraine on Enabling One-Stop Shops and Optimization of Control Procedures on Customs (№ 2530-VIII, 06.09.2018) – <http://zakon.rada.gov.ua/laws/show/2530-19>
- The Law of Ukraine On Changes in Several Legal Acts of Ukraine on Reducing The Number of Permits (№ 1193-VII, 09.04.2014) – <http://zakon.rada.gov.ua/laws/show/1193-18>
- The Law of Ukraine On Changes in Several Legal Acts of Ukraine on Protection of Animal Wildlife (№ 322-VIII, 09.04.2015) – <http://zakon.rada.gov.ua/laws/show/322-19>
- The Law of Ukraine On Changes in Several Legal Acts of Ukraine on Protection of Biodiversity (№ 323-VIII, 09.04.2015) – <http://zakon.rada.gov.ua/laws/show/323-19>
- The Law of Ukraine On Changes in Several Legal Acts of Ukraine for Implementation of The Convention on the Conservation of European Wildlife and Natural Habitats (№ 1832-VIII, 07.02.2017) – <http://zakon.rada.gov.ua/laws/show/1832-19>
- Order of the Ministry of Ecology on the list of specially protected species in the Kharkiv Oblast (№ 237, 27.06.2018) – <http://zakon.rada.gov.ua/laws/show/z0847-18/sp:max25>
- Order of the Ministry of Ecology on the list of specially protected species in the Donetsk Oblast (№ 333, 11.09.2017) – <http://zakon.rada.gov.ua/laws/show/z1202-17>
- Conservation of the black stork and Conservation of the white stork – <http://www.nas.gov.ua/UA/Messages/news/Pages/View.aspx?MessageID=4121>
- Stork records in Ukraine: a citizen science project – <http://pzf.gis.kh.ua/stork/>
- Order of the Ministry of Ecology on temporary ban for special use of Black and Azov Sea cetaceans

(№328, 20.09.2011) – <http://zakon.rada.gov.ua/laws/show/z1142-11>

- Monitoring of abundance of the European beaver, with citizen contribution. – <http://www.50northspatial.org/ua/modern-approaches-beaver-studies>
- Fauna of Ukraine: conservation categories. Reference book – The 2nd edition. – Kyiv, 2010. – 80 p. – http://kazhan.org.ua/library/rl_2010/rl_2010.pdf
- National Report of Ukraine on Implementation of Memorandum on *Acrocephalus paludicola* – <https://www.cms.int/aquatic-warbler/>
- National Report of Ukraine on Implementation of Memorandum on *Acrocephalus paludicola* – <https://www.cms.int/aquatic-warbler/en/document/national-report-ukraine-1>, <https://www.cms.int/aquatic-warbler/en/document/proposed-amendments-aquatic-warbler-action-plan>
- National Report of Ukraine on the Implementation of Memorandum on *Otis tarda* – <http://bit.ly/2NAvLQQ>, <http://bit.ly/2KZoDLZ>, <http://bit.ly/2KWIs6B>
- Ukraine’s Report on the implementation of AEWA for the period 2012–2014 – <http://bit.ly/2KWrlm>
- EUROBATS Implementation Report of Ukraine, 2018 – <https://bit.ly/32gSaXx>
- ACCOBAMS Implementation Report of Ukraine, 2016 – <https://bit.ly/30C36hX>
- CMS Implementation Report of Ukraine, 2014 – <https://bit.ly/30DLvGI>; 2017 – <https://bit.ly/2NB86PW>
- ROM Bulletin: Results of Regional Ornithological Monitoring – http://www.rom.org.ua/bul_issue.html
- Initial identification of cetacean stocks in the north-western Black Sea (Ukrainian sector) – <http://bit.ly/2MGCNnp>
- EMBLAS II – <http://emblasproject.org/>
- UkrBIN Biodiversity Portal – <http://ukrbn.com/>
- LIFE for Danube Sturgeons – <https://bit.ly/327Nao0>
- Sterlet breeding program in the Chernivtsi National University – <http://ibhb.chnu.edu.ua/profile/user/80>

Other relevant information

At present, licensing for the export/import of CITES specimens is authorized based on the opinion of scientific institutions – officially designated CITES scientific bodies.

Throughout the annual censuses of wintering waterfowl species (“International waterbird census (IWC) in winter”) in the Azov-Black Sea region of Ukraine during 2011–2013, 1 million 116 thousand individuals of 80 waterfowl species were recorded. In 2004–2015, five synchronous waterbird surveys (held in August) were conducted at all key reservoirs. Nearly 1.2 million birds were recorded.

Monitoring programs are chiefly funded by international grants or conducted on a volunteer basis. In particular, a monitoring program on nesting of the black stork is supported by the CICONIA Foundation. In preceding years, the winter and August waterfowl censuses in the Azov-Black Sea region of Ukraine were mainly supported by Wetlands International projects, and currently they are done on a voluntary basis. Cetacean monitoring is supported by the ACCOBAMS Secretariat.

Breeding efforts are in place for certain species. Several individuals of black stork were released at the Wildlife Rehabilitation and Reintroduction Center of the Halytskyi NNP. The “Feldman Ecopark” manages a bat rehabilitation center. The rehabilitation center for brown bears operates at the Synevyr NNP. Breeding of wild animals (saiga antelope *Saiga tatarica*, etc.) is managed by the Askania-Nova Biosphere Reserve.

For *in situ* conservation of the forest genetic resources in Ukraine, the following were added to the state registry and legally protected: 611 genetic reserves of 27 species of woody plants (total area of 23.8 thousand hectares), 4.7 thousand plus trees of 28 species, 141 plus stands of 11 species (total area of 2.1 thousand hectares), and 15.6 thousand hectares of permanent seed tree stands of 42 species.

Roughly, 1.2 thousand hectares of forest plantations were created for *ex situ* preservation of plus trees through vegetative and seed propagation. 1,176.1 hectares therefrom were certified (as of January 1, 2018).

All the mentioned sites are intended for conservation and regeneration of the gene pool and are simultane-

ously a source of material for reforestation, forest plantation and forest selection.

In 2017, 70.0 ha of genetic reserves of 4 species, 25 plus trees of 4 species, 51.8 ha of permanent seed tree stands of 2 species, 2.0 ha of plus stands of 1 species, and 81.0 ha of permanent seed tree plots of 5 species were added to a permanent seed tree database (data as of January 1, 2018).

Relevant websites, web links and files

- Notification: Permits on import and export of samples of wild fauna and flora – <http://bit.ly/2ZoZM8o>
- CICONIA Foundation – <http://bit.ly/2NBbCd6>
- Rehabilitation of animals in “Halytskyi” National Park – <http://bit.ly/2MGmLdc>
- Centre of rehabilitation and reintroduction of wild animals in “Galytskyi” National Park – <http://bit.ly/2PkbAZO>
- Bat Rehabilitation Center of Feldman Ecopark – <http://bit.ly/2LdhypT>
- Brown bear rehabilitation center in “Synevyr” National Park – <http://bit.ly/2NzdsLG>
- The letter of the State Forest Resources Agency № 02-27/ -17, 03.08.2018

Obstacles and scientific and technical needs related to the measure taken

Among the imperative actions are raising awareness (especially of the key decision-makers), creation of effective mechanisms for implementation and monitoring of law enforcement, greening of sectoral policies, in particular towards consideration of ecosystem services and conservation of endangered species. It is necessary to create an analytical system for population status assessment, taking into account monitoring programs of the entire PA network, and to determine the needs and opportunities pertaining to species recovery. The development of a national biodiversity monitoring system is vital (currently, insufficient financial support is the primary problem). The existing monitoring programs concern individual species (or groups of species) at the regional level. Monitoring of the species status in PAs is partially effective.

Authorities that fight the illegal harvesting of rare species face legislative, organizational and financial issues. Thus, listing species into the Red Data Book of Ukraine in the case of large animals (sturgeon, bear, lynx, wildcat, and elk) has positive outcomes only on the PAs that have their own security service (NNPs, nature reserves). Beyond the PAs, protection of animals is the responsibility of game management facilities. In some cases, there is a contradiction between the need to preserve a species and its negative impact on game management (for instance, the lynx takes ungulates that are a source of income for hunters). Control over the takes of protected waterfowl species by hunters is inadequate. Lack of control results in poaching of protected birds of prey, amphibians, reptiles, invertebrates and plants for commercial purposes.

Preparation of action plans on the implementation of international treaties is required.

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

18. Conservation of genetic diversity of cultivated plants, domesticated animals and their wild relatives

A set of legal, regulatory, research, and methodological measures.

In 2011–2015, a program to support livestock and poultry selective breeding programs was in place.

The Decree of the Cabinet of Ministers of Ukraine approved the “Concept of the State Targeted Program on Agricultural Sector Development for the period up to 2020” (2015) to ensure the conservation of genetic diversity of cultivated plant varieties, farm and domesticated animals and their wild relatives, to minimize genetic erosion, and to preserve agrobiodiversity.

According to the FAO Country Programming Framework for Ukraine 2016–2019, the project “Protection and Sustainable Use of Dual-Purpose Breeds in Eastern Europe” is underway. The project is focusing on examining the cattle in Zakarpattia to identify individuals that are phenotypically similar to purebred Carpa-

thian Brown breed, genotyping them and shaping a breeding stock of this breed.

An Information System for Plant Genetic Resources of Ukraine was established. A database of the passport data of the samples of the National Bank of Plant Genetic Resources of Ukraine named “Henofond roslyn” (“Plant gene pool”) was created according to the standards of the international network of gene banks.

Ukraine actively partakes in updating the European Farm Animal Biodiversity Information System (EFABIS). According to the international criteria, information on breeds of cattle, pigs, horses, sheep, and poultry was contributed. The database contains information on the biological features of various breeds. Population indices of breeds are updated annually, according to the State Register of Livestock Breeders. According to the population criteria, data on 27 cattle, 12 pig, 10 horse, 7 sheep, 22 chicken, 9 duck, 9 goose, 2 turkey and 5 quail breeds of Ukraine were entered. The overall number of breeds submitted by Ukraine to EFABIS is 239, and the comprehensiveness of the information on all breeds is 46%.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes
NT 5, ABT 13

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment is based on the analysis of regulatory and reporting documents and the work of the institutions of the National Academy of Agrarian Sciences (NAAS). Relevant institutions, such as the National Center for Plant Genetic Resources of Ukraine within the V.Ya.Yuryev Plant Production Institute of NAAS, the M.V.Zubets Institute of Animal Breeding and Genetics of NAAS and the affiliated Bank of Animal Genetic Resources. The National Bank of Plant Genetic Resources and the National Seed Storage facility are supplied with new specimens.

Relevant websites, web links and files

- Resolution of the Cabinet of Ministers of Ukraine on approval of the Order of spendings foreseen in the national budget for selection programs in livestock and poultry farming in agricultural facilities (№515, 18.05.2011) – <http://zakon.rada.gov.ua/laws/show/515-2011-п>
- Note on the draft resolution of the Cabinet of Ministers of Ukraine on changes in the Order of spendings foreseen in the national budget for selection programs in livestock and poultry farming in agricultural facilities – <http://minagro.gov.ua/node/5045>
- Order of the Cabinet of Ministers of Ukraine on Concept of the National program of agrarian sector development until 2020 (№ 1437-p, 30.12.2015) – <https://www.kmu.gov.ua/ua/npas/248907971>
- FAO Project TCP/RER/3604 Conservation and development of dual-purpose cattle breeds in Eastern Europe – <http://www.fao.org/3/au085ru/AU085RU.pdf>
- Laboratory of Crop Genetic Resources, Yuryev Plant Production Institute of the NAAS – <http://bit.ly/2U75r1S>
- FAO. 2014. Genebank Standards for Plant Genetic Resources for Food and Agriculture. Rev. ed. Rome. – <http://www.fao.org/3/a-i3704e.pdf>
- Collections of Yuryev Plant Production Institute of the NAAS – <http://bit.ly/2MHCFE6>

Other relevant information

Funding the selective breeding program contributed to preservation of livestock of the majority of gene pool

herds. Ukrainian researchers developed a methodological and organizational framework for conservation of the farm animal genetic resources, identified the genetic resource facilities and an operational system thereof, developed draft programs for genetic resources conservation. The network of cryobanks was established.

The National Center for Plant Genetic Resources of Ukraine within the V.Ya.Yuryev Plant Production Institute of NAAS is active: the National Bank of Plant Genetic Resources and the National Seed Storage are being filled with new specimens. Several National Bank collections are of global significance, in particular: the Bakhmut Seedling Research Station of the Institute of Horticulture of NAAS, L.P. Simirenko Pomology Research Station of NAAS, Transcarpathian State Agricultural Research Station; V.Ye. Tairov Institute of Viticulture and Winemaking of NAAS, Institute of Grape and Wine “Magarach”, Institute of Potato Research of NAAS; Institute of Bast Crops of NAAS; Institute of Vegetables and Melons of NAAS; V.Ya.Yuryev Plant Production Institute of NAAS; National Research Center for Seed Science and Variety Studies of the Institute of Genetics and Selection of NAAS, Podiliska Horticulture Research Station of the Institute of Horticulture of NAAS; Ustymivska Research Station of the V.Ya.Yuryev Plant Production Institute of NAAS.

Collections of plant genetic resources represent the diversity of traits and features that can be used for the selection of varieties and hybrids with high crop yields, product quality, and adaptability. In 2013–2017, over 30,000 samples were submitted for utilization in selective breeding, research and other programs. In 2013–2018, field and laboratory studies of genetic resource specimens were conducted in 30 research institutions working on selective breeding, 7.4 thousand sources of valuable traits of crops were identified as sources for breeding. Based on this, 390 plant varieties and hybrids were created and their production was launched. The selection of crops was enriched by a number of new or renewed cultures.

In 2013–2017, 17 registered collections and 280 registered specimens of plant genetic resources were used for breeding and studies in state and private breeding establishments and educational institutions.

In the course of 2013–2017, 32,000 new samples of cultures (over 25,000 of Ukrainian origin) were brought to the National Bank of Plant Genetic Resources. In total, as of late 2017, 148.3 thousand specimens (440 crops, 1,770 species) are stored *ex situ*, including 53.5 thousand specimens of Ukrainian origin.

The National Seed Storage facility was supplemented with 4 800 specimens during 2013–2017. Overall, as of late 2017, 70 thousand specimens (732 species of cultivated plants and their wild relatives) are stored in a viable and genetically authentic state. 32,000 seed samples (136 crops) are stored in the facilities of the Plant Genetic Resources system of Ukraine. Field collections harbor 25.6 thousand specimens of fruits, berries, nuts, ornamental forest crops and grapes, 3.7 thousand specimens of potatoes, 0.1 thousand vegetable crops, 1.2 thousand industrial crops, essential oil and medicinal plants.

During 2013–2017, information on 10 thousand specimens was submitted. Registration of collections and valuable specimens of the plant genetic resources is underway. As of November 1, 2018, 259 collections and 1750 valuable specimens of field crops were registered.

Relevant websites, web links and files

- Program of conservation of local and endangered breeds in Ukraine, 2017–2025 / M.V. Gladiy, Yu. P. Polupan, D. M. Basovsky, et al.. – Sumy, 2018. – 84 p. – http://iabg.org.ua/images/stories/prog_zber.pdf
- Selection, genetic and biotechnological methods of enhancing and conservation of gene pool of animal breeds. 2018. M.V. Gladiy, Yu. P. Polupan,, eds; Zubets Institute, Poltava., 791 p. http://iabg.org.ua/images/poltava_2018.pdf
- The Law of Ukraine on Livestock Breeding (№ 3691-XII, 15.12.1993) – <http://zakon.rada.gov.ua/laws/show/3691-12>
- Regulation (EU) 2016/1012 of the European Parliament and of the Council of 8 June 2016 on zootechnical and genealogical conditions for the breeding, trade in and entry into the Union of purebred breeding animals, hybrid breeding pigs and the germinal products thereof and amending Regulation (EU) № 652/2014, Council Directives 89/608/EEC and 90/425/EEC and repealing certain acts in the area of animal breeding (‘Animal Breeding Regulation’) – <http://data.europa.eu/eli/reg/2016/1012/oj>

- FAO. 2009. Preparation of National Strategies and Action Plans for Animal Genetic Resources. – <http://www.fao.org/3/i0770e/i0770e.pdf>

Obstacles and scientific and technical needs related to the measure taken

There is a need for harmonization of national legislation (particularly, the Law of Ukraine “On Pedigree Cattle Breeding” (1993)) with the Regulation (EU) 2016/1012, development of a national strategy and action plan on genetic resources, creation of a centralized information system, and enhancement of monitoring and control. Creation of a National Center for Animal Genetic Resources in Ukraine is vital. It is necessary to approve the draft programs for the conservation of the farm animals gene pool, as well as the improved implementation of the Concept of the State Targeted Program on Agricultural Sector Development.

The issue of authorship and intellectual property rights pertaining to collections and individual specimens is urgent: for the commercial varieties, the Law of Ukraine “On Protection of Rights to Plant Varieties” and documents of the International Union for the Protection of New Varieties of Plants (UPOV), of which Ukraine is a member, apply. The samples and collections of plant genetic resources require joining Ukraine to the International Treaty on Plant Genetic Resources for Food and Agriculture.

Relevant websites, web links and files

- Law of Ukraine on Protection of Rights to Plant Varieties (№ 3116-XII, 21.04.1993) – <http://zakon.rada.gov.ua/laws/show/3116-12>
- UPOV Lex – <https://www.upov.int/upovlex/en/acts.html>

Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan

19. Enhancing ecosystem resilience to climate change, reducing greenhouse gas emissions through ecosystem-based approaches

A set of legal and regulatory measures.

In 2016, Ukraine ratified the Paris Agreement within the UNFCCC; Article 7 of the Agreement states that “adaptation action should follow a <...> fully transparent approach, taking into consideration <...> ecosystems, <...> with a view to integrating adaptation into relevant <...> environmental policies and actions”, and Article 5 provides for action to conserve and enhance sinks and reservoirs of greenhouse gases, including forests.

In 2016, the Concept of the State Climate Change Policy Implementation until 2030 was approved. The action plan for implementation of the concept stipulates measures to enhance the resilience of certain ecosystems to climate change and increase the absorption of greenhouse gases (GHG) in forestry.

Strategic and policy documents incorporate the objectives focused on the reduction of GHG emissions by increasing forest cover, reducing the area of arable land, and restoring degraded land.

The NSB contains NT 2 that stipulates an increase of forest-covered lands to 17% by 2020. The 2011–2015 NAP has a corresponding paragraph. According to the State Targeted Program “Forests of Ukraine” for 2010–2015, the level of forest-covered lands should have increased to 16.1% by 2015. NT 2 also sets an average reduction of arable land by 5–10% by 2020.

The National Action Plan to Combat Land Degradation and Desertification (2016) includes interventions for restoration and protection of forests and wetlands, combating desertification, and regionalization of land with consideration for the effects of climate change.

In 2017, a pilot project was completed in line with the “Clima East: Conservation and Sustainable Use of Peatlands”. As a result of this project, 2,800 hectares of degraded agricultural peatlands were restored in Chernihiv region, and a Regional Landscape Park Nizhynsky was established.

The process of accounting for natural ecosystems that sequester carbon (carbon sinks) is underway; reduction in GHG emissions is planned. The objective of restoring ecosystems for carbon sequestration needs to

be incorporated into the national goals of reducing GHG emissions.

To fulfill their commitments as part of the Paris Agreement, Ukraine submitted the Intended Nationally Determined Contribution (NDC) on reducing GHG emissions to the UNFCCC (2015).

In 2018, Ukraine's Low Emission Development Strategy up to 2050 was adopted, containing Section 6 "Carbon sequestration and reduction in GHG emissions in the land use and forestry sectors".

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes
NT 2 and ABT 15

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment relies on statistical information and reporting materials. Targets of the NSB and the National Action Plan to Combat Land Degradation and Desertification were not reached. GHG emissions in the LU-LUCF (Land Use, Land-Use Change and Forestry) sector emanate from arable land (ploughed or tilled), pastures, disturbed wetland ecosystems and deforestation. Forests are the primary absorber of GHGs. During 2013–2016, the forest cover of Ukraine did not increase, and in 2016 amounted to no more than 16% (considering the optimal 19–20%). As of 2016, nearly 70.8% of the territory of Ukraine was agricultural land; arable land covers 53.9% of the country's territory. The area of ploughed land does not diminish. Interventions aiming to create and restore hayfields and pastures are carried out in various regions of Ukraine, but their scope is limited (overall in Ukraine, 3 500 hectares were restored). Conservation and rehabilitation efforts for degraded, technogenically contaminated and disturbed lands are implemented inconsistently, and their extent is insufficient (195 ha of disturbed land were recultivated and 7 600 hectares of degraded lands were conserved); see Measure 11.

Ukraine's contribution to GHG reduction (NDC) implies development and implementation of measures to enhance GHG absorption, but does not include measures pertaining to the restoration of natural ecosystems to lower GHG emissions. Ukraine's NDC does not cover the LULUCF sector. The Low Emission Development Strategy contains projections on the GHG sequestration by forests, but does not provide for ecosystem restoration measures.

The ratification of the Paris Agreement and the adoption of the Concept of the State Climate Change Policy Implementation until 2030 emphasize the urgency of efforts to adapt to climate change. However, the most vulnerable ecosystems that require adaptation and restoration have not been identified; no ecosystem adaptation goals were set; no national strategy on adaptation has been developed; the state budget lacks sufficient resources to undertake relevant activities. Adaptation measures are fragmentary, carried out at the level of communities and individual PAs.

GHG emission reduction plans consider the contribution of natural ecosystems that sequester carbon. However, the challenge of restoring ecosystems for carbon dioxide sequestration is not sufficiently addressed by the national GHG emission reduction targets.

Relevant websites, web links and files

1. The Law of Ukraine on Ratification of the Paris Agreement (1469-VIII, 14.07.2016)– <https://zakon.rada.gov.ua/laws/show/1469-19#n2>
- Intended Nationally Determined Contribution by Ukraine – <https://bit.ly/2MH3atk>
 - LULUCF – <http://bit.ly/2PmJ2yN>

- Clima East Project “Conservation & Sustainable Use of Peatlands” in Ukraine – <https://bit.ly/2PbSu7V>
- Review of the implementation state of the National Action Plan for combating land degradation and desertification. – <https://menr.gov.ua/news/32333.html>
- State Forest Resources Agency of Ukraine. The open data report, 2016 – <http://bit.ly/2ZrD2Vj>
- Lands of Ukraine, 01.012016– <https://bit.ly/2ruspm2>
- National report on the state of the environment in Ukraine in 2015. – Kyiv: Ministry of Ecology and Natural Resources of Ukraine, 2017. – 308 p. – <https://menr.gov.ua/news/31768.html>
- Intended Nationally Determined Contribution by Ukraine – <https://bit.ly/2MH3atk>
- Ukraine 2050 Low Emission Development Strategy. – <https://bit.ly/2uLX3Zm>

Other relevant information

Peat production has a substantial impact on GHG emissions. Since 1990, the area and volume of peat extraction decreased several times, but over the course of 2013–2016, there was no reduction in peat production. The strategic documents do not incorporate the goals of reducing peat production and restoring wetlands; however, the “Clima East” pilot project for peatland restoration was conducted, and their contribution to GHG emissions was estimated.

The NDC of Ukraine was determined “critically unsatisfactory” and inconsistent with the objectives of the Paris Agreement, since it only anticipates an increase in emissions, therefore requiring revision.

Ukraine submitted their NDC (Intended Nationally Determined Contribution) to the UNFCCC under the Paris Agreement in 2015. In 2018, Ukraine was among the early birds to submit the Low Emission Development Strategy (LWDS) up to 2050 to the Secretariat of the UNFCCC (posted on July 30, 2018 <https://unfccc.int/process/the-paris-agreement/long-term-strategies>). In particular, the strategy contains a Section 6 “Carbon sequestration and reduction in GHG emissions in the land use and forestry sectors”.

NGOs that are part of the NGO Working Group on climate change (“Ukrainian climate network”) play a major role in the implementation of climate change adaptation measures, participation in climate policy formulation, and development of legislation at both national and international levels.

Relevant websites, web links and files

- Climate Action Tracker: Ukraine – <https://climateactiontracker.org/countries/ukraine>
- Intended Nationally Determined Contribution by Ukraine – <http://bit.ly/2KYFQ8d>
- LULUCF – <http://bit.ly/2PmJ2yN>
- Ukraine 2050 Low Emission Development Strategy – <https://menr.gov.ua/news/31815.html>
- <https://climateforumeast.org/news/88/CFE-II-project-results-in-Ukraine>
- <http://climategroup.org.ua/wp-content/uploads/2017/09/Case-studiesClimateChangeAdaptationUkraine.pdf>
- Ukrainian Climate Network – <http://climategroup.org.ua>

Obstacles and scientific and technical needs related to the measure taken

There is a need to identify ecosystems that are most vulnerable to climate change, and to develop a research funding program for studying the impacts of climate change on natural ecosystems.

No data is available on the extent of carbon sequestration by marine and steppe ecosystems. It is essential to develop standardized accounting methods for GHG absorption by various types of natural ecosystems in Ukraine.

Describe a measure taken to contribute to the implementation of your country's national biodiversity strategy and action plan

20. Legal and scientific principles of collection, monitoring and open data sharing in the field of biodiversity and its conservation, open cadastres and databases

A set of legal and regulatory measures focused on establishing environmental monitoring and providing the public and the main stakeholders with open access to cadastres and databases of natural resources, wildlife, pollution, protected areas, etc.

NT 6 concerns the development of a national system of natural resource cadastres and state statistical reports on natural resource use, aiming to ensure sustainable use of natural resources.

The NAP 2011–2015 envisaged measures on ensuring automation of maintenance and exploitation of the state cadastres of natural resources, statistical reporting pertaining to environmental protection, particularly to ensure public access; development of the Concept of the National Environmental Information System based on cadastres, emission inventories, etc.

The government's Medium-Term Priority Action Plan for 2020 defines Goal 2 “Effective Governance”: proper and effective monitoring of conservation of rare species and habitats; environmental monitoring. In autumn 2018, the Cabinet of Ministers of Ukraine approved the State Water Monitoring Procedures, which, *inter alia*, sets the principles for monitoring aquatic biota.

Nature reserves, biosphere reserves and national nature parks maintain the ‘Chronicles of Nature’ (*Litopysy pryrody*), which are the primary format of summarizing the research findings and observations on the status quo and changes occurring to natural complexes within protected areas.

Since 2013, the “Public cadastral map” has been up and running on the official website of the State Land Cadastre (see Measure 11), and the geoportal “Water resources of Ukraine” was launched (see Measure 2).

In 2013, the unified information and analytical system “Dovkillya Ukrainy” (*Environment of Ukraine*) was established; it contains information on the Red Data Book of Ukraine, the Green Data Book of Ukraine, and the inventories of flora and fauna (the system requires upgrading).

Among the practical measures focused on collecting, accumulating, sharing and promoting knowledge on protection and conservation of biodiversity are the following:

- participation of Ukrainian research institutions and experts in international projects on studying and conserving biodiversity, along with expert participation in implementing the EU Directives (Birds, Habitats, Water Framework Directive, Marine Strategy Framework Directive) and other regulatory efforts in line with the Ukraine-EU Association Agreement, including EBCC Atlas of European Breeding Birds, European Mammal Atlas,
- assessment of the status of species listed in the IUCN Red List,
- enhancement of environmental monitoring of the Black Sea (EMBLAS II),
- Policy-oriented marine research in the Southern European Seas (PERSEUS),
- European Neighborhood and Partnership Instrument (ENPI) East Countries Forest Law Enforcement and Governance (FLEG) II (ENPI East FLEG II),
- Support to Ukraine in approximation of EU Environmental Acquis (APENA), the Environmental Protection of International River Basins Project (EPIRB),
- UNDP/GEF/OSCE project “Enabling transboundary co-operation and integrated water resources management in the Dniester River Basin”, and others.

Scientific knowledge is disseminated by scientists and amateurs.

A website for collection of data and promotion of birdwatching has been active since 2015.

In 2016, the Ukrainian Scientific Center of Ecology of the Sea (UkrSCES) was granted the status of the National Oceanographic Data Center within the framework of the International Oceanographic Data and Information Exchange program of the Intergovernmental Oceanographic Commission of UNESCO.

In 2017, upon the initiative of the scientific community and with the support of the I.I. Schmalhausen Institute of Zoology of NAS of Ukraine, the UkrBIN (Ukrainian Biodiversity Information Network) open network for biodiversity data collection and sharing was launched. For now, the UkrBIN is the only platform that actively reaches out to the public, disseminates biodiversity knowledge (rapid field guides), and encourages public participation in observations of alien and invasive species. The UkrBIN data is transferred to the Catalogue of Life and the European Alien Species Information Network (EASIN). The UkrBIN also plans to integrate Ukraine's biodiversity data into the Global Biodiversity Information Facility (GBIF).

Since 2017, the development of the online portal Data Center “Biodiversity of Ukraine” (National Museum of Natural History of NAS of Ukraine) has been underway.

For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes
NT 1, NT 5, NT 6, ABT 8, ABT 11, ABT 12, ABT 14, ABT 19

Assessment of the effectiveness of the implementation measure

- Measure taken has been effective
 Measure taken has been partially effective
 Measure taken has been ineffective
 Unknown

Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above

The assessment is based on the analysis of information resources, regulatory and reporting materials. The interventions envisaged in the NAP were partially implemented. The existing cadastres and databases require further upgrading and development.

Relevant websites, web links and files

- National Action Plan for Environment Protection for 2011–2015 (approved by the order of the Cabinet of Ministers of Ukraine № 577-p, 25.05.2011) – <http://zakon.rada.gov.ua/rada/show/577-2011-p>
- Resolution of the Cabinet of Ministers of Ukraine on approval of the Mid-Term Plan of priority activities by the Government until 2020 and the Priority Plan for the Government on 2017 (№ 275-p, 03.04.2017) – <http://zakon.rada.gov.ua/laws/show/275-2017-p>
- Environmental monitoring system has been launched (published on 12.11.2013) – <https://bit.ly/2MEsNuR>
- The report on the implementation state of measures of the National Action Plan for Environment Protection for 2011–2015 – <https://bit.ly/342u2tf>
- Research Project “Creating museum inforesources backing regional action plans for biodiversity”, national ID number 0116U002134 – <https://bit.ly/2Pi6vBl>
- Order of the Cabinet of Ministers of Ukraine on adoption of the Concept of the all-national “Open Environment” automated system (№ 825-p, 07.11.2018) – <http://zakon.rada.gov.ua/laws/show/825-2018-p>
- European Integration Portal. Environment – <https://eu-ua.org/en/environment>
- Ukraine – contribution to EBBA2 and a path towards modern European bird monitoring – <https://bit.ly/329fQwy>
- EMBLAS – Environmental monitoring in the Black Sea – <http://emblasproject.org/>
- Policy-oriented marine Environmental Research for the Southern European Seas. PERSEUS and Scientists – <https://bit.ly/30ysKUF>
- ENPI FLEG II: Conservation of forest biodiversity: harmonization of legal framework between Ukraine and the European Union concerning special protected areas (published on 21.07.2014) – <http://www.enpi-fleg.org/news/improving-forest-biodiversity-conservation-legal-framework-in-ukraine/>

- APENA. Conservation of the environment – <http://bit.ly/2L0LOWi>
- EPIRB – Environmental Protection of International River Basins Project – <http://blacksea-riverbasins.net/en/project-synopsis>
- UkrBIN: Ukrainian Biodiversity Information Network – <http://ukrbin.com>
- UkrBIN: Rapid field guides – Quick field guides – <http://ukrbin.com/downloads.php?catid=1>
- “Birds of Ukraine ” Ukrainian Birdwatching Community – <http://uabirds.org>
- Data Centre “Biodiversity of Ukraine” – <http://dc.smnh.org/biodiversity-data-centre.html>

Other relevant information

The implementation of the provisions of the EU Directives into national legislation (protection and sustainable development of the Dniester River basin, creation of protection zones around the nests of rare bird species) was facilitated by the extensive expert groundwork.

Individual monitoring studies are conducted by research institutions.

The Institute of Hydrobiology of the NAS of Ukraine is conducting a research “Studying biodiversity and mechanisms of functioning of freshwater ecosystems as the foundation for developing technologies of bioindication, monitoring, and management of the ecological status of water bodies”.

The Research Institute “Ukrainian Scientific Center of Ecology of the Sea” of the Ministry of Ecology, (UkrSCES) conducts environmental monitoring of the Black Sea and the Sea of Azov, including meteorological, hydrophysical, hydrochemical, hydrobiological and geocological expeditionary observations, identification of chemical and radioactive pollution, studying the biological effects of marine pollution, and monitoring of cetaceans. The UkrSCES gained the status of the Regional Activity Centre on Pollution Monitoring and Assessment of the Black Sea in line with implementation of the Bucharest Convention.

As a part of their program activities, I. I. Schmalhausen Institute of Zoology of NAS of Ukraine conducts scientific research on rare and endangered animals and takes part in two programs for monitoring wetland birds, namely the “International waterbird census (IWC) in winter” and the “August waterbird census”.

The Institute of Fisheries and Marine Ecology of the State Fisheries Agency of Ukraine carries out monitoring studies on the assessment of status of aquatic bioresources in the Azov-Black Sea Basin.

The Ukrainian State Forest Management Planning Association “Ukrderzhlisproekt” developed afforestation plans for 22 regions of Ukraine.

Relevant websites, web links and files

- Resolution of the Cabinet of Ministers of Ukraine on approval of the Statute of the National System of Environmental Monitoring (№ 391, 30.03.1998) – <http://zakon.rada.gov.ua/laws/show/391-98-п>
- Agreement between the Cabinet of Ministers of Ukraine and the Government of the Republic of Moldova on Cooperation in Protection and Sustainable Development of the Dniester River basin, 29.11.2012 – http://zakon.rada.gov.ua/laws/show/498_165-12#n2
- Order of the Ministry of Ecology on additional measures on conservation of endangered plants and animals (№ 557, 29.12.2016) – https://menr.gov.ua/files/uploads/nakaz_557_29122016.pdf
- Medinets V. I., Ivanytsia V. O. Marine research development ways in Ukraine // Man and environment. Issues of neoecology. – 2018. – № 1–2. – P. 6–20. – <http://bit.ly/2NBd8Mk>
- Forest planting plans online by the Ukrainian Forest Planning Service – <http://bit.ly/2NBcKxm>

Obstacles and scientific and technical needs related to the measure taken

Access to information on natural resources, emissions, transboundary pollution, protected areas, and ecological network sites is limited.

The State Targeted Program for Environmental Monitoring was adopted in 2012. However, the new program was not approved. The legal framework that defines and regulates the monitoring system, including the regu-

<p>lation “On State Environmental Monitoring System” (1998) is obsolete.</p> <p>The main obstacles for the implementation of the measure are the lack of funding towards research, open cadastres, monitoring, and scientific support. Engaging experts and the public in decision-making for nationwide monitoring is fundamental. There is a need to refine the coordination and optimize the distribution of responsibilities among the main entities involved in monitoring. A number of initiatives are community-based and require resource mobilization.</p> <p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Resolution of the Cabinet of Ministers of Ukraine on approval of the National Program of Environmental Monitoring (№ 1376, 05.12.2007) – https://zakon.rada.gov.ua/laws/show/1376-2007-п • Resolution of the Cabinet of Ministers of Ukraine on approval of the Statute of the National System of Environmental Monitoring (№ 391, 30.03.1998) – http://zakon.rada.gov.ua/laws/show/391-98-п
<p>Describe a measure taken to contribute to the implementation of your country’s national biodiversity strategy and action plan</p> <p>21. Biosafety and genetically modified organisms</p> <p>In order to implement the Ukraine-EU Association Agreement, the draft Law of Ukraine “On the State System of Biosafety at the Time of Creating, Testing, Transporting, and Using Genetically Modified Organisms” was formulated, taking into account the requirements of the EU Directive 2001/18/EC on the deliberate release into the environment of genetically modified organisms (GMOs) and the Regulation (EC) № 1946/2003 on transboundary movements of genetically modified organisms. The bill takes into consideration the requirements of the mentioned EU regulations on the release of GMOs into the environment.</p>
<p>For the implementation measure, please indicate to which national or Aichi Biodiversity Target(s) it contributes</p> <p>NT 2, NT 7</p>
<p>Assessment of the effectiveness of the implementation measure</p> <p><input type="checkbox"/> Measure taken has been effective</p> <p><input checked="" type="checkbox"/> Measure taken has been partially effective</p> <p><input type="checkbox"/> Measure taken has been ineffective</p> <p><input type="checkbox"/> Unknown</p> <p>Please explain the selection and where possible indicate the tools or methodology used for the assessment of effectiveness above</p> <p>The draft law was submitted for consideration to the relevant central executive bodies.</p> <p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • The web-site of the Ministry of Ecology. Biosafety – https://menr.gov.ua/news/32590.html
<p>Other relevant information</p> <p>The main legislative act of Ukraine that governs the management of GMOs is the Law of Ukraine “On the State System of Biosafety at the Time of Creating, Testing, Transporting, and Using Genetically Modified Organisms” (2007). This Law regulates the relations between the executive bodies, producers, suppliers, developers and consumers of GMOs and products manufactured using technologies that involve handling GMOs, while ensuring biological and genetic safety.</p> <p>To implement the Law, a few regulations were adopted.</p> <p>Resolution № 701 of the Cabinet of Ministers of Ukraine (dated July 11, 2013) approved the Regulations on</p>

the scientific and methodological center for GMO testing.

Resolution № 700 of the Cabinet of Ministers of Ukraine (dated July 11, 2013) approved the Regulation on a network of testing laboratories to determine GMO content in products.

Relevant websites, web links and files

- The Law of Ukraine on the State System of Biosafety at the Time of Creating, Testing, Transporting, and Using Genetically Modified Organisms (№ 1103-V, 31.05.2007) – <https://zakon.rada.gov.ua/laws/show/1103-16>
- Resolution of the Cabinet of Ministers of Ukraine on approval of the Order of permitting on testing genetically modified organisms in open systems (№ 308, 02.04.2009) – <https://zakon.rada.gov.ua/laws/show/308-2009-п>
- Resolution of the Cabinet of Ministers of Ukraine on approval of the Order of permitting on transit of unregistered genetically modified organisms (№ 423, 28.04.2009) – <https://zakon.rada.gov.ua/laws/show/423-2009-п>
- Resolution of the Cabinet of Ministers of Ukraine on approval of the Statute of the Research center on testing genetically modified organisms (№ 701, 11.07.2013) – <https://zakon.rada.gov.ua/laws/show/701-2013-п>
- Resolution of the Cabinet of Ministers of Ukraine on approval of the Statute of the network of testing laboratories for identification of genetically modified organisms in products (№ 700, 11.07. 2013) – <https://zakon.rada.gov.ua/laws/show/700-2013-п>
- Order of the Ministry of Ecology on approval of Criteria for assessment of potential impact of genetically modified organisms on environment (№ 36, 07.02. 2011) – <https://zakon.rada.gov.ua/laws/show/z0247-11>

Section III. Assessment of progress towards the Aichi Biodiversity Targets at the national level

The National Action Plan for Environment Protection for 2011–2015 was developed and adopted in pursuance of achieving the NSB by 2020. The subsequent 5-year NAP (2016–2020) was developed by the Ministry of Ecology and Natural Resources of Ukraine; however, due to some circumstances, it was not approved. Nevertheless, in the following years (2016–2018), Ukraine implemented a set of measures consistent with the implementation of the CBD and the Strategic Plan for Biodiversity 2011–2020, therefore coherent with the twenty Aichi Biodiversity Targets. Hence, it can be stated that Ukraine has overperformed relative to what was planned under the NSB. This fact justifies the decision of the compilers to execute the report in alignment with the Aichi targets instead of the national targets.

ABT 1 – Biodiversity awareness
Category of progress towards the implementation of the selected target: <input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target <input checked="" type="checkbox"/> Progress towards target but at an insufficient rate <input type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown
Date the assessment was done: 2018-11-05
Additional information Correspondence to national targets and measures: NT 1, NT 7, Measure 1. The key challenge was to emphasize the biodiversity issues among the “environmental awareness”, “environment”, “environmental protection measures”, and other general wording used in publications and analytical papers. The cross-sectoral nature and subordination of information dissemination and education measures to many conventions and agreements create overlapping areas of responsibility. Nonetheless, there is a lack of focus on biodiversity and the causes of its loss. The subject of biodiversity may be touched upon in surveys on sustainable development, eco-labeling, climate change, and pollution- and waste-related issues. However, it is virtually impossible to monitor the cause-and-effect relationship between the specific actions and their impact on awareness reliably (for instance, ‘creation of X visitor centers resulted in involvement of Y persons and a Z% increase in nationwide awareness level’). Moreover, the comprehension of the ‘biodiversity’ concept is not the only factor for consideration when assessing public awareness. Willingness to act is a much more suggestive indicator of change, and it can be measured in the credibility of environmental initiatives, willingness to invest in environmental problem solving, participation in environmental movements, etc. Analytical reports may serve as a data source for monitoring.
Indicators used in this assessment The following indicators were used for this assessment: availability of a national environmental information system and progress in its creation, regular publishing of reports and other reporting information, availability of environmental advertising, assessment of citizens’ environmental awareness, strategic steps towards environmental education, development of a network of environmental education centers, and general information on thematic events and activities in mass media.
Relevant websites, web links and files <ul style="list-style-type: none">• Environmental Profile of the Ukrainian Citizen – https://bit.ly/30DHhhJ• Suggestions of Ukrainian Population on Sustainable Development – https://bit.ly/2zk8DxB

<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input checked="" type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>There is no systematic monitoring of public awareness pertaining to biodiversity. Several surveys investigated public concern for the environment, understanding of environmental issues and possible actions to address them. However, there is a lack of regular surveys focusing on biodiversity with stratification of respondents by occupation, age, etc.</p> <p>National reporting on public awareness and participation in decision-making calls for a more structured approach in order to document the progress in terms of biodiversity.</p> <p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • https://dif.org.ua/article/stavlennya-naselelnya-do-pitan-ekologii • http://epl.org.ua/announces/stavlennia-naselelnia-do-pytan-okhorony-dovkillia/ • https://www.kiis.com.ua/?lang=ukr&cat=reports&id=772&page=1 • http://www.rac.org.ua/uploads/reviews_archive/2018/uk/10_Oct_2018_ukr.pdf
<p>ABT 2 – Biodiversity mainstreaming</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input type="checkbox"/> On track to achieve target</p> <p><input checked="" type="checkbox"/> Progress towards target but at an insufficient rate</p> <p><input type="checkbox"/> No significant change</p> <p><input type="checkbox"/> Moving away from target</p> <p><input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 4, NT 7, Measures 2, 3, 4.</p> <p>Ukraine has a long-established ramified system of national environmental legislation, in particular referring to biodiversity. In 2013–2017, the main legal act directly linked to the CBD was the Ukraine-European Union Association Agreement (http://zakon.rada.gov.ua/laws/show/984_011), which entered into force on September 1, 2017. It provides a framework for all new legislation that is complementary to European law and considers modern environmental principles, including biodiversity conservation. Certain changes are also affiliated with enhanced cooperation with NATO.</p> <p>A number of regulatory acts supported the adoption and enactment of the Law of Ukraine “On Environmental Impact Assessment”. This law entails mandatory public discussions on various projects, but there is no information on the role biodiversity data might play in decision making. Conservation of natural resources and ensuring the right of people to live in a clean environment is included in the Medium-Term Government</p>

<p>Priority Action Plan for the period until 2020 (Objective 2 - Effective Governance). Furthermore, the Law “On Strategic Environmental Assessment” has recently come into force.</p>
<p>Indicators used in this assessment</p> <p>Analysis of biodiversity regulations served as a basis for the assessment.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Association Agreement between the European Union and its Member States and Ukraine – http://zakon.rada.gov.ua/laws/show/984_011 • Geoportal “Water resources of Ukraine – http://map.davr.gov.ua:44481 • https://rm.coe.int/updated-list-of-officially-adopted-emerald-sites-novembre-2017-/168076d59f
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input checked="" type="checkbox"/> Monitoring related to this target is adequate</p> <p><input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>The State Strategy for Regional Development and the Action Plan on Implementation of the EU-Ukraine Association Agreement envisage monitoring; it is also among the performance indicators of regional state administrations. Sustainable Development Goals also outline progress indicators.</p> <p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Sustainable Development Goals: Ukraine. National baseline report. – K.: Ministry of economic development and trade of Ukraine, 2017. – 166 p. – https://bit.ly/2zzD8Ql
<p>ABT 3 – Incentives and subsidies</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input type="checkbox"/> On track to achieve target</p> <p><input checked="" type="checkbox"/> Progress towards target but at an insufficient rate</p> <p><input type="checkbox"/> No significant change</p> <p><input type="checkbox"/> Moving away from target</p> <p><input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 4, NT 5, NT 6, Measure 5.</p> <p>The basis for the assessment were the analysis of the legal framework and related developments pertaining to economic incentives for greening the industries, lending programs and financial support of the EBRD and other donors, and other analytical instruments, including statistics of the State Agency on Energy Efficiency and Energy Saving of Ukraine, data provided by the Organisation for Economic Co-operation and Develop-</p>

<p>ment (OECD) platform, etc.</p> <p>Development of alternative energy upon introducing the “green” (feed-in) tariff shows a controversial impact on biodiversity.</p> <p>Ukraine has several loan programs supported by international donors, the majority of them related to alternative energy sources and energy efficiency. The “Warm Loans” state program for housing has been operating since 2014 (such loans are provided by 4 banks).</p> <p>Ukraine is showing progress in standardization and certification of production in accordance with the ISO standards, in particular ISO 14001 (environmental management systems). Thereby, in 2016, the number of successfully passed certification procedures increased by 185% compared to 2015. The EU’s “Greening Economies in the Eastern Neighbourhood” (EaP GREEN) program was launched to support the greening of small and medium-sized enterprises and conducting of strategic environmental assessment. However, the positive impact of certification on biodiversity is unclear.</p> <p>Among the regulations harmful for biodiversity that were cancelled during the reporting period was the countermand Order of the Ministry of Agrarian Policy and Food of Ukraine (№ 143, 11.04.2016) that revoked the Order of the State Forestry Committee of Ukraine (№ 121, 11.12.1997), which established the bonus payment procedure for shooting wolves.</p>
<p>Indicators used in this assessment</p> <p>The indicators were as follows: volume of subsidies granted or suspended, amount of loans that affect biodiversity conservation, and data on their use. The assessment is complicated by the variable transparency levels of economic policy in different sectors: it is sufficient for the agricultural sector, but low for industry and conventional energy production. In general, preferential loans, environmental insurance, excise duty, and the system of grants and subsidies are either underdeveloped or their effectiveness cannot be determined. During the reporting period, the tax incentive mechanisms for biodiversity conservation were not brought into force.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • State Support of the Energy Saving – http://saee.gov.ua/uk/consumers/derzh-pidtrymka-energozabespechenya • ISO Survey of certifications to management system standards – https://bit.ly/2Gzune7 • “Greening Economies in the European Union's Eastern Neighbourhood” (EaP GREEN) – http://www.recpc.kpi.ua/ua/projects-ua/eap-green/project-in-ukraine • Order of the Ministry of Agrarian Policy and Food of Ukraine № 143, 11.04.2016 – http://zakon.rada.gov.ua/laws/show/z0641-16
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input checked="" type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>ABT 4 – Sustainable production and consumption</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input type="checkbox"/> On track to achieve target</p>

<input checked="" type="checkbox"/> Progress towards target but at an insufficient rate <input type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown
Date the assessment was done: 2018-11-05
Additional information <p>Correspondence to national targets and measures: NT 2, NT 4, NT 6, NT 7, Measures 5, 6, 8, 9, 10, 11, 12.</p> <p>The reporting period was marked by a number of legislative acts adopted to encourage the implementation of sustainable production and consumption measures. The Laws of Ukraine “On Energy Efficiency of Buildings” and “On Commercial Accounting of Thermal Energy and Water Supply” were adopted to promote sustainable energy consumption in buildings. The National Strategy for Waste Management in Ukraine until 2030 was approved. Moreover, the bill “On Sustainable Development Strategy of Ukraine until 2030” was drafted and submitted to the Parliament. A framework for sustainable public procurement has been developed, and eco-labeling is being introduced. Nevertheless, the resource- and energy-intensive industries still play an important role in shaping Ukraine's gross national income. Notably, sales (and hence, extraction) of mining industry products have been increasing by 15–30% annually since 2015 (http://ukrstat.gov.ua/operativ/operativ2013/pr/iopdp/iopdp_u/iopdp1215_u.htm).</p>
Indicators used in this assessment <p>Indicators include availability of laws and regulations promoting sustainable production and consumption; renewable energy sector in total energy generation; number of facilities generating electricity under the “green” (feed-in) tariff; number of projects on energy efficiency and renewable energy; percentage of FSC certified forests; structure and dynamics of commercial catches of aquatic bioresources by year; statistics on farming of native fish species; percentage of agricultural and arable land; statistics on air pollutant emissions from stationary sources of pollution; progress in achieving objectives set by NT 6 of the NSB.</p>
Relevant websites, web links and files <ul style="list-style-type: none"> • Law of Ukraine “On Energy Efficiency of Buildings” – http://zakon.rada.gov.ua/laws/show/2118-19 • Law of Ukraine “On Commercial Accounting of Thermal Energy and Water Supply” – http://zakon.rada.gov.ua/laws/show/2119-19 • The National Strategy for Waste Management in Ukraine until 2030 (approved by the order of the Cabinet of Ministers of Ukraine 08.11.2017 № 820-p) – https://zakon.rada.gov.ua/laws/show/820-2017-p • Draft Law, On Sustainable Development Strategy of Ukraine until 2030 – http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=64508 • Eco-labeling and public procurements – https://menr.gov.ua/news/32688.html
Level of confidence of the above assessment <ul style="list-style-type: none"> <input type="checkbox"/> Based on comprehensive evidence <input checked="" type="checkbox"/> Based on partial evidence <input type="checkbox"/> Based on limited evidence
Please provide an explanation for the level of confidence indicated above <p>Data on the above-mentioned indicators are only partially available.</p>
Adequacy of monitoring information to support assessment <ul style="list-style-type: none"> <input type="checkbox"/> Monitoring related to this target is adequate <input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue) <input checked="" type="checkbox"/> No monitoring system in place

Monitoring is not needed

ABT 5 – Habitat fragmentation and degradation

Category of progress towards the implementation of the selected target:

- On track to exceed target
 On track to achieve target
 Progress towards target but at an insufficient rate
 No significant change
 Moving away from target
 Unknown

Date the assessment was done: 2018-11-05

Additional information

Correspondence to national targets and measures: NT 2, NT 5, NT 7. Measures 7, 15, 16.

Increasing forest-covered lands to 17% of the country's area by 2020 is among the key measures corresponding to ABT 5. This measure (afforestation), along with the volume of reforestation, is the primary indicator for reaching ABT 5 in numerous reporting documents. Nonetheless, today it is evident that growing forest cover in Ukraine does not balance the decrease in degradation or destruction of natural habitats. Newly planted forests cannot make up for the loss of the old-growth forest. Moreover, to achieve the desired percentage, afforestation has been conducted in the steppe areas. Such actions resulted in the destruction and deterioration of native grassland ecosystems, which are among the most fragmented and most rapidly degrading in Ukraine. In the past, steppes occupied nearly 40% of Ukraine's territory; at present, they constitute at most 3% of the original distribution area and are highly fragmented.

The Habitats Directive regulates the steps for reaching ABT 5. Implementation of the Directive is among the requirements of the EU-Ukraine Association Agreement, including the Action Plan on Implementation of the Association Agreement (2017); in particular, task 1710 mentions "Preparing a register of territories, public disclosure of these territories, and setting priorities of their management...".

Among the outputs of this task, the National Habitat Catalogue of Ukraine was prepared; further developments regarding the methodology and organizational and technical foundations are envisaged.

Accomplishing ABT 5 is facilitated by measures directed at expanding the extent of nature conservation areas, including the establishment of the Emerald Network and the ecological network, enlarging the Nature Reserve Fund, and restoration of wetlands (see the assessment of progress towards ABT 11).

Indicators used in this assessment

Indicators were the following: area of degraded, fragmented or destroyed habitats and comparison of the rates of habitat loss with previous years' data. However, such data is not available; instead, there are only indirect indicators on hand. Thus, forests constitute the largest portion of natural habitats and amount to roughly 14.5 to 16% of Ukraine's territory, while the remaining natural ecosystems add up to only 6–9% of the territory. Hence, forest exploitation rates may correlate with degradation rates of natural habitats.

Relevant websites, web links and files

- [Parnikoza I., Vasiliuk A. Ukrainian steppes: current state and perspective for protection// Annales Universitatis Mariae Curie-Skłodowska. Sectio C. – 2011. – 66 \(1\). – P. 23–37.](#)
- [Kolomytsev, G., Vasyliuk, O. Spatial Distribution of Steppe Ecosystems in the Eastern Ukraine. Visnyk Natsionalnoho Naukovo-Pryrodnychoho Muzeju. – 2013. – № 11, – P.87–92.](#)
- [Burkovsky, O., Vasyliuk, O., Yena, A., Kuzemko, A., Movchan, Ya., Moysienko, I., Sirenko, I. The last steppes of Ukraine: To be or not to be? – VEL, NECU, 2013. – 40 p.](#)

<ul style="list-style-type: none"> • Plyha, A. Savran Reserve, potato field instead of old oak forests – https://bit.ly/2zo5VXR • Action Plan for the Implementation of the Association Agreement between Ukraine, of the one part, and the European Union, the European Atomic Energy Community and their Member States, of the other part (approved by the order of the Cabinet of Ministers of Ukraine № 1106, 25.10.2017) – https://zakon.rada.gov.ua/laws/show/1106-2017-п
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input type="checkbox"/> Based on partial evidence</p> <p><input checked="" type="checkbox"/> Based on limited evidence</p>
<p>Please provide an explanation for the level of confidence indicated above</p> <p>Assessment relies on limited data. Considering the lack of information on the spatial distribution of habitats and the degradation of particular ecosystems, the assessment of indicators was complicated.</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input checked="" type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>ABT 6 – Sustainable fisheries</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input type="checkbox"/> On track to achieve target</p> <p><input checked="" type="checkbox"/> Progress towards target but at an insufficient rate</p> <p><input type="checkbox"/> No significant change</p> <p><input type="checkbox"/> Moving away from target</p> <p><input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 5, NT 6, NT 7, Measure 9.</p> <p>Current legislation provides for sustainable use of aquatic bioresources (especially, the Law of Ukraine “On Fishery, Commercial Fishing, and Protection of Aquatic Bioresources” (2010), the Procedure for the special use of aquatic bioresources in internal fish-farming water bodies (parts thereof), inland sea waters, territorial sea, exclusive marine economic zone and on the continental shelf of Ukraine, and the relevant orders of the Ministry of Agrarian Policy and Food of Ukraine). Nevertheless, the practical implementation of the security measures was only partially effective. On the other hand, scientific assessment of the status of marine fish stocks and international fisheries regulations are the areas showing the most progress.</p> <p>The intensity of fisheries is shaped by economic aspects, and thus requires economic means of regulation. Hence, taking into account the commercial catch rate during distributing limits for vessels on the Dnipro reservoirs led to a catch increase by 33% in 2017 (Buzevich, unpublished). Progress in this area requires focusing on the socio-economic situation in fishing communities and their interest in the long-term sustainability of commercial fishery resources. According to the requirements of the active legislation, it is important to increase the influence of fishermen professional associations on decision making in regulation of fisheries. It is necessary to reserve fishing grounds for use by fishing associations during long-term periods (10–25 years). Moreover, a regulatory framework is required to provide certain marine zones for farmers to stimulate the replacement of commercial fishery in coastal communities with aquaculture.</p>

<p>Indicators used in this assessment</p> <p>Main indicators for assessing fishery as a factor affecting biodiversity: composition of commercial catches, population structure indicators, dynamics of total commercial stock.</p> <p>Only three of the nine most important target fishery species in the Black Sea are harvested at the optimum allowable level: the Azov anchovy, rapana, and sprat. The stocks of such species as the piked dogfish, thorn-back ray and turbot are in extremely poor condition due to poaching. However, according to Ukrainian experts, the population of turbot increased substantially in the past three years. The sturgeon populations are characterized by negative trends, although the catch of these species is prohibited.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Scientific, Technical and Economic Committee for Fisheries (STECF) – Black Sea assessments (STECF-15-16). 2015. – 284 pp. – https://bit.ly/2MG0ZX1 • Scientific, Technical and Economic Committee for Fisheries (STECF) – Stock assessments in the Black Sea (STECF-17-14). 2017. – 498 pp. – https://bit.ly/2ZyH3eu • Turbot: http://www.fao.org/gfcm/data/reporting/turbotblacksea/en/ • Anchovy – https://bit.ly/325ZPrg • Whiting – https://bit.ly/2ZyGSjk
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Please provide an explanation for the level of confidence indicated above.</p> <p>Assessment of the impact of fisheries on biodiversity is grounded on partial evidence, chiefly on research findings. The Dnipro reservoirs are man-made objects that have a multi-vector set of external factors, which impedes the assessment of the impact of fisheries. In the Black Sea, widespread illegal, unreported and unregulated fishing further complicates the evaluation, since it is beyond expert assessments and monitoring.</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input checked="" type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>The current fisheries monitoring system involves only the studies of ichthyofauna of the Dnipro reservoirs as a target for fisheries. Other inland water bodies of Ukraine are covered only by local studies. Scientists from relevant research institutes conduct monitoring activities in the Black Sea, and their results are summarized at the regional level within the framework of the GFCM and STECF expert groups.</p> <p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • http://www.fao.org/gfcm/reports/technical-meetings
<p>ABT 7 – Sustainable resource management</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input type="checkbox"/> On track to achieve target</p> <p><input checked="" type="checkbox"/> Progress towards target but at an insufficient rate</p>

<input type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown
Date the assessment was done: 2018-11-05
Additional information <p>Correspondence to national targets and measures: NT 2, NT 4, NT 6, NT 7, Measures 6, 8, 10, 11, 20.</p> <p>The NAP 2011–2015 contains paragraphs 93, 94, 95 on sustainable forest management. The Law of Ukraine “On Aquaculture” is in force. The Forest Code of Ukraine calls for sustainable forestry operations; the Code also declares that “forest certification is an assessment of compliance of a forest management system with international requirements for forest management and sustainable forestry”. Standards for sustainable agriculture development, along with sustainable management, and protection of land to conserve biodiversity are delineated by the relevant legislative acts.</p> <p>The area of FSC certified forests in Ukraine significantly expanded. Inventory and access to spatial cadastral data have improved: the “Public cadastral map” and the geoportal “Water resources of Ukraine” were launched.</p> <p>Nonetheless, law enforcement pertaining to resource management remains insufficient. The area of arable land does not diminish and still exceeds the threshold. Deforestation peaked in 2016, but following the improvement of legislation, the rates of deforestation decreased. Forest certification requirements are not always met.</p>
Indicators used in this assessment <p>The following actions were carried out to assess the progress on ABT 7: analysis of the current legislative norms; comparison of the planned and implemented measures according to respective action plans; assessment of the area of certified forests, and analysis of information on non-compliance with certification requirements.</p>
Relevant websites, web links and files <ul style="list-style-type: none"> • Law of Ukraine “On Aquaculture”, 18.09.2012 № 5293-VI, http://zakon.rada.gov.ua/laws/main/5293-17 • The Forest Code of Ukraine, http://zakon.rada.gov.ua/laws/3852-12 • Forest Stewardship Council, FSC, https://ua.fsc.org/ua-ua
Level of confidence of the above assessment <ul style="list-style-type: none"> <input type="checkbox"/> Based on comprehensive evidence <input checked="" type="checkbox"/> Based on partial evidence <input type="checkbox"/> Based on limited evidence
Please provide an explanation for the level of confidence indicated above. <p>The key information for this assessment was sourced from official reports, including those compiled by the FSC National Office in Ukraine (https://ua.fsc.org/ua-ua/pro-nas/fsc), the Ministry of Ecology and Natural Resources of Ukraine (menr.gov.ua), and obtained during public environmental inspections. Yet, a reliable assessment of the territories managed in a sustainable way is currently not possible.</p>
Adequacy of monitoring information to support assessment <ul style="list-style-type: none"> <input type="checkbox"/> Monitoring related to this target is adequate <input checked="" type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue) <input checked="" type="checkbox"/> No monitoring system in place <input type="checkbox"/> Monitoring is not needed

Please describe how the target is monitored and indicate whether there is a monitoring system in place

Forestry monitoring involves, in particular, calculation of the area of FSC certified forests and is conducted by the FSC National Office in Ukraine. Environmental NGOs conduct occasional monitoring of certified companies' performance. There is no nationwide monitoring system for sustainable resource management.

ABT 8 – Pollution

Category of progress towards the implementation of the selected target:

- On track to exceed target
- On track to achieve target
- Progress towards target but at an insufficient rate
- No significant change
- Moving away from target
- Unknown

Date the assessment was done: 2018-11-05

Additional information

Correspondence to national targets and measures: NT 2, NT 3, NT 4, NT 7, Measure 12.

NSB puts a strong emphasis on ABT 8. The EU-Ukraine Association Agreement encompasses the implementation of several directives to reduce environmental pollution (EU Water Framework Directive, Nitrates Directive, etc.).

Mining, metallurgical and chemical enterprises have historically been among the substantial sources of pollution in Ukraine; the key pollutants are monitored. Agricultural pollution, in particular water eutrophication, is also common, but generally not covered by monitoring. There are long-term consequences of historical radioactive contamination. Litter is a growing source of pollution.

Effective measures were taken to reduce the threat of radioactive contamination. Fuel quality standards for motor gasoline, diesel, marine and boiler fuels were increased. There are initiatives for effective waste and litter management. Due to the overall socio-economic context and transformation of the economy, there was a reduction in industrial emissions.

According to the State Statistics Service, the amount of air pollutant emissions declined by 28% between 2014 and 2018, but the Air Pollution Index remains high. Discharge of untreated or insufficiently treated reclaimed water to surface water bodies in Ukraine fluctuates, but overall it increased by 8% during 2014–2018. On average, water bodies in Ukraine have a moderate level of water pollution (Class III of water quality in 2016 and 2017) according to the Saprobity Index. The oxygen conditions in most rivers and reservoirs were satisfactory as of 2017; the quantity of phenols and petroleum products in water continues to decline. The use of fertilizers and pesticides by farmlands has increased, but the content of hazardous substances in soil is below the maximum allowable level. Traces of pesticide and dioxin contamination, along with marine debris, were found in the Black Sea.

According to the Environmental Performance Index, Ukraine's overall score increased from 49.01 to 52.87, but Ukraine's position changed from 95th (in 2014) to 109th in 2018.

Indicators used in this assessment

Indicators were the following: various pollution indices according to reports and open datasets of the Ministry of Ecology and Natural Resources of Ukraine, reports on environmental pollution in Ukraine delivered by the Boris Sreznevsky Central Geophysical Observatory, Environmental Performance Index, and other open sources.

<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • State Statistics Service of Ukraine – http://ukrstat.gov.ua/ • Open datasets of the Ministry of Ecology and Natural Resources of Ukraine https – menr.gov.ua/content/nabori-vidkritih-danih.html • Boris Sreznevsky Central Geophysical Observatory – http://www.cgo-sreznevskiy.kiev.ua/index.php?fn=u_zabrud&f=ukraine • Air pollutant emissions in Ukraine (1990–2018) – http://www.ukrstat.gov.ua/operativ/operativ2015/sg/ekolog/ukr/zr_u.xlsx • Wendling, Z. A., Emerson, J. W., Esty, D. C. et al. 2018 Environmental Performance Index. New Haven, CT: Yale Center for Environmental Law & Policy. Ukraine profile – https://epi.envirocenter.yale.edu/epi-country-report/UKR • Archive Environmental Performance Index – http://archive.epi.yale.edu/epi/country-profile/ukraine
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input checked="" type="checkbox"/> Monitoring related to this target is adequate</p> <p><input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>Many public authorities assess the quality of the environment, as stated in the regulation “On State Environmental Monitoring System”, but the number of indicators is limited.</p> <p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • On State Environmental Monitoring System – http://zakon.rada.gov.ua/laws/show/391-98-п • State Statistics Service of Ukraine – http://ukrstat.gov.ua/ • Boris Sreznevsky Central Geophysical Observatory – http://www.cgo-sreznevskiy.kiev.ua/index.php?fn=u_zabrud&f=ukraine • “Methodological provisions on compiling and dissemination of environmental indicators following international standards”, approved by the order of State Statistics Service of Ukraine, 01.12.2017 №311 – http://www.ukrstat.gov.ua/metod_polog/metod_doc/2017/311/mp_ep_ms.zip • Air pollutant emissions in Ukraine (1990–2018) – http://www.ukrstat.gov.ua/operativ/operativ2015/sg/ekolog/ukr/zr_u.xlsx
<p>ABT 9 – Invasive alien species</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input type="checkbox"/> On track to achieve target</p> <p><input checked="" type="checkbox"/> Progress towards target but at an insufficient rate</p> <p><input type="checkbox"/> No significant change</p> <p><input type="checkbox"/> Moving away from target</p> <p><input type="checkbox"/> Unknown</p>

Date the assessment was done: 2018-11-05

Additional information

Correspondence to national targets and measures: NT 2, Measure 13.

In 2015, over 900 alien vascular plant species (15% of the country's flora) were known in Ukraine, 83% of those are xenophytes, which reflects the progressive alteration of the flora. Invasive species pose a threat to biodiversity and natural ecosystems of Ukraine; there are about 90 invasive species reported, including over 40 transformer species, namely *Echinocystis lobata*, *Heracleum sosnowskyi*, *Impatiens glandulifera*, *I. parviflora*, *Reynoutria japonica*, *Robinia pseudoacacia*.

Generalist mollusc species have spread in the Sea of Azov and the Black Sea: *Mya arenaria* and *Anadara inaequivalvis*. About 20 invasive species of terrestrial molluscs are known in Ukraine. Such species as *Deroceras caucasicum* and *Krynockillus melanocephalus*, as well as *Arion lusitanicus* slug, which is rapidly spreading in Ukraine, are a cause of major concern for the country's biodiversity. In 2015, a new invasive agricultural pest species, *Megabruchidius dorsalis*, was recorded in Ukraine, and also a new species of chalcid wasps, *Eurytoma gleditsiae* (a parasite of this pest), was recorded. An invasive ant species of *Tapinoma melanocephalum* was found. In 2015, an invasive phytophage of small-leaved lime was identified, the lime leaf miner *Phyllonorycter issikii*. It was pointed out that the degree of damage to small-leaved lime in Kyiv has been increasing over the years, and the aggressiveness of lime leaf miner has been growing: some leaves are 70% damaged.

About ten introduced freshwater fish species formed sustainable populations in Ukraine. Today, the most common species is the stone moroko *Pseudorasbora parva*; the species abundance is linked to its spreading through a network of fish farming reservoirs. The Chinese sleeper *Perccottus glenii* is rapidly expanding its invasive range in Ukraine. The pumpkinseed *Lepomis gibbosus*, brown and black bullhead species (*Ameiurus nebulosus* and *Ameiurus melas*) are considered harmful. Among the common alien mammals there are the muskrat, American mink, and raccoon dog.

There are working lists for certain IAS groups. An Interagency Working Group on IAS was set up, and the relevant Provisions were approved. Quarantines of certain territories are announced according to the "List of regulated pests", in particular for the physical extermination of IAS. The procedure of ballast water discharge was simplified, which might cause the introduction of new IAS. Species accidentally introduced by ballast waters (*Mnemiopsis leidyi*, *Rapana venosa*, *Desmarestia viridis*) significantly contribute to loss of fish biodiversity in the Black Sea and the Sea of Azov. These IAS are either food competitors of large pelagic fish (*Mnemiopsis leidyi*) (Shiganova et al., 2014), or ruin the benthic marine ecosystems (*Rapana venosa*) (Chashchin et al., 2015).

Indicators used in this assessment

Indicators: data on alien species observations from scientific studies. The number of events of new IAS emergence and the ways of their expansion during the reporting period are unknown, and their monitoring at the national level has not been conducted. The Phytosanitary Service holds quarantines for regulated harmful organisms. According to scientific publications, several species are threatened due to the impact of IAS.

Countrywide monitoring of animal and plant species that negatively affect natural ecosystems is not conducted.

Relevant websites, web links and files

- National Report on the State of the Environment in Ukraine, 2015. – <https://menr.gov.ua/news/31768.html>
- Kutsokon I. The Chinese sleeper (*Perccottus glenii* Dybowski, 1877) in Ukraine: new data on distribution // Journal of Applied Ichthyology. – 2017. – 33. – P. 1100–1107.
- Order by the Ministry of Ecology of Ukraine (№ 207, 14.06.2018) – <http://document.ua/pro-utvorennja-mizhvidomchoyi-robochoyi-grupi-shodo-invaziin-doc359895.html>

<ul style="list-style-type: none"> • Order of Ministry of Agropolicy on approval of the List of controlled harmful organisms (№ 716, 29.11.2006): http://zakon.rada.gov.ua/laws/show/z0720-10 • Order by the Ministry of Ecology of Ukraine (№ 82, 18.03.2015) – http://zakon.rada.gov.ua/laws/show/z0343-15 • Shiganova T.A., Legendre L., Kazmin A.S., Nival P. Interactions between invasive ctenophores in the Black Sea: assessment of control mechanisms based on long-term observations // Marine ecology Prog. Ser. – 2014. –507. P. 111–123 • Chashchin A., Shlyakhov V.A., Dubovik V.E., Negoda S. Stock Assessment of Anchovy (<i>Engraulis encrasicolus</i> L) in Northern Black Sea and Sea of Azov // Progressive Engineering Practices in Marine Resource Management. – IGI Global, 2015. – P. 209–243.
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input checked="" type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>ABT 10 – Ecosystems vulnerable to climate change</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input type="checkbox"/> On track to achieve target</p> <p><input checked="" type="checkbox"/> Progress towards target but at an insufficient rate</p> <p><input type="checkbox"/> No significant change</p> <p><input type="checkbox"/> Moving away from target</p> <p><input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 2, NT 4, Measures 14, 15.</p> <p>In light of the declining resilience and growing vulnerability of ecosystems to climate change due to anthropogenic pressures, creation of nature conservation areas and removal of degraded ecosystems from active economic use is the major way of preserving vulnerable ecosystems.</p> <p>The effects of climate change on ecosystems of Ukraine depend on their geographical location, conservation status, and anthropogenic load. Marine, coastal, freshwater, marsh, steppe, highland and forest ecosystems can be classified as ecosystems vulnerable to climate change.</p> <p>The StateGeoCadastre data as of January 1, 2016 reports that agricultural lands accounted for 70.8% of Ukraine's territory and built-up lands for 4.2%. Natural grassland and wetland ecosystems (steppe, meadow, marsh and coastal habitats) remained on steep slopes, swampy and saline areas. Virgin steppes occupy barely 3% of the original distribution area and they are affected by climate change (with mesophytization in the north and desertification in the south). Preserved areas continue to degrade due to fragmentation and anthropogenic pressure.</p> <p>Centers of endemism – in particular, the canyons of the Dniester and Pivdennyi Buh rivers – are among the most vulnerable ecosystems, as they may be lost during the creation of hydropower plants or elevation of</p>

<p>water level in reservoirs.</p> <p>According to experts, anthropogenic pressure undermines the conservation of vulnerable marine and coastal ecosystems: regulations prohibiting coastline construction are not met, and the recreational load is not regulated; thus, the creation of new marine protected areas is required.</p>
<p>Indicators used in this assessment</p> <p>Indicators: availability of strategic objectives to reduce anthropogenic pressure on vulnerable ecosystems; allocation of land by land use types; percentage of vulnerable ecosystems in the NRF, the Emerald Network, and the ecological network.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Minicheva G.G., Bolshakov V.N., Kalashnik E.S. <i>et al.</i> Assessment of the reactions of algal communities to influence of climatic factors in the N-W Black Sea ecosystem // Algologia. – 2018. – 28 (2). – P. 121–135. – http://dspace.nbu.gov.ua/handle/123456789/140293 • Didukh, Y. Ecological aspects of the global climate changes: reasons, consequences and actions. Visnyk NAN Ukrainy - 2009. - № 2. - C. 34–44. – https://bit.ly/2Zi89aI • Climatogenic changes of plant life of the Ukrainian Carpathians / Didukh Ya. P., Chorney I. I., Budzhak V. V. <i>et al.</i> ; ed. by Ya. P. Didukh, I. I. Chorney – Chernivtsi : “DrukArt”, 2016. – 280 p • Vulnerability of forests of Ukraine to the climate change (A. Shvydenko, I. Buksha, S. Krakovska, eds.). 2018. Nika-Tsentr, Kyiv. – 184 p. • Land Fund of Ukraine, as by January 1, 2016, and its dynamics from January 1, 2015 – https://bit.ly/2ruspm2 • Parnikoza I., Vasiluk A. Ukrainian steppes: current state and perspectives for protection // Annales Universitatis Mariae Curie-Skłodowska. Sectio C. – 2011. – 66 (1). – P. 23–37. – https://bit.ly/2L6pbyw • Kostyushin V., Kuzemko A., Onischenko V. <i>et al.</i> The Southern Bug meridional river corridor: biodiversity and valuable areas. — Wetlands International Black Sea Program. – Kyiv, 2007. – 92 p. – http://www.duecomk.gov.ua/data/press/12.pdf • Vasyliuk, O., Norenko, K., Shiryayeva, D. <i>et al.</i> 2015. The Glacial Period for protected areas: 2014–2015 // Environment People Law Journal. – 2015. – 25–26. – https://bit.ly/2KWG1Rv
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input checked="" type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>The State Environmental Inspectorate of Ukraine is in charge of state supervision of the use, restoration and protection of forests, wetlands, and the marine environment. The State Water Monitoring Procedures, in particular, the indicators and frequency of state monitoring of marine waters, were approved to determine the ecological status and to evaluate the trends pertaining to long-term natural and anthropogenic changes. In 2013–2018, an international project “Improving Environmental Monitoring in the Black Sea” (EMBLAS - II) was implemented.</p>

<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Resolution of the Cabinet of Ministers of Ukraine, 19.04.2017, № 275 “On approval of the Statute of the State Environmental Inspectorate of Ukraine” – http://zakon.rada.gov.ua/laws/show/275-2017-п • State Water Monitoring Procedures (approved by the resolution of the Cabinet of Ministers of Ukraine № 758, 19.09.2018) – https://zakon.rada.gov.ua/laws/show/758-2018-п • EMBLAS –II – www.emblasproject.org
<p>ABT 11 – Protected areas</p>
<p>Category of progress towards the implementation of the selected target:</p> <p> <input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target <input checked="" type="checkbox"/> Progress towards target but at an insufficient rate <input type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown </p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 5, NT 7, Measures 7, 14, 15, 16.</p> <p>The NSB envisaged the expansion of the NRF area (protected areas) to 10% of the country’s territory in 2015 and to 15% in 2020.</p> <p>As of 2018, the total area of the NRF in Ukraine amounts to over 39.8 thousand km², which corresponds to 6.6% of the area of Ukraine. Moreover, Ukraine claimed a 4,025-km² “Zernov's Phyllophora field” marine protected area within its exclusive economic zone in the Black Sea. In total, there are 663 NRF territories and objects of national importance in Ukraine and 7,633 territories and objects of local importance. The most important are: nature reserves (5.2% of the total NRF area), biosphere reserves (12%), and national nature parks (32.9%). The Emerald Network, established to implement the Bern Convention, covers 10% of the country area (including nearly half of the current area of the NRF and all the wetlands of international importance).</p> <p>The network of Ramsar Sites, territories and locations important for the conservation of specific groups of fauna (birds (IBA), bats, or cetaceans) is being expanded.</p> <p>In 2013–2017, 268 NRF territories were established in Ukraine with a total area of 3,342 km² (8.4% of the NRF area as of January 1, 2018). Due to the socio-political situation in 2013–2014, the establishment of new protected areas dropped down. In 2015, new NRF territories added up to 1.3% of the target figure planned by the Strategy of regional development for that year, and in 2016 up to 3.4%, but 98.5% of those stood for Chornobyl Radiation and Ecological Biosphere Reserve. In 2017, the figure was 0.05% of the target percentage.</p> <p>Geographical distribution of protected areas is uneven. For instance, 3% of steppe ecosystems remained untouched in the Steppe zone, which occupies 40% of Ukraine, and only 10% of the virgin steppes are in the NRF. Plains of Crimea, coastal waters, the Donets Ridge, and chalk sites are insufficiently represented within the NRF of Ukraine.</p> <p>Today, the list of prospective protected areas consists of roughly 900 sites. However, the regulatory procedures pertaining to the establishment of new NRF sites are complicated: they require agreement between the stakeholders and have slow progress.</p> <p>Protected areas in occupied territories, which are beyond the control of Ukrainian authorities, in particular in Crimea, are lacking proper management, and the occupier administrations do not recognize the legal protection status of most of them.</p> <p>Substantial progress was achieved in endorsing the objectives of ABT 11 in regulatory acts of various levels.</p>

Nonetheless, the implementation mechanisms call for improvement.
<p>Indicators used in this assessment</p> <p>Progress indicators: number, area, regional and ecological distribution of new protected areas by category, their correlation with the existing areas and corresponding figures.</p>
<p>Please describe any other tools or means used for assessing progress</p> <p>Analysis of legislation and regulations, as well as statistical data on protected areas, was carried out.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Vasyliuk, O. On the necessity of identification of real area of the NRF in Ukraine. 2013. Tsentr Ekologichnoi Osvity I Informatsii. – 112 p. • Balobin, S., Brygynets, O., Vasyliuk, O., et al. The Glacial Period for protected areas // Environment People Law Journal. – 2013. – 21–22. – C. 5–96. – https://bit.ly/2zmVkfV • Vasyliuk, O., Norenko, K., Shiryayeva, D., Skvortsova, V., Testov, P., Khomechko, G. 2015. The Glacial Period for protected areas: 2014–2015 Ed. By O. Kravchenko. Environment People Law Journal № 25–26 (65–66): – http://epl.org.ua/wp-content/uploads/2016/12/EPLJournal2526-1.pdf • http://epl.org.ua/announces/v-ukraini-nikomu-bude-stvoriuvaty-zapovidni-terytorii-2/ • Categories, objectives and criteria for protected areas. 1978. IUCN, Morges – https://portals.iucn.org/library/sites/library/files/documents/1978-003.pdf • UNEP-WCMC and IUCN (2016). Protected Planet Report 2016. UNEP-WCMC and IUCN: Cambridge UK and Gland, Switzerland – https://bit.ly/2Hs4D2s
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Please provide an explanation for the level of confidence indicated above.</p> <p>Fragmented nature of information stems from incomplete data on the ecological distribution of protected areas.</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input checked="" type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>There is general information on the changes in number and area of the NRF sites on the national and regional levels and on assigned protected area categories.</p> <p>Nature reserves, biosphere reserves, and national nature parks gather and annually report the information on the condition of sites via the ‘Chronicles of Nature’ (<i>Litopysy pryrody</i>). Assessment of the contribution of the NRF to conservation of biodiversity is complicated by inadequate internal communication between the regional administrations and their communication with the Ministry of Ecology: primarily, it concerns the current state of sanctuaries (<i>zakaznyky</i>), nature monuments, and protected landscapes/seascapes – sites with no administration. Moreover, evaluation of the contribution to conservation of biodiversity of the Emerald Network sites is possible, as these areas are determined based on expert assessments.</p> <p><i>Note:</i> The NRF sites are classified into those with and without an administration. The NRF territories with</p>

<p>administration (100 sites) are governed by the Ministry of Ecology and a few other institutions: NAS and NAAS of Ukraine, the Ministry of Agrarian Policy and Food, and others. The rest of the NRF territories (8,200 sites) are managed by land users and are not monitored.</p>
<p>ABT 12 – Species and extinctions</p>
<p>Category of progress towards the implementation of the selected target:</p> <p> <input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target <input checked="" type="checkbox"/> Progress towards target but at an insufficient rate <input type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown </p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 5, NT 7, Measures 1, 2, 7, 9, 15, 16, 17.</p> <p>Currently, 1,409 species that are common in Ukraine are assessed by the IUCN Red List, 187 (13.3%) of them are classified as threatened (VU, EN, CR). The Red Data Book of Ukraine (2009) lists 826 species of flora and 543 species of fauna. Among them, 45 invertebrate and 61 vertebrate species are considered endangered (0.2% of the total species) and 6 species have disappeared from Ukraine’s territory (0.01%). Among the protected species, 24 invertebrate and 17 vertebrate species are regarded as endemic to Ukraine and specific regions of Ukraine, such as the Carpathians (0.1%). Large wild animals (all sturgeon species, turbot, harbour porpoise, European bison, and elk) are among the species with negative population dynamics. 179 species of plants and fungi are endangered (0.7%) and 10 are extinct (0.04%).</p> <p>Species protection is reinforced by establishment of new protected areas on the territories where the Red Data Book species are found.</p> <p>A number of Annex I CMS species are listed in the Red Data Book of Ukraine (3 mammalian species, 184 bird species, and 1 fish species). Several national action plans for conservation of migratory species are at different stages of development. National legal framework was enhanced with specific conservation measures: uncontrolled burning of dry vegetation, use of cruel fishing and hunting gears, ploughing of habitats of wild animals, and cutting of hollow trees have been forbidden, and the legal enforcement of the “quiet season” during the breeding season of wild animals was formalized (it is forbidden to do any activities that cause noise and anxiety between April 1 and June 15). Protection status has been granted to elk. Actions pertaining to conservation plan for the brown bear are being successfully implemented, and in some regions the same is true for conservation of the European bison. There is progress in conservation of the black stork, common bottlenose dolphins, and great bustard. Sterlet breeding is in progress. Biogeographic data on species distribution was considered when identifying the Emerald Network sites.</p> <p>The CITES legal and regulatory framework for trade control system was improved.</p>
<p>Indicators used in this assessment</p> <p>Assessment was based on analysis of various factors affecting the species ranges and the adequacy of the protected areas in relation to species of the Bern Convention; also, the reports compiled by the PA administrations, central executive bodies, and scientific institutions were examined. The IUCN database includes 1,409 species of flora and fauna of Ukraine, of them 187 (13.3%) fall under the categories that require protection.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Fauna of Ukraine: conservation categories. Reference book. – The 2nd edition. – Kyiv, 2010. – 80 p. – http://kazhan.org.ua/library/rl_2010/rl_2010.pdf

<ul style="list-style-type: none"> • NSF. Project 37464 “Animals listed in the Red Data Book of Ukraine during climate change: current status and prognosis in the context of development of the network of protected areas” (O. Nekrasova, 2017–2018) : http://contest.dffd.gov.ua/node/37464 • Bern Convention (Emerald Network, Birds) – https://bit.ly/2zrmG4t • Bern Convention (Emerald Network, Habitats): https://bit.ly/2PqBE5k
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Please provide an explanation for the level of confidence indicated above.</p> <p>There is a lack of data on species abundance and related dynamics, as well as detailed information on spatial and ecological distribution for most species across the country.</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input checked="" type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>Specific monitoring programs operate primarily at the regional level and/or within higher-category PAs. There are no species lists for many taxonomic groups, and the majority of rare species assessments are based on limited data. The State Forest Resources Agency, the State Fisheries Agency, and the State Statistics Service collect certain data on the state of forestry and commercial species.</p>
<p>ABT 13 – Genetic diversity</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input checked="" type="checkbox"/> On track to achieve target</p> <p><input type="checkbox"/> Progress towards target but at an insufficient rate</p> <p><input type="checkbox"/> No significant change</p> <p><input type="checkbox"/> Moving away from target</p> <p><input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 5, Measure 18.</p> <p>According to the Law of Ukraine “On Pedigree Cattle Breeding”, the status of a “gene pool herd” was determined, such herds were established and breeding of local and endangered breeds of cattle (Ukrainian Whitehead, Ukrainian Grey, Lebedyn, Carpathian Brown, and Red Steppe cattle), pigs (Myrhorod Pigs, Ukrainian White Steppe, Ukrainian Spotted Steppe), sheep (Sokolska, Ukrainian Carpathian mountain sheep), horses (Hutsul), poultry, fish, bees and silkworms is carried out. Specialized sectoral institutions of the NAAS host functional network of gene pool cryobanks, the main of which is the Bank of Animal Genetic Resources at the M.V. Zubets Institute of Animal Breeding and Genetics of NAAS. The Bank conserves sperm (approx. 160,000 doses) of bulls, boars, rams and roosters, cattle embryos, sows’ eggs and samples of somatic cell samples.</p>

<p>As of late 2017, the National Bank of Plant Genetic Resources of Ukraine consisted of 148.3 thousand specimens represented by 440 crops and 1770 species. The specimens are stored at the national storage facility for gene pool samples, in accordance with the genebank standards, and in field collections. Among them are wild relatives of grains, corn, legumes, as well as medicinal, essential oil, ornamental and forest plants.</p> <p>In 2011–2015, 15 scientific institutions of the NAAS conducted a study “Biodiversity conservation and management system in small livestock populations and their use in breeding”; in 2016–2020, “System of work in populations and conservation of the diversity of livestock genetic resources”. In 2017, the Institute of Animal Breeding and Genetics launched a project “Development of an optimized technology for the long-term storage of animal genetic resources” in accordance with FAO requirements.</p> <p>The “Henofond roslyn” (“Plant gene pool”) state research program is in place.</p> <p>The program for conservation and sustainable use of livestock genetic resources got little funding in recent years, which resulted in a declining number of animals of local and endangered breeds (Gladiy et al., 2015). Urgent revival of the program is needed.</p>
<p>Indicators used in this assessment</p> <p>Number of samples representing various crops; number of species of cultivated and wild plants in storage.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Gladiy et al., 2015. Genetic pool of local and endangered breeds. <i>Agramy Tyzhden</i>. 7 (298): 51–53. – http://iabg.org.ua/images/M_images/genfon.pdf • EFABIS: http://efabis.tzv.fal.de/ • http://animalbreedingcenter.org.ua/derjplemreestr • http://www.efabis.gov.ic/
<p>Level of confidence of the above assessment</p> <p><input checked="" type="checkbox"/> Based on comprehensive evidence <input type="checkbox"/> Based on partial evidence <input type="checkbox"/> Based on limited evidence</p>
<p>Please provide an explanation for the level of confidence indicated above.</p> <p>Information was provided by the M.V. Zubets Institute of Animal Breeding and Genetics of NAAS and the V.Ya.Yuryev Plant Production Institute of NAAS.</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input checked="" type="checkbox"/> Monitoring related to this target is adequate <input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue) <input type="checkbox"/> No monitoring system in place <input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>The M.V. Zubets Institute of Animal Breeding and Genetics of NAAS and the V.Ya.Yuryev Plant Production Institute of NAAS are the main organizations responsible for the coordination of all activities in animal and plant production.</p>
<p>ABT 14 – Ecosystem services</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target</p>

- Progress towards target but at an insufficient rate
- No significant change
- Moving away from target
- Unknown

Date the assessment was done: 2018-11-05

Additional information

Correspondence to national targets and measures: NT 2, NT 5, NT 6, NT 7, Measure 20.

Ecosystem mapping at the national level is currently basic (in atlas form). In 2018, baseline studies were launched to create a list of ecosystems that provide key ecosystem services and to develop guidelines for their restoration and conservation.

Agroecosystems have the greatest impact on biodiversity at the national level. Hence, assessing the state of ecosystems and ecosystem services in agricultural landscapes is essential. GLOBIO3-based assessment shows that the greatest impact on biodiversity of terrestrial ecosystem originates from economic activities within agricultural landscapes. During the reporting period, the consumption of inorganic fertilizers increased by 44.83% (<http://www.ukrstat.gov.ua/>), which reflects the intensification of agricultural production. There was no reduction in the area of arable land (see ABT 7). The annual rate of increase in the area of eroded soil reaches 100 thousand hectares, and the annual loss of the layer of fertile soil is up to 15 t per ha. Ukraine has one of the highest rates of land ploughing in the world, which, according to the State Land Cadastre data, was 54% as of January 1, 2016, at the threshold of 38.2% (Bulygin, 2003). In this context, further efforts to assess the ecosystems and ecosystem services provided by agricultural landscapes are necessary. In the meantime, the agricultural sector should be a priority for information campaigns on ecosystem services.

Within the framework of the regional program “European Neighborhood and Partnership Instrument East Countries Forest Law Enforcement and Governance II”, an assessment of the ecosystems of Ukrainian forests was conducted and possible mechanisms for payment for ecosystem services were recommended. Meanwhile, introduction of mechanisms to consider the value of ecosystem services in decision making in forest sector is still necessary. The use of aquatic living resources is governed by regulations, annual regimes, and limits. A public [map of wintering holes](#) is available to inform where fishing is forbidden. Hunting industry is well developed in Ukraine, and it provides for management and conservation of game species. According to the State Forest Resources Agency of Ukraine, there are roughly 300,000 hunters hunting annually. However, farm breeding of game species amounts to only 15 thousand individuals annually, which illustrates high dependence of hunting on the natural reproduction of populations. Poaching remains an unresolved problem for both fish and game sectors.

Indicators used in this assessment

Assessment was based on the following: indirect indicators of change in natural ecosystems, their protection and stability levels, as determined by the GLOBIO3 method, crop production area, portion of arable land, area of clearcuts, soil erosion data, inorganic fertilizer consumption, number of hunters and users of aquatic bioresources, indicators pertaining to breeding of game species. In addition, the existence of rules governing ecosystem services in various industries is indicative for this target.

Relevant websites, web links and files

- Norenko, K., Testov, P., Vasyliuk, O. 2018. Forest areas are for the wildlife: new policy of forestry . – <https://bit.ly/2MEMHGa>
- Kolomytsev, G. 2011. The experience of first digital generalization of impacts on terrestrial biodiversity of Ukraine using GLOBIO3 techniques : http://nd.nubip.edu.ua/2011_4/11kgo.pdf
- State Statistics Service of Ukraine. Agriculture, forestry and fisheries: <http://www.ukrstat.gov.ua/>
- Bulygin, S. 2003. Regulating technological load on land resources. *Zemlevporiadkuvannia*. 1: 38–43.

<ul style="list-style-type: none"> • Soloviy I. Evaluation of forest ecosystem services provided by forests of Ukraine and proposals on PES mechanisms. – 118 p. https://bit.ly/30AJKtm • Tararenko, O. 2016. SWOT analysis and GAP analysis of policies, programs and regulations in agriculture and preparing recommendations on their improvements following the CBD statements. Kherson. 102 p. – https://bit.ly/2ZpLULb • http://darg.gov.ua/_interaktivni_karti_0_0_0_7823_1.html • Sheremet, I. 2014. Characteristics of present-day situation in hunting. – https://bit.ly/2EkygD1
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence</p> <p><input checked="" type="checkbox"/> Based on partial evidence</p> <p><input type="checkbox"/> Based on limited evidence</p>
<p>Please provide an explanation for the level of confidence indicated above.</p> <p>General statistics on the economic use of land and bioresources is available.</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate</p> <p><input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue)</p> <p><input checked="" type="checkbox"/> No monitoring system in place</p> <p><input type="checkbox"/> Monitoring is not needed</p>
<p>ABT 15 – Climate resilience, sequestration and restoration</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target</p> <p><input type="checkbox"/> On track to achieve target</p> <p><input checked="" type="checkbox"/> Progress towards target but at an insufficient rate</p> <p><input type="checkbox"/> No significant change</p> <p><input type="checkbox"/> Moving away from target</p> <p><input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 4, NT 7, Measures 15, 19.</p> <p>Measures aimed at reducing GHG emissions through ecosystem solutions address the land use, land-use change, and forestry (LULUCF). In the LULUCF sector, GHG removals prevail over emissions: according to the National inventory of anthropogenic emissions and removals of GHG in Ukraine for 1990–2015 (https://menr.gov.ua/news/32422.html), about 5% of the total GHG emissions were absorbed by this sector. LULUCF sector’s special features are the imbalance of land use structure, excessive ploughing of land, and low level of forest cover (Ukraine’s average forest cover hardly reaches 16%, while the average figure for European countries is 37%). Forests are the main GHG sink. The GHG emissions come primarily from ploughed land, pastures, disturbed wetlands, and deforestation. During 2010–2015, the emissions from ploughed land, on average, added up to 38.8 million tonnes of CO₂-equivalent per year. These ecosystems should be the target of actions aimed at restoration and climate change resilience.</p> <p>Indicators of ecosystem restoration outlined in strategic documents were not met. The area of forest cover in Ukraine is not growing (15.9% in 2011–2018, as stated by the State Forest Resources Agency), the area of ploughed land is not diminishing, restoration of degraded ecosystems is advancing very slowly. So far, the 15% degraded ecosystems restoration target (ABT 15) has not been met.</p> <p>Currently, Ukraine's Nationally Determined Contributions (NDC) to reduction of GHG emissions in imple-</p>

<p>mentation of the Paris Agreement do not provide for any specific actions aimed at restoring natural ecosystems to reduce GHG emissions. The NDC states that an approach to account for the LULUCF sector's contribution to reducing GHG emissions "will be determined as soon as the technical capacity is available, but no later than 2020".</p>
<p>Indicators used in this assessment</p> <p>Area of agricultural land, area of forest cover, and the ratio between ploughed land, perennial crops, hayfields, pastures and fallow land served as indicators.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • LULUCF – https://bit.ly/2Mgd01k • https://menr.gov.ua/news/32422.html • Didukh, Y. Ecological aspects of the global climate changes: reasons, consequences and actions. Visnyk NAN Ukrainy - 2009. - № 2. - C. 34–44. – https://bit.ly/2Zi89aI • https://climateforumeast.org/news/88/CFE-II-project-results-in-Ukraine • http://climategroup.org.ua • http://climategroup.org.ua/wp-content/uploads/2017/09/Case-studiesClimateChangeAdaptationUkraine.pdf • General characteristics of Ukrainian forests – https://bit.ly/2HqmCGE • State Forest Resources Agency. Letter № 02-27/ -17 response at № 5/4.1-15/7874-18, 03.08.2018 • Intended Nationally Determined Contribution by Ukraine – https://bit.ly/2MH3atk
<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence <input checked="" type="checkbox"/> Based on partial evidence <input type="checkbox"/> Based on limited evidence</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate <input checked="" type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue) <input type="checkbox"/> No monitoring system in place <input type="checkbox"/> Monitoring is not needed</p>
<p>Please describe how the target is monitored and indicate whether there is a monitoring system in place</p> <p>Data on GHG emissions and removals by natural ecosystems are published in the National inventory of anthropogenic emissions from sources and removals by sinks of GHG. Land use changes are reflected in the State Land Cadastre.</p> <p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • National Cadastre of antropogenic emissions and absorption – https://bit.ly/2JTtb7O
<p>ABT 16 – Access and benefit sharing</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target <input type="checkbox"/> Progress towards target but at an insufficient rate <input checked="" type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown</p>

Date the assessment was done: 2018-11-05
Additional information Ukraine signed the Nagoya Protocol, and domestic-level ratification procedures are carried out.
Indicators used in this assessment <input checked="" type="checkbox"/> No indicator used
Level of confidence of the above assessment <input checked="" type="checkbox"/> Based on comprehensive evidence <input type="checkbox"/> Based on partial evidence <input type="checkbox"/> Based on limited evidence
Adequacy of monitoring information to support assessment <input type="checkbox"/> Monitoring related to this target is adequate <input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue) <input type="checkbox"/> No monitoring system in place <input checked="" type="checkbox"/> Monitoring is not needed
ABT 17 – National biodiversity strategies and action plans
Category of progress towards the implementation of the selected target: <input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target <input checked="" type="checkbox"/> Progress towards target but at an insufficient rate <input type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown
Date the assessment was done: 2018-11-05
Additional information Correspondence to national targets and measures: NT 4, NT 5, NT 7, Measures 1–6, 8, 11, 14, 19. The NAP 2011–2015 was approved in 2011. Most of the measures planned therein were fully or partially implemented. The 2016–2020 Plan has not been approved. Certain laws and regulations were approved for implementation of the NSB or with reference to it. Implementation of the NSB is reinforced by the existing legislation of Ukraine (see Section I) and by development and adoption of a number of national regulatory documents. The NSB and these documents are linked only indirectly, but they are essential for biodiversity conservation and for meeting the ABTs. Among them are the Laws of Ukraine “On Environmental Impact Assessment” (2017) and “On Strategic Environmental Assessment” (2018), National Action Plan for combating land degradation and desertification (2016), National Strategy for Waste Management in Ukraine until 2030 (2017), Concept of the State Climate Change Policy Implementation until 2030 (2016), Forest Sanitary Regulations of Ukraine (2016), etc. Moreover, implementation of the previously approved Law of Ukraine “On the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015” was conducted during the reporting period.
Indicators used in this assessment Available reports and legislative framework of Ukraine were analyzed.

<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate <input checked="" type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue) <input type="checkbox"/> No monitoring system in place <input type="checkbox"/> Monitoring is not needed</p>
<p>ABT 18 – Traditional knowledge</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target <input type="checkbox"/> Progress towards target but at an insufficient rate <input checked="" type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 7, Measures 1, 5.</p> <p>There was no progress on the target. The national action plans and relevant laws and regulations do not cover the area of traditional knowledge for biodiversity conservation. There is no assessment of ethnic groups and communities which could depend on traditional knowledge of the use of natural biodiversity.</p>
<p>Indicators used in this assessment</p> <p>The assessment relies upon the analysis of the current legislative framework of Ukraine.</p>
<p>Level of confidence of the above assessment</p> <p><input checked="" type="checkbox"/> Based on comprehensive evidence <input type="checkbox"/> Based on partial evidence <input type="checkbox"/> Based on limited evidence</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate <input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue) <input type="checkbox"/> No monitoring system in place <input checked="" type="checkbox"/> Monitoring is not needed</p>
<p>ABT 19 – Science and research</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target <input checked="" type="checkbox"/> Progress towards target but at an insufficient rate <input type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>

Additional information

Correspondence to national targets and measures: NT 1, NT 2, NT 5, NT 6, Measures 16, 17, 20.

Ukraine has a strong expert and institutional basis for biodiversity research: NAS of Ukraine includes 23 research institutes and scientific institutions, protected area administrations; many higher education institutions have relevant departments; biodiversity is studied by scientific institutions of the Ministry of Ecology and the Ministry of Education and Science. The Ukrainian Antarctic Station “Vernadsky Research Base” is operating. Scientific, practical and methodical developments and the results of scientific research are communicated in the form of scientific publications. The National Commission for the Red Data Book of Ukraine is active; the I.I. Schmalhausen Institute of Zoology and the M. G. Kholodny Institute of Botany of NAS of Ukraine provide scientific support for the Red Data Book of Ukraine. Ukrainian scientific institutions and experts are engaged in species status assessments for the IUCN Red List, in international projects concerning biodiversity, and in the implementation process of the EU-Ukraine Association Agreement as experts. Nevertheless, the influence of scientists when it comes to improving legislation and developing environmental policy is limited. The ‘Chronicles of Nature’ (*Litopysy pryrody*), being the primary biodiversity monitoring tool for the protected areas, require standardization and open publication. Digitization of zoological and botanical collections at museums and institutions is partial.

Ukraine’s participation in GBIF is increasing, primarily through individual citizen science projects. There are three Ukrainian institutions registered in GBIF. Moreover, 8 out of the 49 botanical gardens and dendrological parks of national importance are members of Botanic Gardens Conservation International. In the Barcode of Life Data Systems, data from Ukraine are mainly input by foreign institutions. The Map of Life’s Species Status Information Index for birds shows an increase in coverage and index value (as a result of increasing information in GBIF). The National Oceanographic Data Center of the “Ukrainian Scientific Center of Ecology of the Sea” (UkrSCES) research facility provides datasets via the OBIS open platform, displayed in GBIF. However, large amounts of scientific data are not represented through global data platforms (notably, country-wide nesting records of the black stork (*Ciconia nigra*) in 2005–2015).

The UkrBIN (Ukrainian Biodiversity Information Network) open network for biodiversity data collection and sharing is advancing. There is a need for integration of the existing data of Ukrainian scientific institutions with global biodiversity data resources (especially, GBIF).

Indicators used in this assessment

Indicators were as follows: Ukraine's participation in international scientific projects and in updating the IUCN Red List, number of scientific publications and reports, Chronicles of Nature, public activity of specific expert groups and institutions, representation of Ukrainian data in international and national biodiversity databases (GBIF, UkrBIN, etc.).

Relevant websites, web links and files

- Antarctic Station “Vernadsky Research Base” – <http://uac.gov.ua/vernadsky-station/>
- Data on research publication by countries – <https://www.scimagojr.com/countryrank.php?area=1100®ion=Eastern%20Europe>
- Activities of the National Commission on the Red Data Book of Ukraine – <http://izan.kiev.ua/ncrb/>
- Ukraine in GBIF – <https://www.gbif.org/occurrence/charts?country=UA&advanced=1>
- Ukrainian publishers in GBIF – <https://www.gbif.org/publisher/search?country=UA>
- Botanic Gardens Conservation International – <https://bit.ly/2NAwIZ6>
- Barcode of Life Data Systems – <https://bit.ly/31YAJe2>
- Map of Life’s Species Status Information Index – <https://mol.org/indicators/coverage/Ukraine>
- Ciconia Survey in Ukraine – http://zuotov.blogspot.com/p/blog-page_19.html
- https://mol.org/species/map/Ciconia_nigra

<p>Level of confidence of the above assessment</p> <p><input type="checkbox"/> Based on comprehensive evidence <input checked="" type="checkbox"/> Based on partial evidence <input type="checkbox"/> Based on limited evidence</p>
<p>Please provide an explanation for the level of confidence indicated above</p> <p>There is a great bulk of information on the activities carried out by scientific institutions, but this information is scattered across various information resources.</p>
<p>Adequacy of monitoring information to support assessment</p> <p><input type="checkbox"/> Monitoring related to this target is adequate <input type="checkbox"/> Monitoring related to this target is partial (e. g. only covering part of the area or issue) <input checked="" type="checkbox"/> No monitoring system in place <input type="checkbox"/> Monitoring is not needed</p>
<p>ABT 20 – Resource mobilization</p>
<p>Category of progress towards the implementation of the selected target:</p> <p><input type="checkbox"/> On track to exceed target <input type="checkbox"/> On track to achieve target <input checked="" type="checkbox"/> Progress towards target but at an insufficient rate <input type="checkbox"/> No significant change <input type="checkbox"/> Moving away from target <input type="checkbox"/> Unknown</p>
<p>Date the assessment was done: 2018-11-05</p>
<p>Additional information</p> <p>Correspondence to national targets and measures: NT 4, 7.</p> <p>Public funding of environmental expenditures, in particular those pertaining to biodiversity conservation, is increasing. The State Environmental Protection Fund of Ukraine is in place. The overall number of budgetary programs in the field of environmental protection and the respective funding has increased. Since 2016, transparency of funding distribution has significantly improved through the introduction of the ProZorro public procurement system. In 2013–2016, the volume of financial support from international donors in the form of grant funding varied between \$5–23 million, depending on the year. However, today there is no integrated system for assessing the efficiency of the use of financial resources.</p>
<p>Indicators used in this assessment</p> <p>The assessment relies on the analysis of program expenditures under “2400000”, “2401500”, “2401270” budgetary programs in 2013–2018, financial reports on the implementation of budgetary program passports of the Ministry of Ecology. We used open data on budget expenditures related to environmental protection, the analytical tools of the Clarity Project website, and the BIP indicators for the assessment.</p>
<p>Relevant websites, web links and files</p> <ul style="list-style-type: none"> • Budgetary program passports of the Ministry of Ecology – https://menr.gov.ua/content/pasporti-byudzhethnih-program-ta-zviti-pro-ih-vikonannya.html • Electronic open source government e-procurement system PROZORRO – https://prozorro.gov.ua/ • Biodiversity-Related Aid – https://tabsoft.co/328qqUN • Procurement Results – https://clarity-project.info/tenders?classification=73300000-5&entity=37552996# • BIP Indicators – https://www.bipindicators.net/indicators/official-development-assistance-provided-in-

support-of-the-convention

Level of confidence of the above assessment

- Based on comprehensive evidence
- Based on partial evidence
- Based on limited evidence

Adequacy of monitoring information to support assessment

- Monitoring related to this target is adequate
- Monitoring related to this target is partial (e. g. only covering part of the area or issue)
- No monitoring system in place
- Monitoring is not needed

Section IV. Description of the national contribution to the achievement of each global Aichi Biodiversity Target

ABT 1 – Biodiversity awareness
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>This target is implemented locally, but it may manifest itself on the global level through an increase in overall awareness of the value of biodiversity and comprehension of its connection with the well-being and health of people. In 2018, Ukraine started working on providing open public access to environmental data by adopting the concept of the “Open Environment” system. The Ministry of Ecology and Natural Resources of Ukraine grants access to their reports and datasets. Ecological passports of the regions are being implemented and are freely available for many regions. Since 2017, public hearings on EIA of planned project activities have been mandatory, and the documentation is bound to be openly accessible through the Unified National EIA Registry.</p> <p>State agencies and public associations create online resources to inform the public on important environmental issues: municipal waste, polluting enterprises (Measure 12); state of water resources (Measure 6: Geportal “Water Resources of Ukraine”); species distribution (Measure 20). The online portal Data Center “Biodiversity of Ukraine” and the Ukrainian Biodiversity Information Network UkrBIN are successfully functioning and accumulating data (Measure 20).</p> <p>Dissemination of knowledge on biodiversity is also carried out in educational institutions (Measure 1). The current National Strategy for the Development of Education in Ukraine for the period until 2021 emphasizes the “greening” of education in accordance with the principles of sustainable development. The protected area institutions (nature reserves, national nature parks, botanical gardens, zoos, etc.) play an important role of environmental education centers; one of their primary objectives is to raise awareness on the value of biological and landscape diversity, cultivate environmental consciousness, and nurture respect for nature.</p>
<p>Country’s contributions to the achievement of the ABTs and Sustainable Development Goals</p> <p>The above mentioned measures support the country's efforts concerning the implementation of the Global SDGs (SDG 4 and SDG 12 directly, SDG 11 and SDG 13–16 indirectly).</p>
ABT 2 – Biodiversity mainstreaming
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>Ukraine is moving towards the integration of biodiversity values into strategies of national and regional development. Implementation of the action plan pertaining to the Ukraine-EU Association Agreement (in force since September 1, 2017) became an important component for the mainstreaming of environmental issues. This paved the way for implementation of the European legislation on biodiversity conservation in Ukraine and for extension of the European legal space in the Black Sea region (Measure 2).</p> <p>Efforts to improve national legislation on waste management and water resources management based on the basin principle to prevent water pollution are underway. During 2017–2018, a number of laws and regulations on water resources, river development, and transboundary basins were adopted (Measures 4, 6, 12).</p> <p>The Emerald Network is growing. Efforts directed at protection of migratory species of wild birds, implementation of the Birds and Habitats Directives, and endorsement of environmental education are in progress. There is progress in identifying the Emerald Network sites and keeping the Red Data Book of Ukraine (Measures 16, 17).</p> <p>Adoption of the Law of Ukraine “On Environmental Impact Assessment” was an important step towards the ABT 2. Since 2017, environmental impact assessment became a prerequisite for decision making concerning</p>

planned economic activities which might have a significant environmental impact. The UNECE Strategic Environmental Assessment toolkit is implemented through the Law “On Strategic Environmental Assessment” adopted in 2018 (Measure 3).

Financial support of the EU is mobilized to implement ABT 2:

- APENA: the EU project “Support to Ukraine in approximation of the EU environmental acquis” (since 2015) aims to assist the Ministry of Ecology and Natural Resources of Ukraine in developing laws and bylaws, raising the institutional capacity of the Ministry and other stakeholders and enhancing public awareness (<http://www.apena.com.ua/index.php/en/>).
- EMBLAS I and EMBLAS II: the “Environmental monitoring of the Black Sea” projects that are funded through the EU/UNDP technical assistance (<http://emblasproject.org/publications-reports>).

The engagement of public organizations is growing (Measures 2, 7, 12, 16, 17, 20).

Moreover, Ukraine has an active Center for SDG Development, which brings together over 40 companies. The Center collaborates with many state-owned enterprises, educational institutions, etc. to disseminate the ideas of social responsibility, including environmental responsibility.

Country’s contributions to the achievement of the ABTs and Sustainable Development Goals

Incorporation of biodiversity into national development strategies and improving the quality of the legal and regulatory framework, which contributes to the achievement of SDGs 1, 6 and 11.

ABT 3 – Incentives and subsidies

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

A set of legal, regulatory and financial measures were taken to support the “greening” of various areas of business and economic activity (Measure 5).

The sector of renewable energy in Ukraine is growing, and so is the number of facilities generating electricity according to the “green” (feed-in) tariff.

Since 2014, the “Warm Loans” state program has been active (providing support for energy-efficient housing), with loans provided by four banks in Ukraine. With the support of international donors, several major loan lines aiding the implementation of renewable energy sources and energy efficiency are available in Ukraine (Ukraine Sustainable Energy Lending Facility, the “Innovative vouchers” program; the Eastern Europe Energy Efficiency and Environment Partnership Fund; the SME finance facility of the German-Ukrainian Fund (GUF)). In particular, 133 projects in energy efficiency and renewable energy were implemented over the course of 2007–2016 through the UKEEP (“Ukraine Energy Efficiency Program”) loan line of the EBRD. The budgetary program “Financial support of target projects in the ecological modernization of enterprises” is in place.

Ukrainian standardization system has been reformed, in accordance with the implementation of the Ukraine-EU Association Agreement. The Laws of Ukraine “On Standardization” and “On Technical Regulations and Conformity Assessment” were adopted; they provide a legal framework for certification and standardization of products and enterprises and endorse the establishment of certified environmental management systems in accordance with the ISO standards and introduction of the products into “green markets”. Ukraine is showing progress in standardization and certification of production in accordance with the ISO standards. The EU’s “Greening Economies in the Eastern Neighbourhood” (EaP GREEN) program was launched to support strategic environmental assessment and promote the greening of small and medium-sized enterprises.

Country’s contributions to the achievement of the ABTs and Sustainable Development Goals

The measures taken are in line with SDGs 7, 12 and 17.

ABT 4 – Sustainable production and consumption

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

A set of legal, financial and policy measures were conducted to increase the use of renewable sources in energy production. At the legal level, a system of incentives for the renewable energy production was created: 1) “green” (feed-in) tariff that applies to solar, wind, biomass, and small hydro energy sources, 2) tax benefits; 3) preferential conditions for joining the power grid (Measure 5).

In 2017, the “Energy Strategy of Ukraine until 2035” was adopted; it states that renewable sources in electricity generation should account for 7% by 2020 and should exceed 13% by 2025 (Measure 5).

The measure “Implementation of Integrated Approaches in Water Resources Management Based on the Basin Principle” was carried out. The national water resources management system is going through reforms. Ukraine developed the legislative framework to implement the EU Water Framework Directive; the basins were identified, and dedicated basin management authorities, responsible for water resources restoration and implementation of river basin management plans, were established. The National Target Program for Developing Water Management and Environmental Rehabilitation of the Dnipro River Basin for the Period up to 2021 was adopted (Measure 6).

Country’s contributions to the achievement of the ABTs and Sustainable Development Goals

The measures are consistent with SDGs 7, 11, 12 and 13.

ABT 5 – Habitat fragmentation and degradation

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

A comprehensive measure on identification and conservation of ancient and primeval forests of the Carpathians was implemented, which resulted in amendments to the current legislation aimed at conservation and protection of virgin forests; the Ministry of Ecology and Natural Resources of Ukraine approved the “Methodology for identifying forest areas as primeval forests, quasi-primeval forests, and natural forests”; the “Ancient and primeval forests of the Ukrainian Carpathians” map was created. The effort was initiated and executed mainly through the involvement of a number of NGOs. Over 93,000 hectares of virgin and old-growth forests or quasi-virgin forests were identified; these forests were barely or not at all exposed to anthropogenic influence, and the legislative framework for their further protection was established. Ukraine’s territory is located within one of the most anthropogenically transformed forest biomes in the world, temperate broadleaf and mixed forests; 46% of its area globally has been altered by humans; hence, conservation of virgin forest areas is of global importance (Measure 7).

The Forest Sanitary Regulations of Ukraine were improved, including the prohibition of clearcut logging for sanitary purposes within all the protected areas, except for the transition zone of the national parks and the anthropogenic landscapes of the biosphere reserves, by indicating the corresponding norm in the new edition of the Forest Sanitary Regulations (2016). Cutting of hollow, deadwood, and damaged trees is forbidden in nature reserves and other areas with comparable protection status. Relevant norms aim to enhance the conservation regime within the protected forest areas (Measure 8).

Country’s contributions to the achievement of the ABTs and Sustainable Development Goals

The measures correspond to SDG 15.2.

ABT 6 – Sustainable fisheries

Please describe how and to what extent your country has contributed to the achievement of this Aichi

Biodiversity Target and summarize the evidence used to support this description:

The system of granting the right to use aquatic bioresources has been streamlined. Since 2016, a differentiated system for setting the allowable catch size has been in place. In 2015, new environmental controlling authorities, fishing patrols, were introduced. Protection of sturgeons is conducted in the Lower Danube region by preventing and combating illegal fishing and trade in sturgeon products; non-specialized fisheries in the Danube avandelta using nets with a large mesh size were prohibited.

Commercial fisheries in the Dnipro reservoirs and the Black Sea are mainly harvesting widespread and introduced species. The structure of the commercial ichthyofauna of the Dnipro reservoirs retains the signs of stability; this generally means that the strategic mission of preventing the destabilizing impact of fishing in the Dnipro basin, one of the largest river basins in Europe, is being accomplished (Measure 9).

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional)

Ukraine is a member of the General Fisheries Commission for the Mediterranean (GFCM), the Northwest Atlantic Fisheries Organization (NAFO), and the Commission for the Conservation of Antarctic Marine Living Resources (CCALMR); the country participates in global assessments of tuna, shark, squid, and fishery resources of the Black Sea and the Antarctic. Ukraine also contributes to the policy of sustainable use of resources of the oceans.

Owing to the efforts of the GFCM Working Groups, for the first time the scientific data on the status of commercial fish populations and some invertebrates in the Black Sea was consolidated. New opportunities for biodiversity conservation in Ukraine have emerged.

Country's contributions to the achievement of the ABTs and Sustainable Development Goals

Measures taken towards the achievement of ABT 6 are also aiming for SDGs 2, 12, and 14.

ABT 7 – Sustainable resource management

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Forest certification according to the FSC standards is dynamically implemented to ensure sustainable forest management. In the reporting period, the area of certified forests increased from approx. 1.5 million hectares in 2013 to 4.3 million hectares in 2018 (39% of the total forest area of Ukraine). As of 2018, Ukraine is fifth in Europe with regards to the certified forest area (#10 back in 2013) (Measure 8).

Measure 10, “Ex situ breeding of native fish species”, involves breeding fish species in aquaculture. In line with the national program “Breeding of aquatic bioresources in inland reservoirs and the Azov-Black Sea basin”, the main directions for artificial replenishment of populations, the status of which can be defined as under threat, were identified. The state fish-breeding farms were directed on the production of aboriginal fish. Since 2013, the share of public funding for *ex situ* breeding of native species was steadily increasing; during the budget allocation for fisheries, the priority was given to aboriginal species. Over the course of 2000–2017, the state fish-breeding complexes released more than 66 million specimens of young fish of various species into the reservoirs of Ukraine. Private farms that, *inter alia*, breed fish seed of native species (primarily, brown trout) for compensatory restocking of rivers in the Carpathian region also play an important role.

Country's contributions to the achievement of the ABTs and Sustainable Development Goals

The implemented measures support the realization of SDGs 14 and 15.

ABT 8 – Pollution
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>Within the framework of the Ukraine-NATO cooperation program and the implementation of the provisions of the Ukraine-EU Association Agreement aiming to reduce environmental pollution, a radioactive waste burial ground in Zhytomyr region (2016–2017) was liquidated, and a new project in Kirovohrad region was launched. New requirements for motor gasoline and diesel of environmental standards Euro3 - Euro5 were established. Implementation of a number of EU Directives concerning water quality and waste treatment is envisaged: the Water Framework Directive, the Drinking Water Directive, the Urban Waste Water Treatment Directive, and the Nitrates Directive concerning the protection of waters against pollution caused by nitrates from agricultural sources (Measure 12).</p> <p>There are NGOs and initiatives in Ukraine that promote sorting of household waste and encourage local administrations to act on the matter. Regional waste management programs have been developed for many regions of Ukraine (Measure 12).</p> <p>Ukraine initiated two UN resolutions on environmental protection and mitigation of consequences in areas affected by armed conflict: “Protection of the environment in areas affected by armed conflict” (UNEP/EA.2/Res.15, August 4, 2016) and “Pollution mitigation and control in areas affected by armed conflict or terrorism” (UNEP/EA.3/Res.1, January 30, 2018).</p>
<p>Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional)</p> <p>Construction of the new safe confinement over the destroyed Reactor 4 of the Chernobyl NPP commenced in 2012 (https://chnpp.gov.ua/en/activity/shelter-object-transformation/project-nsc-construction) in order to make the area around it more environmentally safe (Measure 12).</p>
<p>Country’s contributions to the achievement of the ABTs and Sustainable Development Goals</p> <p>The measures support the attainment of SDGs 3, 6 and 9.</p>
ABT 9 – Invasive alien species
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>According to the “List of regulated pests”, quarantines of certain territories are regularly announced, in particular for the physical extermination of invasive alien species. Measures are taken to deal with invasive species in inland water bodies. As of today, about 10 alien species established self-sustaining populations. They account for up to 15% of juvenile fish in the the Dnipro reservoirs; several alien species are intentionally released there. Increasing the control over the activities of aquaculture enterprises engaged in the cultivation of non-native species has become an important way of overcoming this problem. The Law of Ukraine “On Aquaculture” (2013) defines the notions of “alien” and “non-native” species in the context of aquatic organisms and the concept of “closed-containment aquaculture”. Requirements for the cultivation of alien species were set in order to prevent them from infiltrating the natural environment (Measure 12).</p>
<p>Country’s contributions to the achievement of the ABTs and Sustainable Development Goals</p> <p>Reaching ABT 9 is consistent with SDG 15.8.</p>
ABT 10 – Ecosystems vulnerable to climate change
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi</p>

Biodiversity Target and summarize the evidence used to support this description:

A number of successful projects on restoration of natural areas were conducted: restoration of the hydrological regime of the “Valley of daffodils” in the Carpathian Biosphere Reserve (Measure 14), canal construction on the territory of the “Tyligulskyi Liman” Ramsar site, construction of artificial islands in the “Tuzly Lagoons” NNP, wetland restoration in the “Zacharovany Krai” NNP. Ecosystem restoration of the “Kartal Lake” Ramsar site in the Lower Danube region was carried out (Measure 15).

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional)

Initial assessment of the ecological status of seawater and the impact resulting from human activities was conducted in the frames of the EMBLAS I and EMBLAS II projects.

There are unique marine ecosystems along the coast of Ukraine, the phyllophora fields, representing the world’s largest accumulation of unattached phyllophora (red algae). Two marine protected areas of national importance were established for protection and restoration of flora and fauna within the Ukrainian Black Sea EEZ: the “Zernov's Phyllophora field” marine reserve (4,025 km²) and the “Small Phyllophora field” (385 km²).

Country’s contributions to the achievement of the ABTs and Sustainable Development Goals

Measures taken to achieve ABT 10 also support SDGs 14 and 15.

ABT 11 – Protected areas

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

During 2013–2017, 268 new protected areas were established in Ukraine with a total area of 3,342 km². Currently, protected areas in Ukraine occupy about 6.6% of land and inland waters and cover 4 thousand km² within the marine EEZ of Ukraine. There are several transboundary biosphere reserves (Mura-Drava-Danube TBR, East Carpathians TBR, and West Polesie TBR).

The area-based protection target envisaged in the State Strategy for Regional Development for the period until 2020 (2014) aims to increase the protected areas to 15% of Ukraine’s territory by early 2021, in other words, make it 2.5 times larger than in 2013. Currently, data on the protected area increase is among the annual performance indicators of regional state administrations.

Measures to expand the Emerald Network of Ukraine are underway. So far, a list of 271 Emerald Network sites in Ukraine was approved; their total area covers 10% of the country. Six habitats were granted the ‘Wetland of International Importance’ status; currently, the total number of Ramsar sites in Ukraine is 39, and their total area is over 786 thousand hectares. The Action plan for the implementation of the Ramsar Convention in Ukraine for 2016–2021 was approved. The Important Bird Areas network in Ukraine currently includes 166 territories with a total area of 2.5 million hectares. During the reporting period, Ukrainian scientists identified key underground habitats of bats, the list of which (List of internationally important underground sites) is being updated in implementation of the EUROBATS Agreement. In particular, 12 new habitats were identified (now, the list includes 47 sites). Moreover, five Ecologically or Biologically Significant Marine Areas in the Black Sea were identified in Ukrainian waters in line with the implementation of the CBD; one of them (the Balaklava area) is important, above all, for cetaceans.

Measures to determine protection status include granting a legal status (setting areas aside for conservation), identifying new Emerald Network sites, identifying wetlands of international importance (Ramsar Sites), developing the national ecological network, and identifying areas and sites of international significance for conservation of fauna (birds, bats, cetaceans) (Measure 16).

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional)

The largest newly created protected areas of Ukraine are the Chernobyl Radiation and Ecological Biosphere Reserve (227 thousand hectares, Kyiv region); and the Nyzhniodniprovskii National Nature Park (more than 80 thousand hectares, Kherson region).

Beech forests of Ukraine, located within the NRF territories, were listed as a UNESCO World Heritage site “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”. A joint Ukrainian-Polish nomination to establish the Roztocze Transboundary Biosphere Reserve has been prepared.

The Emerald Network includes most of the natural ecosystems of the northern Black Sea coastal area, which is an important area for migration and wintering of wading and waterfowl species and birds of prey from the central and northern parts of Europe. Moreover, natural areas in the regional centers of endemism were granted the protection status (Crimea, Podillya, the Donets Ridge, and the chalk slopes in eastern Ukraine).

Country’s contributions to the achievement of the ABTs and Sustainable Development Goals

Measures taken to achieve ABT 11 support SDGs 14 and 15.

ABT 12 – Species and extinctions

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Ukraine is a party to a number of international treaties and takes measures to implement them, namely: the CBD; UNFCCC; UNCCD; CITES; the Ramsar Convention; CMS and the subsidiary agreements (AEWA, ACCOBAMS, EUROBATS; the Memoranda of Understanding concerning Conservation Measures for the Aquatic warbler, the Great bustard, and the Slender-billed curlew); the Bern Convention on the Conservation of European Wildlife and Natural Habitats; the Convention on the Protection and Sustainable Development of the Carpathians; the Convention on the Protection of the Black Sea Against Pollution.

Ukraine participates in the development and adoption of resolutions and decisions of the parties pertaining to the implementation of the international treaties.

In order to harmonize the national legislation with the EU regulations, a number of amendments were made to the Laws of Ukraine “On Fauna”, “On Flora”, “On the Red Data Book of Ukraine”, “On the Ecological Network of Ukraine”, “On Game Management and Hunting”, and “On Nature Reserve Fund of Ukraine”, namely: prohibition of uncontrolled burning of dry vegetation, cruel fishing and hunting gears (including snares, traps, electric fishing rods), ploughing of habitats of wild animals and destruction of hollow trees; legal enforcement of the “quiet season” during the breeding season of wild animals. Protection status was given to elk (Measure 17).

The sites belonging to the NRF and the Emerald Network cover the majority of endemic and rare species’ distribution, particularly in the mountainous and coastal areas. Sterlet breeding is conducted. Measures to control the international transfer of flora and fauna are enhanced (Measures 10, 17).

Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional)

The “Black Stork Conservation” and “White Stork Conservation” programs are in place, financial means are provided to support local populations and subpopulations of the European bison, a ban on catching common bottlenose dolphins for dolphinarium under the guise of animal rehabilitation is in force, action plan for conservation of the white-tailed eagle was developed. There are winter and August waterfowl censuses in the Azov-Black Sea region of Ukraine, as well as population status assessments of bats, cetaceans, and sturgeon species.

The assessment of status of biota in the open part of the Black Sea was done. In 2018, the Ministry of Ecology and Natural Resources of Ukraine endorsed the research on summarizing data on plants and animals listed

<p>in the Red Data Book of Ukraine, as well as on plant and animal species and habitats identified as priority by the Bern Convention. Research on certain threatened species of flora and fauna is being conducted, along with the assessment of their abundance and population trends and communication of this information to the global conservation community via scientific publications and online resources (UkrBIN).</p>
<p>Country's contributions to the achievement of the ABTs and Sustainable Development Goals</p> <p>Measures designed for implementation of ABT 12 are in line with SDGs 15.5, 15.7, and 15.c.</p>
<p>ABT 13 – Genetic diversity</p>
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>The Concept of the State Targeted Program on Agricultural Sector Development for the period up to 2020 (2015) was approved to ensure the conservation of genetic diversity of cultivated plant varieties, farm and domesticated animals and their wild relatives, to minimize genetic erosion, and to preserve agrobiodiversity. The project “Conservation and development of dual-purpose cattle breeds in Eastern Europe” is underway. Over the course of 2011–2017, the database on these livestock breeds of Ukraine has been updated in the European Farm Animal Biodiversity Information System (EFABIS). A database of passport data of the samples of the National Bank of Plant Genetic Resources of Ukraine named “Henofond roslyn” (“Plant gene pool”) was established according to the standards of the international network of gene banks (Measure 18).</p>
<p>Country's contributions to the achievement of the ABTs and Sustainable Development Goals</p> <p>The measures are consistent with SDG 2.5.</p>
<p>ABT 14 – Ecosystem services</p>
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>Classification and evaluation of ecosystem services are commenced.</p>
<p>Country's contributions to the achievement of the ABTs and Sustainable Development Goals</p> <p>The measures are in line with SDG 15.9.</p>
<p>ABT 15 – Climate resilience, sequestration and restoration</p>
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>In 2016, the Paris Agreement was ratified within the UNFCCC, the Concept of the State Climate Change Policy Implementation until 2030 was approved, and the National Action Plan to Combat Land Degradation and Desertification was adopted; the latter includes measures on restoration and protection of forests and wetlands, combating desertification, and regionalization of land with consideration for the effects of climate change (Measure 19).</p> <p>Within the regional program “European Neighborhood and Partnership Instrument East Countries Forest Law Enforcement and Governance II”, an assessment of ecosystems provided by Ukrainian forests was held and suggestions regarding the possible mechanisms for payment for ecosystem services were made (Measure 19).</p>
<p>Please describe other activities contributing to the achievement of the Aichi Biodiversity Target at the global level (optional)</p>

<p>Wetlands are notable among the ecosystems that remove and store carbon and play a crucial role in the CO₂ cycle and balance on the planet. Ukraine's peat reserves amount to 2,260 million tonnes, which is 0.4% of the planet's reserves and is equivalent to $66.2 \cdot 10^{18}$ J; that is three times the energy of Ukrainian forests ($29.48 \cdot 10^{18}$ J). Wetlands in Ukraine were adversely affected by drainage in the last century, but recently some pilot projects on peatland restoration were initiated.</p> <p>Ukraine submitted the Intended Nationally Determined Contributions (NDC) to the UNFCCC (currently, it requires revision), and in 2018, Ukraine adopted the Low Emission Development Strategy.</p>
<p>Country's contributions to the achievement of the ABTs and Sustainable Development Goals</p> <p>Measures taken to achieve ABT 15 also support the achievement of SDG 13.</p>
<p>ABT 16 – Access and benefit sharing</p>
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>The Nagoya Protocol has been signed by Ukraine, and domestic-level ratification procedures are in progress.</p>
<p>ABT 17 – National biodiversity strategies and action plans</p>
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>The National Action Plan for Environment Protection for 2011–2015 was developed and adopted in implementation of the NSB; it outlines the measures that support the attainment of the seven national targets. Most of the measures envisaged by this plan have been implemented fully or partially (some of them were not carried out due to the lack of funding).</p> <p>During the reporting period, a few legal and regulatory documents were adopted to reach the national targets. Moreover, linkages with the NSB are indicated in the annual national programs under the auspices of the Ukraine-NATO Commission for the years of 2013, 2015, 2016 and 2017 (approved by the relevant orders of the President of Ukraine). A number of successful projects were carried out within the national programs under the auspices of the Ukraine-NATO Commission. The environmental passports of all regions of Ukraine for 2016 and 2017 were compiled and made publicly available (Measure 2).</p> <p>Implementation of the NSB is underpinned by the active legislation of Ukraine and by the development and adoption of a set of national laws and regulations that are indirectly associated with the NSB and are crucial for biodiversity conservation and reaching the ABTs. Among them are the Laws of Ukraine On Environmental Impact Assessment” (2017) and “On Strategic Environmental Assessment” (2018), National Action Plan for combating land degradation and desertification (2016), National Strategy for Waste Management in Ukraine until 2030 (2017), Concept of the State Climate Change Policy Implementation until 2030 (2016), Forest Sanitary Regulations of Ukraine (2016), etc. (Measures 3, 8, 11, 12, 14).</p>
<p>Country's contributions to the achievement of the ABTs and Sustainable Development Goals</p> <p>The measures correspond to SDGs 6, 7, 9, 11, 12, 13, 14, 15.</p>
<p>ABT 18 – Traditional knowledge</p>
<p>Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:</p> <p>The subject of traditional knowledge for biodiversity conservation is not indicated in any national action plans or current laws and regulations of Ukraine.</p>

ABT 19 – Science and research

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Ukraine has a strong expert and institutional basis for biodiversity research. Scientific, practical and methodical developments and the results of scientific research are communicated in the form of scientific publications. The National Commission on the Red Data Book of Ukraine is active. Ukrainian scientists are engaged in species status assessments for the IUCN Red List and in international projects concerning biodiversity.

Since 2017, the public online portal Data Centre “Biodiversity of Ukraine” has been in place; the open unified network for biodiversity data collection and sharing UkrBIN (Ukrainian Biodiversity Information Network) was launched. UkrBIN actively reaches out to the public, disseminates biodiversity knowledge, and encourages public participation in observations of alien and invasive species. The UkrBIN taxonomic data is part of the Catalogue of Life, and the invasive alien species observations are communicated to the European Alien Species Information Network (EASIN). The UkrBIN team also plans to integrate Ukraine’s biodiversity data into the Global Biodiversity Information Facility (GBIF).

The Ukrainian Antarctic Station “Vernadsky Research Base” is operating. For the first time in years, the call for participation in the expedition was held without any gender restrictions (Measure 20).

Country’s contributions to the achievement of the ABTs and Sustainable Development Goals

Measures taken towards the achievement of ABT 19 are in line with SDG 9 and SDG 15.

ABT 20 – Resource mobilization

Please describe how and to what extent your country has contributed to the achievement of this Aichi Biodiversity Target and summarize the evidence used to support this description:

Public funding of environmental expenditures, in particular those pertaining to biodiversity conservation, is increasing. The State Environmental Protection Fund of Ukraine is in place. The overall number of budgetary programs of environmental protection and the respective funding have increased. Over the course of 2013–2016, the volume of financial support from international donors in the form of grant funding varied between \$5–23 million, depending on the year.

Country’s contributions to the achievement of the ABTs and Sustainable Development Goals

Measures taken to achieve ABT 20 also support the attainment of SDGs 1 and 17.

Section V. Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation

Does your country have national targets related to the GSPC Targets?

Yes. Please provide details on the specific targets below:

NT 5 corresponds to the targets of the Global Strategy for Plant Conservation: “Halting the loss of biological and landscape diversity and establishing the ecological network”.

Please provide information on any active networks for plant conservation present in your country.

- Ukrainian Botanical Society — brings together scientists and other citizens interested in botany and mycology
- Council of the Botanical Gardens and Dendroparks of Ukraine — as of 2016, it unites 49 institutions, 30 of them are of national importance
- Public initiatives: “Save the Ukrainian steppes!”, UkrBIN
- Ukrainian Nature Conservation Group – UNCG
- Facebook groups “Ukrainian Botanical Group”, “Flora of Ukraine”.

Please describe the major measures taken by your country for the implementation of the Global Strategy for Plant Conservation

Please see sections 2.6, 2.7, 2.8, 2.13, 2.15, 2.20, and other measures towards the achievement of NT 5. Moreover, the key documents relevant to the Global Strategy for Plant Conservation were translated into Ukrainian and analyzed (2014, http://www.botany.kiev.ua/doc/ch_kn_konf_2014.pdf). Conferences to promote and implement the Global Plant Conservation Strategy are being organized.

GSPC Target 1

An online flora of all known plants.

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

New editions of “Flora of Ukraine”, identification guides, and nomenclature summaries are being prepared (coordinated by the M.G. Kholodny Institute of Botany, NAS of Ukraine). Launching and gradually filling the “UkrBIN: Ukrainian biodiversity information network” with photos and establishing the “Flora of Ukraine” Facebook group are a demonstration of significant progress towards reaching this target.

GSPC Target 2

An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

This target is partially achieved through the preparation of the new edition of the Red Data Book of Ukraine. The M. G. Kholodny Institute of Botany (NAS of Ukraine) is coordinating these studies. They focus on identifying and providing detailed information on the current distribution, status, and structure of populations, along with the ecological-coenotic characteristics of rare and endangered species. The national open data network UkrBIN facilitates the success of this task.

The biodiversity inventory at the plant community level is conducted owing to the existence of the Green Data Book of Ukraine. It is an official document that operates based on the [Provisions on the Green Data Book of Ukraine](#).

To date, a list of natural habitats pursuant to Annex I of the Habitats Directive and Resolution 4 of the Bern Convention has been drawn up for Ukraine. According to the proposals developed by Ukraine ([Ukrainian proposal for 4 additional habitats to Resolution № 4 \(1996\). T-PVS/PA \(2018\) 7](#)), Resolution 4 of the Bern Convention was revised to include several new habitats: E1.13 Continental dry rocky steppic grasslands and dwarf scrub on chalk outcrops, X36 Depressions (pody) of the Steppe zone, and G3.4G Pine forests on chalk.

However, in order to identify the rare biotopes, it is essential to develop a general biotope classification (Didukh et al. 2012, 2016). The first National Habitat Catalogue of Ukraine has been published; it includes all the variety of biotopes of Ukraine (217 types) and is compatible with the habitat types of Annex I of the Habitats Directive and Resolution 4 of the Bern Convention. The next step towards the implementation of this task should be the allocation of areas that meet the requirements of Natura 2000 and the Emerald Network, as well as checking the already allocated cores of the National Ecological Network of Ukraine against these requirements.

- Biotopes (Habitats) of Ukraine: scientific basis of research and inventory results. Workshop Proceedings (Kyiv, 21-22.03.2012) / Ya. Didukh, A. Kagalo, B. Prots (eds.) – Kyiv-Lviv, 2012. – 194 p. [in Ukrainian]
- Biotopes of the Crimean Mountains / Ya. Didukh (ed.) – Kyiv: NVP Interservice, 2016. – 292 p. [in Ukrainian]
- Important Plant Areas of Ukraine / V.A. Onyshchenko (ed.) – Kyiv: Alterpress, 2017. – 376 p.
- National Habitat Catalogue of Ukraine / A.A. Kuzemko, Ya.P. Didukh, V.A. Onyshchenko, Ya. Scheffer (eds.) – Kyiv: NPE Klymenko Yu.Ya., 2018. – 442 p. – <https://menr.gov.ua/news/33344.html>

GSPC Target 3

Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

In 2018, the Ministry of Ecology of Ukraine approved the methodology of developing proposals for the establishment of protected areas and objects of the Nature Reserve Fund ([Order of the Ministry of Ecology № 306 of August 30, 2018](#)): scientific justification for a protected area involves providing information on species and ecosystem diversity of flora and its conservation status, rare and endangered plant species (listed in the Red Data Book of Ukraine, the regional protection lists, and the international lists (the IUCN Red List, annexes to

various conventions, etc.), common and rare plant communities listed in the Green Data Book of Ukraine.

Order of the Ministry of Ecology № 161 of May 18, 2018 (registered at the Ministry of Justice on June 11, 2018, № 707/32159) approved the Methodology for identifying forest areas as primeval forests, quasi-primeval forests, and natural forests. The methodology describes the main requirements and procedure for identification of forests as primeval, quasi-primeval, or natural; moreover, forest management organizations, scientific and public organizations, and protected area administrations apply this methodology in basic, continuous forest management, or scientific research aiming to introduce protection measures for such forests.

In addition, the [Ukrainian Biodiversity Information Network UkrBIN](#) has been in place since 2017.

GSPC Target 4

At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Increase in the percentage of protected areas in Ukraine during the reporting period indicates certain progress (see Section 2.16 and Section 3.11). The protected area increased by 9% over the course of 2013–2017; now, it corresponds to 6.6% of the total area of the country.

The countrywide comparison of the protected area coverage against the botanical-geographical zoning has not been carried out. A fairly representative network of the protected areas was established in the so-called Carpathian-Alpine mountainous province (European broad-leaved forest region) and the Mountainous Crimea (Mediterranean region); other regions of Ukraine require expansion of the protected area and/or establishment of new higher-category protected areas, namely biosphere reserves, nature reserves, and national nature parks (Didukh et al., 2016).

- Didukh Ya.P., Vakarenko L.P., Vynokurov D.S. Evaluation of Ukraine network of natural reserve objects representativeness (botanical aspect) // Ukrainian Geographical Journal. - 2016, № 2. - P. 13–19. [in Ukrainian]

GSPC Target 5

At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Priority areas for creation of new PAs include the following: natural areas with various types of vegetation; sites that are home to nationally and/or internationally protected plant species, plant communities listed in the Green Data Book of Ukraine, or rare habitats listed in Annex I of the Habitats Directive and/or Resolution 4 of the Bern Convention (see Section 2.17 – Species status assessment, protection and recovery of species).

GSPC Target 6

At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Today, Ukraine does not have management plans for sustainable development of agricultural land, undistributed land, or other cadastral categories. The only exception is the Pyriatynskyi NNP, which in September 2018 presented a natural resources management plan, which was developed following the EU standards.

GSPC Target 7

At least 75 per cent of known threatened plant species conserved in situ

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

An inventory of the diversity of rare and endangered plants within the protected areas has been conducted for nature reserves and national nature parks, but the protected areas falling under other categories have not been studied enough. The Ministry of Ecology of Ukraine can coordinate the second phase (protection of rare plants growing outside the existing protected areas) in cooperation with members of the Ukrainian Botanical Society.

There are several dedicated programs designed for the protection of plants - in particular, the Program for conservation and restoration of the common yew in the NNP "Skole Beskids" for the period until 2018.

- Phytodiversity of nature reserves and national nature parks of Ukraine. P.1 and P.2. Phytodiversity of nature reserves and National nature parks / V.A. Onyshchenko, T.L. Andrienko (eds.). – Kyiv: Phytosociocentre, 2012. - 406 p. [in Ukrainian]

GSPC Target 8

At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programs

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

The botanical gardens and arboreta of Ukraine are actively pursuing the target (see Section 2.17) and are housing the collections of rare species. Moreover, nearly 1.2 thousand hectares of seed orchards were created for *ex situ* preservation of plus trees. Of those, 1,176.1 hectares were certified (as of January 1, 2018).

Successful implementation requires the creation of an open database of programs on restoration and rehabilitation of natural ecosystems (in the next 1–2 years) to coordinate the reintroduction and repatriation efforts and achieve the target indicators by 2022. Currently, the National Center for Plant Genetic Resources of Ukraine stores primarily the seeds of cultivated plants: it is essential to supply this storage with seeds of rare and endangered plant species of Ukraine.

GSPC Target 9

70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

There are some data regarding the representation of species within the NRF territories, in the collections of research institutes, botanical gardens, arboretums, and in living seed and plant tissue collections. As of November 1, 2018, 259 collections and 1,750 valuable specimens of field crops were registered.

Predominantly, the gene pool of cultivated plants is preserved. The National Center for Plant Genetic Resources of Ukraine is functioning within the V.Ya.Yuryev Plant Production Institute of NAAS. The National Bank of Plant Genetic Resources of Ukraine and the National Seed Storage facility are in place. As of late 2017, 70,000 specimens altogether (732 species of cultivated plants and their wild relatives) are stored in a viable and genetically authentic state. The facilities of the Plant Genetic Resources system of Ukraine house 32 thousand seed samples (136 crops). Moreover, field collections are in place. Indigenous species of socio-economic importance (approx. 10–12%) are stored in botanical gardens, arboreta, collections of higher education institutions, seed stations, green farms, research institutes and research stations focusing on forestry and medicinal plants.

GSPC Target 10

Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

The “List of regulated pests” (2006) has been compiled; quarantines of these species are periodically an-

nounced.

Active public initiatives on invasive alien species on Facebook:

- UkrBIN: Ukrainian Biodiversity Information Network (<https://www.facebook.com/groups/ukrbin.info/>),
- Flora of Ukraine (<https://www.facebook.com/groups/floraofukraine/>),
- Ukrainian Botanical Group – <https://www.facebook.com/groups/flora.ukraine>,
- “Stop Ambrosia in Ukraine” (<https://www.facebook.com/ambrosiaua/>), and others.

By the end of 2018, the USRIEP (Ukrainian Scientific and Research Institute of Ecological Problems) is expected to carry out the research work “Preparation of methodological guidelines for controlling the spread and preventing the introduction of IAS of flora and fauna, or eliminating such species within the steppe ecosystems of the NRF territories”. In 2015, the research work “Assessment of the IAS problem (IAS of flora and fauna) in Ukraine and development of recommendations on the legal and organizational framework for regulation and establishment of a system to control the introduction and spread of IAS in Ukraine, in accordance with the Convention on Biological Diversity” was completed. In 2014, the research work “Monitoring of the hydrological regime and sanitary condition of the Siverskyi Donets River in the Kharkiv region with consideration for the impact of rapid development and spread of water lettuce” was conducted.

GSPC Target 11

No species of wild flora endangered by international trade

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
- Progress towards target at national level but at an insufficient rate
- No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Control over the trade in CITES-listed species is regulated by the resolutions of the Cabinet of Ministers of Ukraine, and licensing for the export/import of CITES specimens is authorized based on the opinion of scientific institutions. Adoption of the Law of Ukraine “On Amendments to the Customs Code of Ukraine and Other Legislative Acts of Ukraine Concerning the Implementation of the “Single Window” Mechanism and Optimization of Control Procedures for Goods Crossing the Customs Border of Ukraine” (2018, <http://zakon.rada.gov.ua/laws/show/2530-19>) is an indicator of progress.

GSPC Target 12

All wild harvested plant-based products sourced sustainably

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
- Progress towards target at national level but at an insufficient rate
- No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

The current condition and volume dynamics pertaining to resources derived from commercially valuable species are unknown. Certification of origin is provided by the FSC; as of January 1, 2018, 39% of forests were certified (see Section 2.8).

GSPC Target 13

Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Currently, the ethnobotanical line in plant diversity studies in Ukraine is not developed. There are only a few publications available. In particular, mainstreaming of traditional knowledge of the qırımlar (Crimean Tatars) is carried out; a botany reference book “Illustrated dictionary of Crimean Tatar plant names” has been prepared. It is essential to start a systematic collection of information on various aspects of ethnobotanical knowledge.

GSPC Target 14

The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programs

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Information centers are operating, the Aarhus Information Center and relevant subdivisions of the regional state administrations. Establishment of environmental education centers is generally associated with the protected area administrations. Annually, environmental summer camps are organized at the national nature parks (namely, in “Desniansko-Starohutskyi”, “Podilski Tovtry”, “Hutsulshchyna”, “Uzhansky”, and “Prypiat-Stokhid” NNPs). Forest museums are available (<https://liskostopil.org.ua/golovna.html>).

There are several open online resources that can serve for education and raising awareness. In 2015 and 2017, a number of events were held in Ukraine as a part of the Fascination of Plants Day (see Section 2.1 – Increasing the level of public awareness of biodiversity).

GSPC Target 15

The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
 Progress towards target at national level but at an insufficient rate
 No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC

Target and summarize the evidence used to support this description

Higher education programs of various levels in botany (biology degree) and/or forestry are available from at least 40 universities and colleges. However, the overall number of applicants and graduates has been steadily declining in 2013–2017.

GSPC Target 16

Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level:

- On track to achieve target at national level
- Progress towards target at national level but at an insufficient rate
- No significant change at national level

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Ukrainian experts are involved in the work of international organizations and initiatives: IUCN, Planta Europa, Botanic Gardens Conservation International (BGCI), International Association for Vegetation Science (IAVS), Eurasian Dry Grassland Group, and others.

In Ukraine, the interaction of experts at the national level occurs via two powerful organizations, the Ukrainian Botanical Society and the Council of the Botanical Gardens and Dendroparks of Ukraine. The collaboration of Ukrainian botanists, facilitated by these NGOs, is ongoing and successful; however, considering the challenges of today (particularly, the development of information technologies), the operating model of these structures should be reshaped at the earliest opportunity.

The following public initiatives are the most active: “Save the Ukrainian steppes!” (protection and restoration of the steppes; they have significant achievements in combating corruption and tackling conservation malpractice), UkrBIN, “Ukrainian Botanical Group”, and “Flora of Ukraine”.

Section VI. Updated biodiversity country profile

Biodiversity facts

Status and trends of biodiversity, including benefits from biodiversity and ecosystem services and functions:

Ukraine is home to at least 74,000 species of plants, animals and fungi (at least, 27,000 plants, 35,000 animals and 12,000 fungi), and new records are being annually reported. Natural ecosystems of Ukraine are coniferous, mixed and deciduous forests, sub-Mediterranean scrubs, sparsely wooded grasslands, steppes, subalpine and alpine grasslands (*polonyna* and *yaila*), semi-deserts, sandy beaches, spits and dunes, inland cliffs and outcrops, underground cavities (caves), bogs, salt marshes and meadows, freshwater rivers and lakes, brackish lakes and estuaries (*liman*), saline lakes and gulfs, marine rock cliffs and shores, marine ecosystems of the Black and Azov Seas and the Kerch Strait. Total forest area, as estimated by different sources, is between 14.5 and 16% of the country area, and it includes virgin forests and old forests of the Carpathians (938 km²). The other natural ecosystems occupy only between 6 and 9% of the country area. Percentage of agriculturally cultivated area in Ukraine is among the greatest in the world: as by January 1, 2016, 71% of Ukraine is covered by cultivated lands, with arable lands covering 54% of the Ukrainian land. There are two mountain systems with altitude zonation on the territory of Ukraine (Carpathians and Crimean Mountains). The river basin areas include Danube, Dniester, Southern Buh, Dnieper, Don, Vistula, rivers of the Black and Azov Sea coasts.

Biodiversity of Ukraine is generally data deficient; however, it is known to include endemic, rare, vulnerable and endangered species, and there are migrating species among them. Among the endemic species of Ukraine there are the sandy and the Podolian mole-rats, the Lindholm lizard, the Crimean spined loach, the Donetsk plump bush cricket, Klovov birch, the Buh pink, the naked yarrow, etc. At present 1409 species were assessed by the IUCN Red List, and 187 (13.3%) of them were assigned the categories VU, EN, or CR. Meanwhile, the National Red Data Book lists 826 species of flora and 543 species of fauna. Among them, 45 species of invertebrates and 61 species of vertebrates are critically endangered (0.2% of the overall species number) and 6 animal species are considered to be extinct in Ukraine (0.01%). Among the protected species 24 species of invertebrates and 17 species of vertebrates are endemic species of Ukraine or such regions as Carpathians (0.1%). Several widespread European species have negative population dynamics and need special conservation measures in Ukraine. Among decreasing populations there are most of large wild animals (sturgeons, turbot, harbour porpoise, European bison, elk). Among the plants and fungi 179 species are critically endangered (0.7%) and 10 are extinct in the wild in Ukraine (0.04%).

Changes in biodiversity are associated with dynamics of distribution ranges due to climate change and bioinvasions. There are more than 900 adventive species of vascular plants in the flora of Ukraine (15% of the flora). Of them, dangerous are about 90 species, and among them there are about 40 transformer species. A notable mass invasive species of the recent years is the Spanish slug. The rapidly spreading freshwater invasive species are the stone moroco and the Chinese sleeper.

Protected areas of various ranks are created for protecting biodiversity. At present legally protected areas, which have been created by Ukrainian law, occupy 6.6% of terrestrial Ukraine. In addition, there is a marine protected area “Zernov Phyllophora Field” (the largest aggregation of a non-attached red alga in the world), 4025 km², within the Ukrainian exclusive economic zone in the Black Sea.

Genetic resources of Ukrainian cultivated plants and animals are a part of the world heritage. E. g., local and endangered breeds are breeds of cattle (Ukrainian whiteheaded, Ukrainian grey, Lebedyn, Carpathian brown, steppe red), pigs (Myrhorod, Ukrainian white steppe, Ukrainian spotted steppe), sheep (Sokil, Ukrainian mountain Carpathian) and horses (Hutsul).

Fisheries and hunting are appreciated in Ukraine. Mass species are dominating in landings: these are the tyulka and the Prussian carp (an alien species) in freshwater bodies, and sprat, anchovy and rapana (a dangerous alien species) at sea. The most of populations of valuable target species are in bad condition. The greatest impact on biodiversity is seen in agricultural ecosystems due to economical activities, and ecosystem services are primarily associated with agricultural habitats and forests.

Main pressures on and drivers of change to biodiversity (direct and indirect):

Threats for biodiversity are mainly due to habitat degradation. Natural habitats are preserved at the best only at 25% of the Ukrainian land, and their transformation is still in progress. Imbalanced land use structure, excessive cultivation and low forest coverage are also factors of vulnerability of Ukraine to climate change. Steppes, which have historically been located on 40% of Ukrainian territory, now are remaining only on 3% of their original distribution, and they are fragmented into 10,000 pieces. They are also susceptible to climate change: meadow transformation at the north and desertification at the south.

Natural forest habitats are degrading despite the overall sustain of forest area in Ukraine. Clearcutting area is increasing, and it reached its maximum in 2016. Forest recultivation on clearcutting areas is an inadequate compensation for habitat degradation because clearcutting is affecting even primeval and ancient forests.

Canyons of the Dniester and Southern Buh rivers, which are the centres of endemism, are threatened by dumping for the construction of hydropower stations. Biodiversity unfriendly is the development of small-scale hydropower industry in the Carpathians where the rivers have the best water quality and, subsequently, the lowest man press and the highest level of biodiversity. Coastal habitats at the Black and Azov sea shores are vulnerable due to construction near the shorelines and overcrowding tourism.

Climate change poses risks for biodiversity of Ukraine, since it is driving shift in natural zonation, frequent disaster events and spreading of alien species, as well as infections new to the region. The Black and Azov Seas are deeply affected by invasive species, which have once been introduced to these seas with ballast water: the invasion of a ctenophore *Mnemiopsis leidyi* led to decrease in abundance of pelagic fishes, and the invasion of a rapana led to deterioration of sea floor habitats.

Environmental pollution, fires, mine fields threatened biodiversity of eastern Ukrainian regions, which have been appeared under terrorist attack and armed conflict. In Crimea the administration by occupiers does not recognize or support the status of many protected areas, which have been left without proper management.

Unreported illegal takes, majorly caused by poverty, is a cause for population decline as for traditionally taken species, as for several rare species, including those incidentally bycaught by poachers.

Measures to enhance implementation of the Convention**Implementation of the NBSAP**

Ukraine presented the Law “The Strategy of State Environmental Policy of Ukraine until 2020” (2010) as the officially adopted NBSAP. The law includes Section 3, Strategic Goals And Objectives, where seven national targets are identified, which directly or indirectly concern all the Aichi Biodiversity Targets. The National Plan on Environmental Protection was adopted in 2011 for implementation of the Strategy: it included a list of measures, including the financial ones, and it terminated in 2015. The same year the National Program for Creating the National Ecological Network of Ukraine for the Years 2000–2015 was terminated. Now the NSBAP is directly referred to by Annual national programs of Ukraine - NATO cooperation, and several regulatory acts. However, the NSBAP implementation is indirectly supported by acting legislation and new national regulations, which are important for protecting biodiversity and achieving the ABT. Among them there are Laws of Ukraine “On Environmental Impact Assessment” (2017), “On Strategic Environmental Assessment” (2018), “National Action Plan to counter Land Degradation and Desertification” (2016), “National Strategy for Waste Management in Ukraine until 2030” (2017), “Action Plan for the Implementation of the Concept Note on State Policy Implementation on Climate Change until 2030” (2016), “Sanitary Rules in the Forests of Ukraine” (2016), State Strategy for Regional Development of Ukraine until 2020 (2014), etc. Implementation of the EU regulations is a top priority in Ukrainian regulatory policies.

Overall actions taken to contribute to the implementation of the Strategic Plan for Biodiversity 2011–2020:

Protected areas of Ukraine, as for January 1, 2018, in overall occupy 43,900 km²; of them, the areas of 15,200 km² match the IUCN Categories 1 and 2. The legally protected areas occupy 6.6% of terrestrial Ukraine and 4,025 km² in the EEZ of the Black Sea. In total, 663 areas and natural objects are protected at the national level, and 7633 areas and natural objects are protected at the local level. Of them, the most im-

portant are natural reserves (5.2% of the total protected area), biosphere reserves (12%) and national nature parks (32.9%).

In 2017 the Standing Committee of the Bern Convention adopted 271 sites of the Emerald Network (all of which match the category of protected areas in terms by IUCN), totally 10% of the area of Ukraine, including all the wetland sites of the world importance (39 areas). Experts of Ukrainian non-governmental organizations are working on proposal for the list amendments, which now include about 150 additional sites. There is a draft law “On the Emerald network sites” prepared by NGO experts and the Ministry of Environment. Importantly, the Emerald Network sites include the most of natural habitats of the north Black Sea region which is the important area for migrations and wintering of wading, water and raptor birds from the central and northern Europe. In total the PAs and the Emerald sites occupy about 12% of the Ukrainian territory.

In 2013–2017 there were 268 new protected areas established in Ukraine, with overall area of 3,342 km² (8.4% of the total protected area on January 1, 2018). The Chernobyl Radiation and Ecological Biosphere Reserve has been established within the area, which had been affected by radioactive pollution after the Chernobyl disaster, the area of 2,270 km² (also, the arch-shaped structure of the new safe confinement has been mounted on the reactor unit 4 of the Chernobyl nuclear plant). Also, the National Nature Park Nyzhniodniprovsky has been created (more than 800 km²). Ukrainian beech forests within National Nature Parks “Synevir”, “Zacharovanyi Krai” and “Podilski Tovtry” and Nature Reserves “Gorgany” and “Roztochia” were included into the UNESCO World Heritage property “Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe”. The network of Important Bird Areas in Ukraine is now including 166 areas, in total 25,000 km² (a few of them were identified in 2018). During the assessment period, 12 new key underground bat sites were identified: the List of internationally important underground sites is supported for the implementation of the EUROBATS Agreement and now includes 47 sites. Also, five ecologically or biologically important sea areas (EBSA) have been identified in Ukrainian waters of the Black Sea for implementation of the CBD; one of these EBSA was specifically identified for cetaceans.

Identification and protection measures for ancient and primeval forests are in progress. The area of forests which have been certified by the FSC has been greatly enlarged. The FSC standards have been covered 39% of the forests, mostly during the latest years, and the protected areas include about 16% of the forests. The program for the black stork monitoring is in action. Winter and summer surveys of water birds are being conducted in the Azov and Black Sea region; populations of bats, cetaceans and sturgeon fishes are being assessed. In 2018 the Ministry of Environment and Natural Resources of Ukraine supported a few research projects on summarizing data on rare species and priority species identified by the Bern Convention. Fisheries is generally well controlled in the Dnieper basin, one of the greatest river systems in Europe. The sterlet is being protected, and some activities on its restoration are conducted in the Dniester basin. Effort of expert community resulted in summarizing research data on stock assessment of fishes and some invertebrates in the Black Sea. Two botanical protected areas of national level have been created for the protection of the Black Sea marine environment. Collections of live rare wild plant and fungal species are created and supported in several tree parks and botanical gardens.

The National Bank of Plant Genetic Resources of Ukraine includes storages and field collections; it holds 149,000 samples representing 440 cultures and 1770 species of plants. The Bank of Animal Genetic Resources holds sperm samples (160,000 samples), embryos, egg cells and somatic cell samples. Ukraine entered the data on 239 breeds into the European Farm Animal Biodiversity Information System (EFABIS).

The inter-institutional coordinating center, the working group and the partner network have been established for developing education on sustainable development. Ecological passports were introduced for each of the Ukrainian regions. Centers of environmental education are usually created in alliance with the PA entities.

Support mechanisms for national implementation

Ukraine has an elaborated system of national environmental legislation, including a few regulations on biodiversity. Also, Ukraine is the party of international agreements: CITES, Bern Convention, CMS, AWEA, EUROBATS, ACCOBAMS, Ramsar Convention, Espo Convention, UNCCD, UNFCCC. Ukraine participates in drafting, proposal and adopting resolutions and meetings of the parties on implementation of interna-

tional agreements. Most of species protected by these agreements are also being included into the national Red Data Book that enhanced their protection in Ukraine.

The most important legal act adopted in 2013–2017, which has a direct reference to the CBD, is the Ukraine – European Union Association Agreement, which came into force on September 1, 2017, and opened the way for implementation of the EU legislation on biodiversity protection in Ukraine, expansion of the European legal space in the Eastern Europe. All the new legislation is grounded on this Agreement which makes it compliant with the EU regulations, including the principle of biodiversity protection. The State Water cadaster has been created. The list of the Emerald network sites has been adopted as a basis for PA. The great progress is achieved in environmental assessment procedures: the specific law has been passed, and it has been supported by a few regulations. According to this law, mandatory public hearings are conducted for each project which can substantially affect the natural environment: their number has already reached 2,000.

During 2013–2018 there have been amendments into the laws “On the Fauna”, “On the Flora”, “On the Red Data Book of Ukraine”, “On Game Management and Hunting”, etc.: e. g., dry grass firing was prohibited; use of certain catch tools was limited for hunting and fisheries; wild animal habitats were protected; “silence season” was introduced. Zinc phosphide pesticide was prohibited. The European elk was claimed as a protected species.

During the recent years there is a gradual increase of state budget funding for environment and natural resources. The number of budget programs on environmental protection is rising, as well as the number of programs directly aiming the protection and research of biodiversity. The State Fund for the Environment Conservation of Ukraine is in action. However, the resource allocation is too short. Ukraine is a recipient of external grant and loan support for mobilization of financial resources. International financial grant support in 2013-2016, as by obtained reports, was between 5 and 23 million USD per year. Programs on drafting environmental legislation and capacity building are funded by the European Commission, UNDP GEF, partner countries. A great bulk of nature conservation initiatives was created by effort of stakeholders and civic society; however, the adoption and implementation of relevant regulations are slow and complicated. Species assessment and monitoring is mostly funded by international grants or conducted as an unpaid voluntary work.

Ukraine has substantial expert and research background for biodiversity research. Researchers are actively involved in gaining and disseminating knowledge on biodiversity, participate in advisory bodies for government, species assessments for the IUCN Red List, conduct many research and conservation projects. The results of research are disseminated as research publications. The National Committee on the Red Data Book of Ukraine is in action.

The non-governmental online Data Centre “Biodiversity of Ukraine” has been operating since 2017, as well as the open network of aggregating and exchange of biodiversity data, UkrBIN (Ukrainian Biodiversity Information Network). The UkrBIN is actively interacting with society, spreading biodiversity knowledge, promoting citizen science initiatives in alien species monitoring. Taxonomic data by the UkrBIN are included into the Catalogue of Life, and the observations of alien and invasive species are being transferred to the European Alien Species Information Network, EASIN. The UkrBIN team declared the intention of integrating the biodiversity data from Ukraine into the GBIF.

Mechanisms for monitoring and reviewing implementation

Monitoring of most of the implementation measures is partial. The monitoring of the legislation reform, primarily, for its approximation to the EU regulations, is conducted by the Cabinet of Ministers of Ukraine and several non-governmental organizations. The State Environmental Inspection of Ukraine is reviewing and controlling compliance to environmental legislation. The FSC in Ukraine is partly monitoring forestry. In 2018 the Order for the State Monitoring of Waters was adopted. The water reservoirs on the Dnieper River are covered by the system of fisheries monitoring. The monitoring of environmental pollution is conducted by the National Hydrometeorological Service of Ukraine. The monitoring of species and habitat status is limited by specific initiatives.

Weakness of monitoring mechanisms is one of the major obstacles for the progress assessment of activities in all the areas related to protection of biodiversity.