

PROTECTION OF BIODIVERSITY IN TURKEY

Asst. Prof. Dr. G. Engin ŞİMŞEK*

Abstract

Biodiversity is an umbrella term both loosely indicating the total number of species in a given area and more specifically referring to the existence of diversity at various levels of biological organisation. However it is understood, it is clear that species extinction due to human activities has accelerated in recent years. The Convention on Biological Diversity opened for signature at Rio during the 1992 UN Conference on Environment and Development is the first international treaty explicitly to address all aspects biodiversity, ranging from conservation and sustainable use to access to and safety of biotechnology. Turkey's participation to this treaty has been a turning point in the protection of biodiversity in this country, which has one of the richest living resources in its geography. In order to realize the objectives of this treaty, Turkey has begun a serious revision of its environmental administrative infrastructure and its laws. In this regard, in Turkish legal system, the protection of biodiversity is currently supported by various laws and regulations.

Keywords: *Biodiversity, endangered species, endemism, ecosystem, extinction, Convention on Biological Diversity, international environmental protection treaties, international protection of wildlife, biodiversity of Turkey, national biodiversity strategy, Turkish law.*

TÜRKİYE'DE BİYOLOJİK ÇEŞİTLİLİĞİN KORUNMASI

Öz

Dünya üzerinde yaşayan bütün canlı türlerinin sayısında geçmiş yıllarda yaşanan tükenişler devletleri bu türlerin korunması konusunda uluslararası ve ulusal alanda tedbirler almaya zorlamıştır. Bu tedbirlerin arasında en kapsamlı düzenlemelerden biri olan Biyolojik Çeşitlilik Sözleşmesi ile türlerin ve bunların içinde yaşadıkları ekosistemlerin buldukları ülkelerde korunması amaçlanmaktadır. Sözleşme bu hedef doğrultusunda kendisine taraf olan devletlerden iç hukuklarında mevzuat ve idari yönden gereken tedbirleri almalarını

* Istanbul University Faculty of Law, Department of International Law, İstanbul, Türkiye, gesimsek@hotmail.com

istemektedir. Bu andlaşmaya taraf olan devletlerden biri olan ve biyolojik çeşitlilik yönünden oldukça zengin olan Türkiye’de kendi üstüne düşen yükümlülükleri yerine getirmek üzere gereken çalışmaları başlatmıştır. Bu çalışmalar ağırlıklı olarak mevzuattaki eksiklikleri giderme ve bilimsel ve teknik kapasiteyi arttırmaya yöneliktir. Türk hukukunda biyolojik çeşitliliği korumaya yönelik özel bir düzenleme bulunmamakta olup bu konu farklı kanun, yönetmelik vb. düzenlemelerde yer alan kurallara tabidir.

Anahtar kelimeler: *Biyolojik Çeşitlilik, tehlike altındaki türler, endemik türler, ekosistem, soyu tükenme, Biyolojik Çeşitlilik Sözleşmesi, uluslararası çevre koruma andlaşmaları, doğal hayatın uluslararası alanda korunması, Türkiye’nin biyolojik çeşitliliği, milli biyolojik çeşitlilik stratejisi, Türk hukuku.*

I. Introduction

Before examining biodiversity protection in Turkey, it is necessary to explain certain definitions that are used in this context. The term biological diversity has been defined as the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.¹ This definition encompasses not only the variety of species but also the variety of genes within those species and the variety of ecosystems in which the species reside. The term ecosystem means the dynamic relationships between plant, animal and micro-organism communities and their interactions with the non-living environment as a functional unit.² In this regard, biological diversity is considered necessary for the normal functioning of ecosystems. In terms of genetic diversity, endemism also has a key role to play because endemic species are restricted to small areas and provide pockets of particularly high genetic diversity. In this context, protection of biodiversity is also closely related with species protection. For this purpose, identifying the species that are in danger of extinction and establishing measures for their survival is necessary for the natural biological balance.³ Biological diversity is protected internationally

¹ See *Convention on Biological Diversity*, Article 2, 31 ILM 818.

² *Ibid.*

³ See *ibid*, Article 8. For the importance of so-called keystone species for the maintenance of the functions of ecosystems and biosphere as well as for economic and social development derived from biological resources, see *About the Convention on Biological Diversity*, (CBD Secretariat, 2002). Also see, BOWMAN, DAVIES and REDGWELL,

by the 1992 Convention on Biological Diversity (CBD) and, currently, 193 states are parties to this treaty. Biodiversity is also at the center of a number of other treaties regulating species protection, e.g., Bern Convention on the Conservation of European Wildlife and Natural Habitats,⁴ Ramsar Convention on Wetlands,⁵ The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES),⁶ Convention on Migratory Species (CMS)⁷, International Plant Protection Convention,⁸ International Treaty on Plant Genetic Resources for Food and Agriculture⁹, Specially Protected Areas (Barcelona) Protocol,¹⁰ the Cartagena Protocol on Biosafety,¹¹ UN Convention on Climate Change¹² and its Kyoto Protocol.¹³

By current accounts, nearly 17 thousand species of plants and animals are threatened with extinction. Major drivers of biodiversity loss have been identified as deforestation, habitat degradation, invasive species, over-exploitation, pollution and climate change.¹⁴ In particular, polar regions, fresh water and sea environments and dry forests are seriously affected by these factors. Indo-Pacific and Neotropical regions have lost half the population of their living species. Reduction in biodiversity also affects

Lyster's International Wildlife Law, Second Edit., Cambridge, 2010, p. 588-9.

⁴ 1284 UNTS 209. Also, see 2004 *Standing Committee Strasbourg Declaration*, 24. Meeting Report, Appendix 8. For the protection of animal welfare in Europe, see *European Convention for the Protection of Animals during International Transport* (ETS No. 65, revised by ETS No. 193); *European Convention for the Protection of Animals Kept for Farming Purposes* (ETS No. 87, as amended by Protocol, ETS No. 145); *European Convention on the Protection of Animals for Slaughter* (ETS No. 102); *European Convention for the Protection of Vertebrate Animals used for Experimental and Other Scientific Purposes* (ETS No. 123, as amended by Protocol, ETS No. 170); *European Convention on the Protection of Pet Animals* (ETS No. 125). Turkey has signed, but not ratified these welfare conventions.

⁵ 996 UNTS 245.

⁶ 993 UNTS 443.

⁷ 19 ILM 15.

⁸ <https://www.ippc.int/en/>

⁹ 2400 UNTS 303.

¹⁰ See http://195.97.36.231/dbases/webdocs/BCP/ProtocolSPA95_eng.pdf.

¹¹ 39 ILM 1027.

¹² 31 ILM 849.

¹³ 37 ILM 22.

¹⁴ IUCN estimates that over 75 percent of the extinctions since 1600 have been caused by humans, see www.iucn.org.

vegetation biomass production, decomposition rates and fish stocks. It is predicted that the gradual decline in these areas will have a negative impact on the demands of a growing global population. Research has highlighted that biodiversity loss could rival the problems of carbon dioxide increases in the 21st century.¹⁵

According to the Millennium Development Goals set by world leaders within the UN system, biodiversity loss is one of the areas where the world must take urgent action within this century.¹⁶ To this end, the General Assembly declared the decade 2011-2020, the UN Decade on Biodiversity with a view to the implementation of the Strategic Plan for Biodiversity for 2011-2020.¹⁷ The Strategy calls for all countries to effectively implement the objectives of the 1992 Convention by establishing national and regional targets for achieving the five strategic goals and 20 global targets, collectively known as the Aichi Biodiversity Targets.¹⁸ In order to reduce the pressure and threats on biodiversity in Europe, the EU has taken specific measures in areas like wildlife protection, soil and freshwater quality, waste water treatment and atmospheric emissions. However, Europe has already lost more than half of its wetlands and between 1980 and 2000, the population of its agriculturally important birds declined in numbers by 70%.¹⁹

II. Biodiversity of Turkey

Turkey is very rich in endemism and genetic variety, thanks to its geographic position and geomorphological characteristics. Turkey has three major bio-geographical regions with very different (coastal, marine, mountains, forests, steppes, wetlands, agricultural) ecosystems. There are 120 mammals, 469 bird species, 130 reptiles, 400 fishes, 1500 vertebrates (123 endemic) and 19,000 invertebrates (4000 endemic) as well as 11,000 plant

¹⁵ See <http://www.biodiversitya-z.org/content/biodiversity>.

¹⁶ See *GA Resolution 65/1*.

¹⁷ See *GA Resolution 65/151*. Also, see *General Assembly Resolution on the Implementation of the Convention on Biological Diversity and its contribution to sustainable development*, A/C.2/67/L.58.

¹⁸ See UNEP/CBD/COP/11/35. Also, see www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf

¹⁹ See http://europa.eu/rapid/press-release_MEMO-04-27_en.htm.

species and 5 micro-gene centers where more than 100 species display a broad variation.²⁰ Three-quarters of all plant species existing in Europe grow in Turkey, approximately one-third of which (4000) are endemic. It is the origin of many (30%) important cultivated plants.²¹ The country is also at the crossroads of major migration routes and hosts a large number of migratory bird species every year. In terms of ecosystem diversity, agricultural lands constitute about 31% of country's surface area and 27% is the forest area, the rest is divided into plain steppe and mountain steppe.²² With its rivers, lakes and a long coast line facing four seas, Turkey has important inland water resources, 135 wetlands of international significance and very diverse marine and coastal ecosystems. However, according to OECD environmental performance review, 20% of mammals and other animal species in Turkey are either vulnerable or endangered, primary among these are red and brown deer, wild sheep, gazelle, Mediterranean monk seal, loggerhead sea turtle and green sea turtle, flamingo and white-headed duck.²³ Moreover, 379 plant and animal species (27 endemic) in Turkey are in the threatened category of International Union on Conservation of Nature's (ICUN) red list.²⁴ The areas identified as threats to biodiversity in Turkey are land degradation, pollution of rivers, clearing of forest lands, invasive species, illegal hunting and illegal plant collection. Rapid urbanization and industrialization also put extra pressure on ecological systems which support biodiversity.²⁵

²⁰ See <http://iucn.org/about/union/secretariat/offices/europe/?9778/Biodiversity-in-Turkey>. Also, see E. TERZİOĞLU, *Türkiye'nin Biyolojik Çeşitliliğine ilişkin Genel Bilgi*, <http://ormuh.org.tr/arsiv/files/Biyolojik%20Cesitlilik%20ve%20Gen%20kaynaklari.pdf>.

²¹ See KAHRAMAN, ÖNDER, CEYHAN, *Biodiversity and Biosecurity in Turkey*, <http://www.ipcbee.com/vol24/7-ICBEC2011-C00016.pdf>.

²² See www.ogm.gov.tr/ekutuphane/Yayinlar/T%C3%BCrkiye%20Orman%20Varl%C4%B1%C4%9F%C4%B1.pdf.

²³ See http://s3.amazonaws.com/zanran_storage/www.undp.org.tr/ContentPages/43466347.pdf.

²⁴ See http://cmsdocs.s3.amazonaws.com/summarystats/2015-4_Summary_Stats_Page_Documents/2015_4_RL_Stats_Table_5.pdf

²⁵ See <http://www.eea.europa.eu/soer/countries/tr/country-introduction-turkey>

III. Administrative Strategies for Biodiversity Protection

Since 1990, Turkey has recognized its responsibility in protecting this biodiversity and responded to the problem since 2001 by preparing a National Biodiversity Strategy and Action Plan (NBSAP).²⁶ The Strategy is prepared and implemented by the Ministry of Forestry and Water Affairs in accordance with Turkey's obligations under the Biodiversity Convention.²⁷ The latest National Biodiversity Strategy and Action Plan for 2008-2018²⁸ establishes the following ten goals and various targets and strategic actions in the aim of protecting biodiversity: identify, protect and monitor important biological diversity components in Turkey; use biodiversity components in a sustainable manner by methods suitable for their renewal capacity; identify and protect traditional knowledge; protect agricultural biodiversity and protect genetic resources in this area; protect steppe biodiversity and combat against the loss of these areas; establish an effective monitoring and management system for the conservation of forest biodiversity; develop effective methods for the conservation of inland water biodiversity; develop effective methods for the conservation of coastal and marine biodiversity; establish a mechanism for the implementation of the Strategy and Action Plan. Moreover, the Strategy determines priorities²⁹ and lists new projects for the implementation of the CBD.³⁰

²⁶ See <https://www.cbd.int/doc/world/tr/tr-nbsap-v2-en.pdf>.

²⁷ As required by Article 6 of the CBD and the relevant Conference of Parties' decision, see Decision IX/8, <https://www.cbd.int/decisions/cop/?m=cop-09>. The Ministry is the national focal point and the agency responsible for the implementation of the Convention.

²⁸ See <https://www.cbd.int/doc/nbsap/nbsapcbw-eur-02/nbsapcbw-eur-02-tr-01-en.pdf>. In this regard, also see *National Climate Change Adaptation Strategy and Action Plan*, <http://www.dsi.gov.tr/docs/iklim-degisikligi/turkeys-national-climate-change-adaptation-strategy-and-action-plan.pdf?sfvrsn=2>.

²⁹ These are identification of indicator species and effective implementation of biodiversity inventory, establishment of central information management system, development of specific conservation measures for sensitive and threatened ecosystems and species, monitoring of effects of climate change on biodiversity, conservation of biodiversity hotspots, coordination between strategies and programs in biodiversity, agriculture, development and forestry, sustainable use of biological resources, *op.cit.*

³⁰ These include identification of medical plant species, identification of plant and animal genetic resources for in situ and ex situ conservation and sustainable use, genetic centers in Turkey, identification of microbial diversity, development of controlled collection and cultivation of flora species, determination of ecological relations between species in nature

The Ministry of Forestry also manages the Species Protection Strategy and Action Plan, as required by Article 6 of the CBD and Article 3(1) of the Bern Convention,³¹ and maintains the National Biological Diversity Database, called Noah's Ark, which contains information regarding species, their habitat and protection status.³²

For protection purposes, Turkey has so far established 39 national parks, 31 nature conservation areas, 201 nature parks, 81 wildlife reserve areas, 55 conservation forests, 276 genetic conservation forests, 341 seed stands, 16 specially protected areas, 1273 natural sites, 112 natural monuments, 14 Ramsar sites and 1 biosphere reserve.³³ Protected areas created by Turkey for in-situ protection have doubled in the last 20 years and now cover 7.2% of the country's territory. Roughly 1.2 % of this area is protected under IUCN categories I-II.³⁴ Turkey has also established one national plant gene bank

protection areas, control of invasive alien species, establishment of laboratory network for GMOs, classification of stressed forest ecosystems, conservation of endangered species in sensitive mountain ecosystems, establishment of gene bank for aquatic species, development of integrated coastal area management plans, mapping of distribution of sea grasses, establishment of marine and coastal protected areas, *ibid*.

³¹ The current Strategy identifies the species in need of protection, determines the levels of protection and establishes four goals. It also has an annex on priority species. In terms of species, Strategy establishes four categories of endangered species on the basis of IUCN red list, Bern annexes and national conditions: mammals (150 of which under protection), birds (52 of which are endangered); reptiles and amphibians (63 of which requires protection), marine species (24 of which requires protection) and plants (42 of which requires protection). As regards the level of protection, Strategy envisages national, regional and municipality levels of protection for endangered species. Finally, Strategy adopts four main goals and various targets and action strategies in order to prevent the loss of species in the country: a) find the legal gaps in this area and remedy the deficiencies; b) strengthen the infrastructure and technical capacity; c) supporting the protection of species with habitat protection; d) increasing public awareness and education, see www.milliparklar.gov.tr/

³² See http://www.nuhungemisi.gov.tr/Giris/about_en.aspx. For the 2011 Report of the Biological Diversity Monitoring Unit, see www.nuhungemisi.gov.tr/DosyaRaporSunum/Belgeler/8ca6540a-1fe9-40f7-85d8-cc0653e1185d.pdf

³³ See <http://www.milliparklar.gov.tr/kitap/141/?sflang=tr#p=42>. Also, see TERZIOĞLU, *op.cit.*, p. 5-7; R. ÖZÇELİK, *Biyolojik Çeşitliliği Korumaya Yönelik Yapılan (Planlama ve Koruma) Çabaları ve Türkiye Ormancılığına Yansımaları*, SDÜ Orman Fakültesi Dergisi, Year 2006, Issue 2, p. 23.

³⁴ See KÜÇÜK&ERTÜRK, *Biodiversity and Protected Areas in Turkey*, at http://www.ukm.my/jsm/pdf_files/SM-PDF-42-10-2013/14%20M.%20Kucuk.pdf. Also, see <http://www.protectedplanet.net/country/TR>.

and two animal gene banks as well as various field gene banks for ex-situ protection purpose.³⁵

As regards the distribution of responsibility within the administrative structure for nature protection, this can be summarised as follows. National parks, Ramsar sites, biosphere reserves, nature conservation areas, nature parks, wildlife development areas, conservation forests, genetic conservation areas, seed stands and natural monuments are managed by the Ministry of Forestry and Water Affairs. The General Directorate of National Parks and Nature Protection of the Ministry has been given the main responsibility for the protection and management of biodiversity and protected areas. Specially protected areas and natural sites are managed by the Ministry of Environment and Urbanization.³⁶ At the same time, the Ministry of Agriculture deals with the issues related with agricultural resources, aquaculture products and biosecurity.³⁷

IV. Legal Framework for Biodiversity Protection

Turkey has become a party to most of the major global and regional environmental protection treaties related with biodiversity, which include among others the Convention on Biodiversity (CBD),³⁸ the Convention on the International Trade in Endangered Species of Wild Flora and Fau-

³⁵ See KAHRAMAN, ÖNDER, CEYHAN, *op.cit.*, p. 35; ERTUĞRUL, DELLAL, *et.al.*, *Çiftlik Hayvanları Genetik Kaynaklarının Korunması ve Sürdürülebilir Kullanımı*, http://www.zmo.org.tr/resimler/ekler/0982fb2f2cfa186_ek.pdf; KARAGÖZ, ZENCİRCİ, TAN, *et.al.*, *Bitki Genetik Kaynaklarının Korunması ve Kullanımı*, http://www.zmo.org.tr/resimler/ekler/fbb6efd376d8db_ek.pdf. For the establishment of animal biotechnology center, national botanic garden and the support programme for the environmentally based agricultural land protection, see www.tarim.gov.tr/Belgeler/ENG/changes_reforms.pdf

³⁶ See KÜÇÜK&ERTÜRK, *op.cit.*, p. 1460.

³⁷ See www.tarim.gov.tr/Belgeler/ENG/changes_reforms.pdf.

³⁸ Turkey has become a party to this Convention in 1997, see RG (Official Gazette) No. 22860, Kanun (Statute) No. 4177. Also, see a draft law prepared for this purpose, *Tabiatı ve Biyolojik Çeşitliliği Koruma Kanunu Tasarısı (1/627)*, www.tbmm.gov.tr/sirasayi/donem24/yil01/ss297.pdf. For an analysis of this draft law, see S. S. GÖKALP ALICA, *Tabiatı ve Biyolojik Çeşitliliği Koruma Kanunu Tasarısı'nın Doğa Koruma Mevzuatı Çerçevesinde Değerlendirilmesi*, Ankara Barosu Dergisi, 2012/3, p. 185.

na (CITES),³⁹ the Convention on Wetlands of International Importance (Ramsar),⁴⁰ the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention),⁴¹ Convention on the Protection of Cultural and National Heritage,⁴² International Plant Protection Convention,⁴³ International Treaty on Plant Genetic Resources for Food and Agriculture,⁴⁴ Cartagena Protocol on Biosafety,⁴⁵ UN Convention on Climate Change and its Kyoto Protocol,⁴⁶ the Convention for the Protection and Development of the Marine Environment and Coastal Region of the Mediterranean Sea (Barcelona Convention)⁴⁷ and its Specially Protected Areas Protocol,⁴⁸ the Convention on the Protection of the Black Sea against Pollution (Bucharest Convention).⁴⁹

Within Turkish law, the environment is protected under various laws and

³⁹ Turkey has become a party in 1996, see RG No. 22672, Kanun No. 4041. For the implementing regulations, see *CITES'in uygulanmasına dair Yönetmelik*, RG No. 24623 (27.12.2001), as amended in 2004, RG No. 25545 (6.08.2004); *Doğal Çiçek Soğanlarının Sökümü, Üretimi ve Ticaretine İlişkin Yönetmelik*, RG No. 28538 (19.07.2012); *Nesli Tehlike Altında Olan Yabani Hayvan ve Bitki Türlerinin Dış Ticaretine İlişkin Tebliğ* (2011/1), RG No. 27859 (27.02.2011) and 2014 amendment, RG No. 29073 (27.07.2014).

⁴⁰ Turkey has become a party in 1994, see RG No. 21937, Kanun No. 3958. For the implementing regulation, see *Sulak Alanların Korunması Yönetmeliği*, RG No. 28962 (04.04.2014).

⁴¹ Turkey has become a party in 1984, see RG No. 18318, Bakanlar Kurulu (BK) Kararı (Cabinet Decision) 84/7601.

⁴² Turkey has become a party in 1983, see RG No. 17670, Kanun No. 2658.

⁴³ Turkey has become a party in 1988 and its amendment in 1997, see RG No. 28544, Kanun No. 6397.

⁴⁴ Turkey has become a party in 2006, see RG No. 25984, Kanun (Law) No. 5414.

⁴⁵ Turkey has become a party in 2003, see also RG No. 25148, Kanun No. 4898. For the implementing regulation, see *Genetik Yapısı Değiştirilmiş Organizmalar ve Ürünlerine Dair Yönetmelik*, RG No. 27671 (13.08.2010). Also, see Z. KIVILCIM, *Cartagena Protokolü ve Türkiye Biyogüvenlik Mevzuatı*, Marmara Avrupa Araştırmaları Dergisi, Vol 20, Issue 1, 2012, p. 99.

⁴⁶ Turkey has become a party to the Convention in 2004, see RG No. 25266, Kanun No. 4990. Turkey has become a party to the Protocol in 2009, see RG No. 27144, Kanun No. 5836.

⁴⁷ Turkey has become a party in 2002, see RG No. 24854, BK Kararı 2002/4545.

⁴⁸ Turkey has become a party in 2002, see RG No. 24854, BK Kararı 2002/4545.

⁴⁹ 32 *ILM* 1110. Turkey has become a party in 1994, RG No. 21788, Kanun No. 3937. Also, see *Black Sea Biodiversity and Landscape Conservation Protocol*, to which Turkey has become a party in 2004, RG No. 2551, BK Kararı 2004/7648.

regulations and different governmental institutions are authorized to take action.⁵⁰ First of all, the Turkish Constitution,⁵¹ Article 56 provides that everybody has the right to live in a healthy and balanced environment and both the state and the people have the duty to protect the environment and to prevent its pollution.⁵² In Article 63, the State is required to take measures for the protection of natural, historical and cultural objects. Protection of the soil, agricultural lands, pastures and forests are regulated by Articles 44, 45, 169 and 170 respectively.

The main legal instrument in Turkish law for the protection of environment is the Environmental Law (1983),⁵³ which was substantially changed in 2006.⁵⁴ According to Article 2 of the Law, environment has been defined as the biological, physical, social, economical, and cultural setting where living beings sustain their relationships and interact with each other during their life-span. Ecological balance is also defined in the same article as all the conditions necessary for humans and other living beings to survive and develop in accordance with their natural constitutions. On the other hand, biological diversity is defined as all ecosystems, species, genes and the relations between these.

The Law aims at the protection of all aspects of the environment, which includes biodiversity and ecosystems that sustain this diversity, endangered plant and animal species, wetlands, soil, surface and underground fresh waters, seas and aquaculture products.⁵⁵ For this purpose, a new Article 6

⁵⁰ KELEŞ, HAMAMCI, ÇOBAN, *Çevre Politikası*, İmge, 7. Baskı, 2012, p. 491; N.M. ÇAKMAK, *Biyolojik Çeşitliliğin Hukuken Korunması ve Kamu Yararı*, AÜHF, 2008, Vol. 57, Issue 1, p. 133; F. DEMIRAYAK, *Biyolojik Çeşitlilik-Doğa Koruma ve Sürdürülebilir Kalkınma*, TÜBİTAK VİZYON 2023 Projesi Çevre ve Sürdürülebilir Kalkınma Paneli, 2002.

⁵¹ See <http://www.anayasa.gen.tr/1982Constitution-EYasar.htm>.

⁵² See A. GÜNEŞ, *Çevre Hukuku*, XII Levha, 2015, p. 160.

⁵³ See RG No. 18132, Kanun No. 2872.

⁵⁴ See 2872 Nolu *Çevre Kanunu*'nda *Değişiklik Yapılmasına Dair Kanun*, RG No. 26167, Kanun No. 5491. Among others, the new Article 3 (i) states that adopting necessary technical, administrative, financial and legal measures for the implementation of international environmental agreements constitutes an environmental principle, *ibid*. Also, see *Çevre Denetimi Yönetmeliği*, RG No. 27061 (21.11.2008). For the text of these and the following national instruments, see <http://faolex.fao.org/>.

⁵⁵ KELEŞ, HAMAMCI, ÇOBAN, *op.cit.*, p. 538; R. KELEŞ, *Kentleşme Politikası*, İmge, 13. Baskı, 2015, p. 667.

(a) provides a general protection clause for biodiversity and its ecosystem.⁵⁶ Then, in paragraph (c), it states that environmental planning is necessary for the prevention of environmental pollution and all the ecologically important sensitive areas protected by national and international legal instruments have to be taken into account in these plans. The same article also requires the introduction of specially protected areas for the protection of biological diversity, natural and cultural resources in land and water areas, which are ecologically important and sensitive to pollution and deterioration.⁵⁷

In the implementation of these provisions, the Law authorizes relevant administrative authorities⁵⁸ to supervise activities that carry risk of pollution or environmental problems and prohibit or punish the violators (including those who endanger biodiversity, specially protected areas and wetlands).⁵⁹ At the same time, the Law asks operators engaged in risky activities to prepare an environmental impact assessment report, to obtain permission or a licence, prepare an emergency plan and take necessary measures for eliminating risks, to provide regular information on their operations and to have insurance for dangerous substances.⁶⁰ Although, the Law empowers citizens to denounce violators to the authorities and receive information on environmental matters, the authorities can withhold certain information if its disclosure endangers environmental valuables, like breeding-grounds of endangered species.⁶¹ There is also a fund system established for the

⁵⁶ It is also provided that general principles for the protection and use of biodiversity should be decided in consultation with local authorities, academia and civil society organizations.

⁵⁷ See new Article 6 (d). Also, in Article 6 (e) and (f), there are a special provisions for the wetland conservation and the protection of endangered species.

⁵⁸ The power to enforce this Law belongs to the Ministry of Forestry and Water Affairs. However, according to Articles 4 and 5, environmental policies and strategies should be decided by the Higher Board of Environment. Also, see *Yüksek Çevre Kurulu ve Mahalli Çevre Kurullarının Çalışma Usul ve Esaslarına İlişkin Yönetmelik*, RG No. 28727 (3.08.2013).

⁵⁹ See new Article 14 (k).

⁶⁰ See new Articles 7, 8, 9 and 10 respectively. Also, Article 12 provides an order to cease activities, Article 14 provides certain administrative fines and Article 18 provides a penalty of imprisonment for the violations of these obligations. For permits and licences, see *Çevre İzin ve Lisans Yönetmeliği*, RG No. 29115 (10.09.2014); tubitak.gov.tr/sites/default/.../yasal_izin_bilgi_notu_07_08_15.pdf. For environmental impact assessment, see *Çevresel Etki Değerlendirmesi Yönetmeliği*, RG No. 28784 (03.10.2013).

⁶¹ See new Article 21.

prevention of environmental pollution, supporting environmental rehabilitation and required investments.⁶² In order to take necessary measures for eradicating existing environmental problems in the areas defined as “*special environmental protection areas*” under Article 9 of the Environment Law, an Institute has been established by the Decree-Law in 1991 on the Establishment of an Environmental Protection Institute.⁶³

Another important legal instrument for the protection of environment is the National Parks Law (1983).⁶⁴ Article 2 of the Law defines national parks as natural places of protection, recreation and tourism, having scientific and aesthetic aspects due to rare national and international natural and cultural valuables; and nature parks as natural places having flora and wildlife qualities and suitable for recreation due to its landscape. The same article also defines nature protection areas as places reserved only for scientific and educational use, having rare, endangered or almost extinct ecosystems, species and outstanding nature made structures. In Article 14, the Law explicitly prohibits disturbing of the ecology and ecosystem of these places and the destruction of their wildlife, pollution of their soil, water and air, and forestry, grazing and hunting activities which harm the natural balance. According to Article 12, in national and nature parks, all kinds of public or private construction requires the permission of the relevant authorities.⁶⁵ However, in nature protection areas, all forms of private use are prohibited unless it is absolutely necessary for public welfare. Yet, Article 11 allows for mining and oil extraction activities in these places provided that necessary protection measures required by the authorities are taken.

⁶² See new Article 13.

⁶³ See RG No. 20341, Kanun Hükümünde Kararname (Statutory Decree) No. 383. Also, see *Korunan Alanların Tespit, Tescil ve Onayına İlişkin Usul ve Esaslara dair Yönetmelik*, RG No. 28358 (19.07.2012).

⁶⁴ See RG No. 18132, Kanun No. 2873; 2005 *Milli Parklar Kanunu'nda Değişiklik Yapılmasına dair Kanun*, RG No. 25876, Kanun No. 5400. See also *Milli Parklar Yönetmeliği*, RG No. 19309 (12.12.1986); *Milli Parklar Fonu Yönetmeliği*, RG No. 19309 (13.05.1987).

⁶⁵ Article 4 requires the relevant national authorities to prepare development plans for protection and use of national parks. For more information on this matter, see KELEŞ, HAMAMCI, ÇOBAN, *op.cit.*, p. 566; S.S. ARDA, *Türkiye’de Doğa Koruma Alanı Uygulamaları ve Avrupa Birliği Mevzuatı ile Karşılaştırılması*, Ankara-2003, Yüksek Lisans Tezi.

In Turkish law, animal hunting and fishing are regulated by two different laws. The Land Hunting Law (2003) aims to regulate hunting and protect wild animals and their habitats.⁶⁶ The Law authorises relevant institutions to determine the animals that need to be protected and prohibits their hunting.⁶⁷ Moreover, wild animals cannot be disturbed during breeding, migration and hibernation seasons; taking their eggs and young animals or destroying their nests is also prohibited. The natural habitats of wild animals and wetlands cannot be polluted or drained. Ecosystems and wild animals in wildlife protection and development areas and in breeding stations cannot be destroyed or put into private use.⁶⁸ Hunting is regulated by a licencing system and allowed only with permission in certain areas and at times reserved for this purpose.⁶⁹ Hunting methods are also widely restricted. Trade in animals or animal products protected under national and international laws is prohibited. The Law requires the establishment of animal rehabilitation centers for sick, wounded or illegally traded animals.⁷⁰

On the other hand, fishing is regulated by the Aquaculture Products Law (1971), which aims at the protection, production and supervision of water products.⁷¹ Water products are defined as plants, animals and their

⁶⁶ See RG No. 25165, Kanun No. 4915.

⁶⁷ See *Yaban Hayvanlarının Yasadışı Öldürülmeleri ile İlgili Tebliğ*, RG No. 24761 (21.05.2002); *Orman ve Su İşleri Bakanlığınca Belirlenen Av ve Yaban Hayvanları Tür Listesi Kararı*, RG No. 28977 (19.04.2014).

⁶⁸ See *Yaban Hayatı Koruma ve Yaban Hayatı Geliştirme Sahaları ile ilgili Yönetmelik*, RG No. 25637 (8.11.2004).

⁶⁹ See *Avlakların Kuruluşu, Yönetimi ve Denetimi Esas ve Usulleri ile ilgili Yönetmelik*, RG No. 25464 (16.05.2004); *Yerli ve Yabancı Avcıların Av Turizmi Kapsamında Avlanmalarına İlişkin Usul ve Esaslar Hakkında Yönetmelik*, RG No. 25694 (8.01.2005); *Av ve Yaban Hayvanları ile Bunlardan elde edilen Ürünlerin Bulundurulması, Üretimi ve Ticareti Hakkında Yönetmelik*, RG No. 25847 (16.06.2005); *Av ve Yaban Hayvanlarının ve Yaşam Alanlarının Korunması ve Zararlılarıyla Mücadele Usul ve Esasları Hakkında Yönetmelik*, RG No. 25976 (24.10.2005); *Avcı Eğitimi ve Avcılık Belgesi Verilmesi Usul ve Esasları Hakkında Yönetmelikte Değişiklik Yapılmasına dair Yönetmelik*, RG No. 27305 (31.07.2009).

⁷⁰ See *Av ve Yaban Hayatı Üretim Yeri ve İstasyonları ile Kurtarma Merkezlerinin Kuruluşu, Yönetimi, Denetimi Hakkında Yönetmelik*, RG No. 25656 (30.11.2004).

⁷¹ See RG No. 13799, Kanun No. 1380, as amended in 1986, at RG No. 19120, Kanun No. 3288. Also, see *Su Ürünleri Toptan ve Perakende Satış Yerleri Yönetmeliği*, RG No. 26505 (27.04.2007); *Su Ürünleri Yetiştiriciliği Yönetmeliğinde Değişiklik Yapılmasına dair Yönetmelik*, RG No. 27243 (30.05.2009).

eggs in the sea and in inland waters. Fishing in these waters is subject to permission and operators are required to give information on demand. The law also prohibits certain hunting techniques and polluting activities and authorizes the relevant institutions to determine other hunting restrictions in accordance with scientific and economical data.⁷² While energy production is allowed in these waters all measures to protect the living conditions of water products must be taken.

Another important development in Turkish law has been the adoption of the Law on the Protection of Animals (2004).⁷³ The Law requires the protection of endangered species and their habitat and prohibits the taking of animals from the wild, killing them during breeding seasons or hunting them illegally. The Law also prohibits any activity that threatens the survival of species or constitutes a torture of animals. Animal care, trade in and experiments on animals are heavily regulated.⁷⁴

The other legal instruments that are relevant in this context are the Forest Law (1956), which prohibits grazing, agricultural activities and selling of public forests, but allows mining operations and construction work for the purposes of public health, security and welfare;⁷⁵ the Law on Preservation of Cultural and Natural Assets (1983), which protects valuables on surface, underground or under water, like caves and trees of special importance;⁷⁶ the

⁷² For the implementation of these rules, see *Su Ürünleri Yönetmeliği*, RG No. 22223 (10.03.1995); *Amatör Amaçlı Su Ürünleri Avcılığını Düzenleyen 3/2 Numaralı Tebliğ*, RG No. 28388 (1.09.2012).

⁷³ See RG No. 25509, Kanun No. 5199; Also, see *Hayvan Sağlığı ve Zabıtası Kanunu'nda Değişiklik Yapılması Hakkında Kanun*, RG No. 24384, Kanun No. 4648.

⁷⁴ See *Ev ve Süs Hayvanlarının Üretim, Satış, Barınma ve Eğitim Yerleri Hakkında Yönetmelik*, RG No. 28078 (8.10.2011); *Ev ve Süs Hayvanlarının Ticari Olmayan Hareketlerinde Uygulanacak Hayvan Sağlığı Şartlarına dair Yönetmelik*, RG No. 28133 (5.12.2011); *Hayvan Deneyleri Etik Kurullarının Çalışma Usul ve Esaslarına dair Yönetmelik*, RG No. 28914 (15.02.2014). Also, see KELEŞ, HAMAMCI, ÇOBAN, *op.cit.*, p. 629.

⁷⁵ See RG No. 9402, Kanun No. 6831. For changes to this law, see *Orman Kanununda Değişiklik Yapılmasına dair Kanun No. 4999*, RG No. 25293 (18.11.2003); *Orman Kanununda Değişiklik Yapılması Hakkında Kanun No. 5192*, RG No. 25511 (2.07.2004); *Orman Kanunu'nun 17/3 ve 18inci Maddelerinin Uygulama Yönetmeliği*, RG No. 28976 (18.04.2014). For the text of these and other instruments in the following footnotes, see <http://faolex.fao.org/>.

⁷⁶ See RG No. 18113, Kanun No. 2863. For more information, see KELEŞ, *op.cit.*, p. 677.

National Afforestation and Erosion Control Mobilization Law (1995), which aims to enlarge and improve forest areas by encouraging private and public cooperation;⁷⁷ the Pasture Law (1998), which regulates the use of pastures for agricultural, settlement and touristic purposes;⁷⁸ the Animal Improvement Act (2001), which aims to regulate work on genetic improvement of animals and protecting the gene resources of domestic and wild animals;⁷⁹ the Law on the Protection of the Rights of Cultivators of New Plant Strains (2004), which encourages and protects cultivators in this field;⁸⁰ the Organic Agriculture Law (2004), which regulates organic agricultural production and its marketing;⁸¹ the Soil Preservation and Land Utilization Law (2005), which requires public and private owners to take certain measures to prevent the loss of producing capacity, socio-economic and ecological functions of the soil;⁸² the Seed Law (2006), which aims at supervising the quality of seeds and regulates their trade;⁸³ the Biosecurity Law (2010), which regulates

⁷⁷ See RG No. 22355, Kanun No. 4122; *Ağaçlandırma Seferberliği Kapsamında Yapılacak Ortak Çalışmalara İlişkin Protokol (12.01.2009)*; *Çevre ve Orman Bakanlığı Ağaçlandırma ve Erozyon Kontrolü Hizmetlerine İlişkin Usul ve Esaslarda Değişiklik Yapılmasına dair Usul ve Esaslar Yönetmeliği*, RG No. 27373 (11.10.2009).

⁷⁸ See RG No. 23272, Kanun No. 4342. For the latest changes to this Law, also see *Mera Kanununda Değişiklik Yapılmasına Dair Kanun*, RG No. 28588, Kanun No. 6443.

⁷⁹ See RG No. 24338, Kanun No. 4631. This Law has been repealed by 2010 Law on Veterinary Services, Plant Health, Food and Feed, see *infra*. Also, see *Embriyo ve Sperma Üretim Merkezlerinin Kuruluş, Çalışma Esas ve Usulü Hakkında Yönetmelik*, RG No. 24593 (24.11.2001); *Hayvan Gen Kaynaklarının Korunması Hakkında Yönetmelik*, RG No. 24700 (19.03.2002); *Hayvan Irklarının Tesciline İlişkin Yönetmelik*, RG No. 25141 (17.06.2003); *Su Ürünleri Genetik Kaynaklarının Tesciline İlişkin Yönetmelik*, RG No. 28388 (18.08.2012); *Su Ürünleri Genetik Kaynaklarının Korunması ve Sürdürülebilir Kullanımı Hakkında Yönetmelik*, RG No. 28396 (29.08.2012).

⁸⁰ See RG No. 25347, Kanun No. 5042; *Bitki Genetik Kaynaklarının Toplanması, Muhafazası ve Kullanılması Hakkında Yönetmelik*, RG No. 21316; *Bitki Çeşitlerinin Kayıt Altına Alınması Yönetmeliği*, RG No. 26.755 (13.01.2008); *Doğal Çiçek Soğanlarının Üretimi, Doğadan Toplanması ve İhracatına İlişkin Yönetmelik*, RG No. 28358 (19.07.2012).

⁸¹ See RG No. 26149, Kanun No. 5488. See also *Organik Tarımın Esasları ve Uygulanmasına İlişkin Yönetmelik*, RG No. 27676 (18.08.2010); *İyi Tarım Uygulamaları Hakkında Yönetmelik*, RG No. 27778 (7.12.2010).

⁸² See RG No. 25890, Kanun No. 5403, as amended in 2014 at RG No. 29001, Kanun No. 6537.

⁸³ See RG No. 26.340, Kanun No. 5553, *Tohumculuk Piyasasında Yetkilendirme ve Denetleme Yönetmeliği*, RG No. 26755 (13.01.2008). Also, see *Tohumluk İthalatı Uygulama Genelgesi (2012/1)*; *Tohumluk İhracatı Uygulama Genelgesi (2012/4)*.

research, development and marketing of genetically modified organisms to prevent risks for human, animal and plant health;⁸⁴ and finally the Law on Veterinary Services, Plant Health, Food and Feed (2010), which aims to protect public health, consumer interests and the environment by establishing animal and phytosanitary controls and sanctions, as well as procedures for crisis management, risk assessment and public awareness.⁸⁵ The new Turkish Criminal Law (2004) in Articles 181 and 182 has established the crime of polluting the environment.⁸⁶

⁸⁴ See RG No. 27533, Kanun No. 5977. See also *Genetik Yapısı Değiştirilmiş Organizmalar ve Ürünlerine dair Yönetmelik*, RG No. 27671 (13.08.2011).

⁸⁵ See RG No. 27610, Kanun No. 5996, as amended by *Veteriner Hizmetleri, Bitki Sağlığı, Gıda ve Yem Kanunu'nda Değişiklik Yapılmasına Dair Kanun*, RG No. 29270, Kanun No. 6589. Also, see *Arıcılık Yönetmeliği*, RG No. 28128 (30.11.2011); *Hayvanlarda Soy Kütüğü ve Ön Soy Kütüğü Esasları Hakkında Yönetmelik*, RG No. 28133 (5.12.2011); *Suni Tohumlama, Tabii Tohumlama ve Embriyo Transferi Faaliyetleri Hakkında Yönetmelik*, RG No. 28136 (8.12.2011); *Bitkisel Gıda ve Yem İthalatının Resmi Kontrollerine Dair Yönetmelik*, RG No. 28145 (17.12.2011); *Ülkeye Giriş Yapan Canlı Hayvanlarda Yürütülecek Veteriner Kontrollerinin Düzenlenmesine Dair Yönetmelik*, RG No. 28145 (17.12.2011); *Yurt İçinde Canlı Hayvan ve Hayvansal Ürünlerin Nakilleri Hakkında Yönetmelik*, RG No. 28145 (17.12.2011); *Hayvan Satış Yerlerinin Ruhsatlandırılması ve Denetleme Usul ve Esasları Hakkında Yönetmelik*, RG No. 28152 (24.12.2011); *Risk Değerlendirme Komite ve Komisyonlarının Çalışma Usul ve Esasları Hakkında Yönetmelik*, RG No. 28152 (24.12.2011); *Hayvansal Gıdalar İçin Özel Hijyen Kuralları Yönetmeliği*, RG No. 28155 (27.12.2011); *Canlı Hayvan Ticareti Yapan Satıcıların Çalışma ve Denetlenmesi İle İlgili Usul ve Esaslar Hakkında Yönetmelik*, RG No. 28177 (18.01.2012); *Bulaşıcı Hayvan Hastalıkları İle Mücadelede Uygulanacak Genel Hükümlere İlişkin Yönetmelik*, RG No. 28179 (20.01.2012); *Su Hayvanlarının Sağlık Koşulları İle Hastalıklarına Karşı Korunma ve Mücadele Yönetmeliği*, RG No. 28190 (31.01.2012), *Yerli Hayvan Irk ve Hatlarının Tescili Hakkında Tebliğ'de Değişiklik Yapılmasına Dair Tebliğ*, RG No. 29173 (12.11.2014); *Yumurtacı Tavukların Korunması İle İlgili Asgari Standartlara İlişkin Yönetmelik*, RG No. 29183 (22.11.2014); *Çiftlik Hayvanlarının Refahına İlişkin Yönetmelik*, RG No. 29183 (22.11.2014).

⁸⁶ See RG No. 25611, Kanun No. 5237. Also see *2005 Kabahatler Kanunu*, RG No. 25772, Kanun No. 5326. Also, see KELEŞ, HAMAMCI, ÇOBAN, *op.cit.*, p. 627.

Conclusion

As outlined above, Turkey is party to most of the major international and regional environmental protection treaties. At the same time, Turkey has also implemented environmental protection within its own national laws at various levels. As a result of this, Turkey has been successful in protecting its biodiversity. However, this, of course, is an on-going process which requires vigilance and continuous effort.

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