PRZEGLĄD PRAWA ADMINISTRACYJNEGO
(1)2018 • DOI: 10.17951/ppa.2018.1.41-58

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# Animals with Regard to Climate Changes – International and European Law Aspects

*Zwierzęta a zmiany klimatu – aspekty unijne i prawnomiędzynarodowe*

## Introduction

The first thought that comes to us when we are talking about the relations between animal and climate change is that elephants, bears, or birds are affected by climate change. We do not even think about the fact that animals can be the cause of climate change and global warming. It is generally agreed that the gas production connected with industrialized animal agriculture is a significant contributor

to climate changes[1]. The contribution of the agricultural sector to total global greenhouse gas (GHG) emissions – methane ($CH_4$) and nitrous oxide ($N_2O$) – was between 10% and 12% in 2010 (rising to 24% when emissions from energy and land use for agriculture and forestry, other uses are included)[2]. The livestock sector (ruminants in particular) has the highest GHG emissions intensity and total emissions within agriculture[3]. Beef and cattle milk production accounts for respectively 41% and 20% of the sector's emissions, pig meat and poultry meat and eggs contribute respectively 9% and 8% to the sector's emissions[4]. In the EU, direct agricultural emissions comprised about 10% of total GHG emissions in 2016[5].

The agriculture sector is a significant emitter of GHGs which must be reduced, although it is acknowledged that this is more difficult in a sector which must continue to also produce food. The Food and Agriculture Organization (FAO) estimates potential to reduce emissions is about 30% of baseline emissions and contributes to the identification of low emission pathways by generating knowledge on livestock production systems, their GHG emissions and their mitigation potential[6].

Unfortunately, climate change is causing, and will cause, a massive loss of animal life, and those effects are likely to prove devastating in the future. It is well known that animals were the first who felt the biggest threat and foremost influence on climate change. Nonetheless, the relevant harms to animals have yet to become a serious part of the analysis of climate change policy[7]. It is worth mentioning that climate change contains a number of threaten factors which at first hand carry a threat for animals.

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[1] J. Cohen, B. Wagman, *Using the Law to Highlight the Link Between Animal Agriculture, Climate Change, and Diet*, "Animal Law Committee Newsletter" 2014, https://www.schiffhardin.com/Templates/Media/files/publications/PDF/Wagman_ALC_Fall2014.pdf [access: 23.10.2018].

[2] P. Smith, M. Bustamante, H. Ahammad, H. Clark, H. Dong, E. Elsiddig, H. Haberl, R. Harper, J. House, M. Jafari, O. Masera, C. Mbow *et al.*, *Agriculture, Forestry and Other Land Use (AFOLU)*, [in:] *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of IPCC*, Cambridge–New York 2014, https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter11.pdf [access: 23.10.2018].

[3] A. Golub, B. Henderson, T.W. Hertel, P.J. Gerber, S.K. Rose, B. Sohngen, *Global Climate Policy Impacts on Livestock, Land Use, Livelihoods, and Food Security*, "Proceedings of the National Academy of Sciences of the United States of America" 2013, Vol. 110(52), pp. 20894–20899, http://www.pnas.org/content/110/52/20894 [access: 23.10.2018].

[4] P.J. Gerber; H. Steinfeld, B. Henderson, A. Mottet, C. Opio, J. Dijkman, A. Falcucci, G. Tempio, *Tackling Climate Change Through Livestock*, http://www.fao.org/3/a-i3437e.pdf [access: 23.10.2018].

[5] *Annual European Union greenhouse gas inventory 1990–2016 and inventory report 2018. Submission to the UNFCCC Secretariat. Publications Office of the European Union*. Luxembourg, https://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2018 [access: 23.10.2018].

[6] See more: *Livestock, Food and Agriculture Organization of the United Nations*, http://www.fao.org/climate-change/our-work/areas-of-work/livestock/en/ [access: 23.10.2018].

[7] W. Hsiung, C.R. Sunstein, *Climate Change and Animals*, "University of Pennsylvania Law Review" 2007, Vol. 155, pp. 1696–1740.

According to the World Wildlife Fund (WWF), beef cattle are the first mammal in North America, which is likely to become a victim of global warming[8]. This breed of cattle lives in an area with a cool alpine climate. As the temperature rises due to increased greenhouse gas emissions, the food moves to higher levels or migrates to the north, trying to find suitable housing. Since its alpine settlement is declining and may disappear, this animal is at risk of extinction. It should be emphasized that this is just one of many examples. According to scientists, "if greenhouse gas emissions remain the same, by the year 2050, a quarter of species of animals and plants will disappear"[9]. The main symbol of the threat of climate change is the white bear. According to scientists, at the current rate of growth of global temperature on Earth until the middle of the 21st century, 42% of the summer ice will be lost, and after 75 years the white bear may disappear as a species[10].

As we can see, the inclined effect of climate change on animals is of indisputable importance to humans in the process of adaptation to climate change and, more generally, in the process of life. In connection with this, the proper issue of animal preservation arises. There are two basic ways to conserve biological diversity: *in situ*, which means conservation of habitats, and *ex situ*, through gene banks and zoos or botanical gardens. *In situ* conservation involves keeping a species in its natural environment and protecting that environment from anthropogenic damage[11]. Preservation *ex situ* means the preservation of components of biological diversity beyond their natural habitats[12]. The most important for the conservation of the representatives of the fauna are exactly the conditions *in situ* that are entitled to provide the animals with proper conditions, since they will be in the natural environment. Such terrains are exactly protected areas, which is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values[13].

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[8] *Latest Census Finds More American Pika Populations Disappear as Climate Warms*, World Wildlife Fund 2004, https://www.worldwildlife.org/press-releases/latest-census-finds-more-american-pika-populations-disappear-as-climate-warms [access: 23.10.2018].

[9] *Biologists Think 50% of Species Will Be Facing Extinction by the End of the Century*, "The Guardian", https://www.theguardian.com/environment/2017/feb/25/half-all-species-extinct-end-century-vatican-conference [access: 1.11.2018].

[10] *Impact of Climate Change on Species*, WWF Report 2015, https://wwf.fi/mediabank/7884.pdf [access: 1.11.2018].

[11] E.B. Weiss, S.C. McCaffrey, D.B. Magraw, A.D. Tarlock, *International Environmental Law and Policy*, second edition, US 2007, p. 868.

[12] Convention on Biological Diversity, UN 1992, https://www.cbd.int/doc/legal/cbd-en.pdf [access: 26.10.2018].

[13] International Union for Conservation Nature. *What is a protected area?*, https://www.iucn.org/theme/protected-areas/about [access: 28.10.2018].

Loss of the world's diversity would be worse than "energy depletion, economic collapse, limited nuclear war or conquest by a totalitarian government. As terrible as those catastrophes would be for us, they could be repaired in a few generations"[14].

## Livestock emissions and climate change international legal frameworks

The main international regime on climate change is driven by the United Nations. The major legal frameworks within it includes the United Nations Framework Convention on Climate Change (UNFCCC)[15], the Kyoto Protocol (KP) to the UNFCCC[16] and the Paris Climate Agreement[17].

The main international legal tool combating climate change is the UNFCCC which ensured cooperation between the parties towards limiting global temperatures and thereby addressing the impacts of climate change. This Treaty has established the UN climate regime and its "ultimate objective" in preventing "dangerous anthropogenic interference" with the climate system[18].

Of the six official GHGs, which are accounted for under the UNFCCC, only two of them, methane ($CH_4$) and nitrous oxide ($N_2O$), are regarded as agriculture emissions. With regard to the emissions derived from agriculture – it is widely accepted that such emissions will be included in the parties' commitments towards different sectors that emit GHGs in the atmosphere.

The UNFCCC establishes a basic commitment for all parties to report and/or implement national policies that address anthropogenic emissions from sectors such as agriculture[19] to conserve and enhance sinks and reservoirs of greenhouse gases, including biomass[20]. Moreover, the UNFCCC obliged the industrialized countries listed in Annex I to the Convention committed to returning their anthropogenic emissions to 1990 levels of these by the year 2000 and adopt national policies and measures that reduce GHG emissions and protect sinks and reservoirs[21].

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[14] E.B. Weiss, S.C. McCaffrey, D.B. Magraw, A.D. Tarlock, *op. cit*., p. 854.

[15] The UNFCCC was adopted on 9 May 1992, having entered into force on 21 March 1994, https://unfccc.int/resource/docs/convkp/conveng.pdf [access: 1.11.2018].

[16] It was established on 11 December 1997, having entered into force on 16 February 2005, Text of the Kyoto Protocol, https://unfccc.int/process/the-kyoto-protocol/history-of-the-kyoto-protocol/text-of-the-kyoto-protocol [access: 1.11.2018].

[17] Paris Agreement entered into force in 2016, https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf [access: 1.11.2018].

[18] See more: Art. 2 of the UNFCCC.

[19] See more: Art. 4(1)(a) and (b) of the UNFCCC.

[20] See more: Art. 4(1)(d) of the UNFCCC.

[21] See more: Art. 4.2(a) and (b) of the UNFCCC.

In particular, the risks to biodiversity due to the rapid pace of climate change can be traced also in the stated objective of the UNFCCC (1992): "to achieve (…) stabilization of the concentration of greenhouse gases in the atmosphere at a level that would not tolerate serious anthropogenic impacts on the climate system (…) in terms of time required for the natural adaptation of ecosystems to climate change (…)". It should not go without mentioning the measures provided by the UNFCCC and various state strategies aimed at mitigating climate change, which also directly affect animals in a negative way.

The Kyoto Protocol (KP) is the second treaty to the UN major legal frameworks combating climate change. The most significant provision outlined by the KP stipulates that the parties have to abide by an accepted albeit mandatory target reduction of anthropogenic emissions worldwide[22]. The Treaty provides the obligation of developed countries during 2008–2012 to reduce polluting emissions to no less than 5% of the emissions recorded in 1990, considered as the base year. The KP required those countries to achieve these targets primarily through national measures. The KP had its first period of commitments between 2008 and 2012, and the second period of commitments established by the Doha Amendment agreed from 2013 to 2020[23].

On the one hand, methane and nitrous oxide, which are emitted through livestock operations, are listed in Annex A to the KP and agriculture is listed under sector/source categories. On the other hand, the responsibility of the Annex 1 Parties to design and implement any mitigation measures that target livestock emissions from the agriculture sector or these source categories are discretionary. This discretion is also worded in the KP as a very general aim to promote sustainable agriculture[24] and J. Verschuuren *et al*. argue that in essence it has little influence over effective reduction of livestock emissions[25]. The non-Annex 1 Parties only have to regularly formulate, publish, implement, and update national and regional programmes that contain measures towards mitigating and adapting climate change impacts from agriculture amongst other sectors.

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[22] D. Savy, A. Nebbioso, R.D. Condor, M. Vitullo, *The Kyoto Protocol and European and Italian Regulations in Agriculture*, [in:] *Carbon Sequestration in Agricultural Soils*, ed. by A. Piccolo, Berlin–Heidelberg 2012, https://www.researchgate.net/publication/256121400_The_Kyoto_Protocol_and_European_and_Italian_Regulations_in_Agriculture [access: 15.11.2018].

[23] The Doha Amendment, https://unfccc.int/process/the-kyoto-protocol/the-doha-amendment [access: 1.11.2018].

[24] See more: Art. 2(1)(a) of the Kyoto Protocol.

[25] J. Verschuuren, M.J. Angelo, A. du Plessis, *Climate Change and Agriculture under the United Nations Framework Convention on Climate Change and Related Documents*, [in:] *Research Handbook on Climate Change and Agricultural Law*, ed. by M.J. Angelo, A. du Plessis, Cheltenham 2017, pp. 21–46.

The third treaty of international regime on climate change is the Paris Climate Agreement, which specifically encourages best efforts towards strengthening the global fight against adverse impacts of climate change[26]. The Paris Climate Agreement keeps the global average temperature rise well below 2°C above pre-industrial levels and pursues efforts to limit the temperature increase to 1.5°C above pre-industrial levels[27].

Unfortunately, the Paris Climate Agreement does not pay attention to agriculture. Agriculture was hardly specifically mentioned in the various versions of the Negotiating Text for the Paris Climate Agreement, nor in the final text that was adopted at COP21[28]. The only mention was in the provision on mobilizing finance where states are called upon to support the integration of climate objectives into other policy-relevant areas and activities "such as agriculture"[29]. In the final Agreement Negotiating Text all references to "agriculture" had disappeared. As a consequence, the Paris Climate Agreement, as adopted at COP21, does not refer to agriculture at all[30].

However, the preamble of the Paris Agreement recognizes the engagements of all levels of government and various actors in addressing climate change. M. MacDonald opines that such an assertion may be used to encourage the animal agriculture industry towards ensuring effective livestock production, feeding practices, health management, and manure management – and therefore reducing the level of their anthropogenic emissions, and addressing adverse effects of climate change[31].

Nonetheless, to reach the target agreed under the Paris Agreement may require net zero emissions from all sectors, including agriculture at some point around or after 2050, with zero net emissions being required sooner if the pace of emission reduction from all sectors is not at a sufficiently high level of ambition in the intervening years[32].

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[26] UN Climate Change Annual Report 2017, https://unfccc.int/resource/annualreport/ [access: 1.11.2018].

[27] See more: Art. 4 of the Kyoto Protocol.

[28] M.J. Angelo, A. du Plessis (eds.), *Research Handbook on Climate Change and Agricultural Law*, Cheltenham 2017, p. 43.

[29] J. Verschuuren, *The Paris Agreement on Climate Change: Agriculture and Food Security*, "European Journal of Risk Regulation" 2016, Vol. 7(1), pp. 54–57.

[30] M.J. Angelo, A. du Plessis, *op. cit.*, p. 44.

[31] M. MacDonald, *The Paris Climate Agreement: What Does it Mean for Animals – and How We Eat?*, 21 December 2015, The Huffington Post Blog, http://www.huffingtonpost.com/mia-macdonald/the-paris-climateagreeme_b_8842108.html [access: 1.11.2018].

[32] K. Hart, B. Allen, C. Keenleyside, S. Nanni, A. Maréchal, K. Paquel, M. Nesbit, J. Ziemann, *Research for the Agri Committee – the Consequences of Climate Change for EU Agriculture. Fol-*

From a climate policy point of view, livestock and manure emissions are part of the Effort Sharing Decision (ESD) and count towards the non-ETS (Emissions Trading System) sector target. Agricultural mitigation efforts for non-$CO_2$ GHGs are covered under the EU's ESD addressing sectors not covered by the EU-ETS. The ESD includes specific binding targets on Member States to 2020 with flexibility on the potential contribution of agriculture as opposed to other ESD sectors (e.g. transport)[33].

The ESD[34] lays down GHG emissions limits (annual emission allocations) for each Member State for each year of the period from 2013 to 2020 and a mechanism to annually assess compliance with those limits. GHG emissions means the emission of carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride ($SF_6$) from the categories listed in Annex I, expressed in terms of tonnes of carbon dioxide equivalent. Member State must report on their ESD sector emissions on an annual basis, including information on national policies and measures taken to promote emission reductions and projections for future reductions. MS have to report on: (a) their annual greenhouse gas emissions, (b) the use, geographical distribution and types of, (c) as well as the projected progress towards meeting their obligations under this Decision, including information on national policies and measures and national projections and information on planned additional national policies and measures envisaged with a view to limiting greenhouse gas emissions beyond their commitments under this Decision.

A set of other EU policies with relevance to agriculture complements EU climate change ambitions, either through incorporating actions aimed at reducing GHG emissions into law or by providing incentives for their uptake.

There are possibilities for regulating the GHG emission from livestock through the Rural Development Program (RDP) under the Common Agricultural Policy (CAP)[35]. These include Regulations relating to the CAP, in particular: the Rural

*low-Up to the COP21 – UN Paris Climate Change Conference*, http://www.europarl.europa.eu/RegData/etudes/STUD/2017/585914/IPOL_STU(2017)585914_EN.pdf [access: 1.11.2018].

[33] *Ibidem*.

[34] Decision No. 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2009.140.01.0136.01.ENG [access: 1.11.2018].

[35] See more: *EU Livestock in the context of climate change* https://en.mfvm.dk/fileadmin/user_upload/MFVM/MFVM_English/Discussion_paper_-_EU_Livestock_in_the_context_of_climate_change.pdf [access: 1.11.2018].

Development Regulation[36] and the Regulation on Direct Payments[37] which requires those entitled to the basic payment or single area payment schemes to observe on all their eligible land agricultural practices beneficial for the climate and the environment. The RDP provides a framework for the measures each Member State should provide. However, there are some room for the Member State to design and focus the operations in each measure as the Member State deems appropriate[38]. But as only a few Member States have implemented climate actions under the RDP at all, there is large potential to improve climate change mitigation in the livestock sector through the measures of the RDP[39].

In 2011, EU leaders adopted low carbon roadmap 2050[40]. The European Council's conclusions state that the 40% emissions reduction target would be achieved through a contribution of emission reductions of 43% in the ETS sectors (compared to 2005) and 30% in the non-ETS sectors. According to the carbon roadmap 2050, it is important to note that, by 2050, agriculture is projected to represent a third of total EU emissions, tripling its share compared to today. Moreover, its importance in terms of climate policy is, therefore, set to increase: if it does not achieve the projected emissions reductions, other sectors would need to reduce even more, which would come at a high cost. The farming sector is also potentially at some risk of carbon leakage, so changes in production and trade patterns should not in the longer term undermine global reduction of emissions.

The EU and other developed countries will continue to support climate action to reduce emissions and build resilience to climate change impacts in developing countries. Other countries are encouraged to provide or continue to provide

[36] Regulation (EU) No. 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No. 1698/2005, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013R1305 [access: 1.11.2018].

[37] Regulation (EU) No. 1307/2013 of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy and repealing Council Regulation (EC) No. 637/2008 and Council Regulation (EC) No. 73/2009, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32013R1307 [access: 1.11.2018].

[38] EC (European Commission) (2015), *EU Agriculture and Climate Change*, https://ec.europa.eu/agriculture/sites/agriculture/files/climate-change/factsheet_en.pdf [access: 1.11.2018].

[39] COWI (2016). *Mainstreaming of Climate Action into ESI Funds*. Final Report. European Commission DG Climate Action. Report prepared by: M.S. Jespersen, M.M. Sørensen, B. Raphaelsen, R. Wessel, L.C., Wähler, A. Olesen, S.L. Bager, J. Skolina, https://ec.europa.eu/clima/sites/clima/files/budget/docs/report_mainstreaming_of_climate_action_en.pdf [access: 1.11.2018].

[40] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee of the Regions. A Roadmap for moving to a competitive low carbon economy in 2050, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX-:52011DC0112 [access: 1.11.2018].

such support voluntarily. Developed countries intend to continue their existing collective goal to mobilize USD 100 billion per year by 2020 and extend this until 2025[41]. A new and higher goal will be set for after this period.

As a result of the consideration about the international legal regulation of livestock emission impact on the climate change, it should be noted that emissions from the agriculture sector are not categorized within the UNFCCC and the KP under a specific sector. The UNFCCC and the KP seek to specifically mitigate the current levels of GHG emissions from the agriculture sector. Thereafter, other adaptive rule developments that play a role towards reducing these emissions should also be considered in brief. The ESD establishes binding annual greenhouse gas emission targets for EU MS for the period 2013–2020. These targets concern emissions from most sectors not included in the ETS, such as transport, buildings, non-$CO_2$ agriculture and waste.

Finally, the absence of clear targets for the agricultural sector is allowing EU Member States to put off the difficult decisions that must be made in relation to emission reductions and removals for the agricultural sector. The development of some form of targets for the sector at the EU and/or Member State level could, therefore, help provide an incentive for the agricultural sector to start planning now for the significant contributions that will have to be made to emissions reductions in the longer term.

## Biodiversity conservation: Climate change international legal regime

It is worthwhile for humanity to ensure, with all possible legal international instruments, the maximum conservation of the livelihoods and ways of their migration. At the international level, the problem of biodiversity conservation through the significant pace of climate change has been regulated by a number of conventions. Each convention regulates a certain aspect of animal conservation.

Up to date, in the world, this issue is regulated by a number of international conventions such as the Convention on Biological Diversity of 1992[42], the Convention on the Conservation of Migratory Species of Wild Animals of 1983[43], the Convention on International Trade in Endangered Species of Wild Fauna

[41] K. Hart, B. Allen, C. Keenleyside, S. Nanni, A. Maréchal, K. Paquel, M. Nesbit, J. Ziemann, *op. cit.*

[42] The Convention on Biological Diversity, https://www.cbd.int/doc/legal/cbd-en.pdf [access: 30.10.2018].

[43] The Convention on the Conservation of Migratory Species of Wild Animals, https://www.cms.int/sites/default/files/instrument/CMS-text.en_.PDF [access: 30.10.2018].

and Flora of 1973[44], the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat of 1971[45], the Bern Convention on the Conservation of European Wildlife and Natural Habitats of 1979[46].

General convention is the Convention on Biological Diversity of 1992, the purpose of which is the conservation of biological diversity, the sustainable use of its components, and the joint, equitable and fair use of the benefits associated with the use of genetic resources. The Convention on Biological Diversity of 1992 also does not overlook the problem of biodiversity loss due to climate change, which is one of the main concerns.

In turn, at the national level in the United States, the Law "On Endangered Species" is used as a means to stop or reduce influence of climate change[47]. The Endangered Species Act of 1973 is one of the few dozens of US environmental laws passed in the 1970s, and serves as the enacting legislation to carry out the provisions outlined in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[48]. The law defined the "extreme boundaries" of the species of endangered animals due to climate change. This means that any federal project that may have an impact, for example, on the polar bear, should be subject of careful monitoring[49].

It is worth paying attention to the fact that the Convention on the Conservation of Migratory Species of Wild Animals as well as CITES have defined every generation of people, such that it is obliged to ensure the preservation of this heritage, referring to the value of wildlife for a person, as well as the keeper of Earth resources for subsequent generations.

As beneficiaries of a planetary trust, each generation has an equitable right to use and benefit from the planetary resources. There are factors that prevent the present generation from fully using and benefiting from the legacy[50].

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[44] The Convention on International Trade in Endangered Species of Wild Fauna and Flora, https://www.cites.org/sites/default/files/eng/disc/CITES-Convention-EN.pdf [access: 30.10.2018].

[45] The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, https://www.ramsar.org/sites/default/files/documents/library/scan_certified_e.pdf [access: 30.10.2018].

[46] The Bern Convention on the Conservation of European Wildlife and Natural Habitats, https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680078aff [access: 30.10.2018].

[47] Endangered Species Act of 1973, https://www.fws.gov/endangered/esa-library/pdf/ESAall.pdf [access: 1.11.2018].

[48] U.S. Fish & Wildlife Service. International Affairs. *CITES*, https://www.fws.gov/international/cites/ [access: 28.10.2018].

[49] S. Kravchenko, *Climate Change, Biodiversity, and Human Rights: Impact, Synergy, and Confluence*, "Environment. People. Law Journal" 2011, Vol. 13–14(53–54), p. 17.

[50] E.B. Weiss, S.C. McCaffrey, D.B. Magraw, A.D. Tarlock, *op. cit.*, p. 857.

There are three problems of equity regarding access to and use of the legacy: 1) the needs of future generations, which foreclose the present generation from consuming all of the fruits of the natural and cultural resources of its ancestors; 2) the severe impoverishment of some communities, which prevents them from being able to share equitable in the planetary legacy; 3) actions by members of the present generation that prevent other members from enjoying the fruits of the legacy[51].

One of the problems is theoretically based on the relationship which all members of the present generation have as beneficiaries of the natural and cultural resources of the planet. Members of the present generation may also prevent other members of their generation from enjoying natural and cultural resources when their activities cause environmental or other damage to them. The three problems of intergenerational equity – depletion of resources for future generations, degradation in the quality of resources, and (discriminatory) access to the benefits from and use of the resources – are interrelated[52].

The Convention on the Conservation of Migratory Species of Wild Animals is issued directly at protecting migratory species of wild animals, which recognizes that wildlife in all their diversity is an unchanging part of the natural system of the Earth and should be preserved for good humanity.

The Convention on the Conservation of Migratory Species of Wild Animals also explicitly refers to the importance of allowing wildlife to migrate over the line of national jurisdictions, which directly means the emphasis on the issue of climate change and its impact on the state of migration of animals in this regard. The issue of protecting the migratory species and the means that will be used for this will depend on where the Annex is to a migratory species. Species considered endangered are listed in Appendix I. Appendix II lists migratory species which have an unfavorable conservation status that require international agreements, as well as species whose conservation status would be significantly improved as a result of international cooperation that can be carried out on the basis of international agreements[53].

Article 5 of the Convention provides that the purpose of each agreement is to restore or to secure a favorable status for the conservation of migratory species[54]. In particular, the Convention identifies those categories of migratory species which have an unfavorable status that require international agreements,

[51] *Ibidem*, p. 868.

[52] *Ibidem*.

[53] Appendices I and II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), https://www.cms.int/sites/default/files/basic_page_documents/cms_cop12_appendices_e_0.pdf [access: 26.10.2018].

[54] Convention on the Conservation of Migratory Species of Wild Animals, https://www.cms.int/sites/default/files/instrument/CMS-text.en_.PDF [access: 1.11.2018].

as well as those species whose conservation status would have been significantly improved as a result of international cooperation.

For example, the Memorandum of Understanding concerning Conservation and Restoration of the Bukhara Deer (*Cervus elaphus bactrianus*)[55] and the Memorandum of Understanding concerning Conservation Measures for the West African Populations of the African Elephant (*Loxodonta africana*)[56] were concluded under the auspices of the Convention on the Conservation of Migratory Species of Wild Animals[57]. The Memorandum of Understanding concerning Conservation Measures for the Aquatic Warbler (*Acrocephalus paludicola*)[58] was concluded under the auspices of the Convention on Migratory Species of Wild Animals which covers also Poland and Ukraine. It is worth mentioning that there is small quantity of such agreements between the states. At the same time, there is a significant number of animals that need to be protected. It provides a good basis for many countries to revise their policy on the protection of migratory species.

It is well known that climate change has a negative impact on the ecosystem of wetlands, which are important for waterfowl, and also have a natural, economic and socio-cultural significance. The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, defines the conditions for the inclusion of such wetlands in a special list that will be subject to international protection. The Convention is aimed at the conservation and sustainable use of these lands through local, regional and national actions and international cooperation, which will be part of a balanced development of the world. In Ukraine, the inclusion of wetlands in such a list is very important in preserving such areas and conducting economic activities, since such territories are mostly part of the ecological network. Some of the wetlands are included in the nature reserve fund of Ukraine, which automatically gives them more protection as valuable areas. A striking example of the wetlands, listed in the special list of the Convention, is the component of the natural reserve fund of Ukraine – the

[55] The Memorandum of Understanding concerning Conservation and Restoration of the Bukhara Deer (*Cervus elaphus bactrianus*), https://www.cms.int/bukhara-deer/sites/default/files/basic_page_documents/mou_e.pdf [access: 28.10.2018].

[56] The Memorandum of Understanding concerning Conservation Measures for West African Populations of the African Elephant (*Loxodonta africana*), https://www.cms.int/west-african-elephants/sites/default/files/basic_page_documents/MoU_West_African_Elephants_English_Final.pdf [access: 28.10.2018].

[57] Convention on the Conservation of Migratory Species of Wild Animals, https://www.cms.int/sites/default/files/instrument/CMS-text.en_.PDF [access: 1.11.2018].

[58] The Memorandum of Understanding concerning Conservation Measures for the Aquatic Warbler (*Acrocephalus paludicola*), https://www.cms.int/aquatic-warbler/en/documents/agreement-text [access: 29.10.2018].

National Park "Tuzlovsky Liman" (Shagany–Alibei–Burnas Lakes System)[59]. The only obstacle in the protection of such territories is that the entire system of lakes is not part of the National Park, which complicates the management of wetlands. At another point, in Poland the main wetland territory defined by the Convention coincides with the boundaries of the protected area, which allows for more effective compliance with the requirements of the Convention on the protection of land, for example, Biebrzański National Park[60], which is located in the Podlaskie voivodeship[61].

The Bern Convention on the Conservation of European Wildlife and Natural Habitats became the basis for the formation of the EU-wide ecological network, which acts as the only territorial system of protected areas, aimed at maintaining the populations of wild fauna at such a level or bringing them to a level that corresponds, in particular, to environmental, scientific and cultural requirements, while taking into account the economic and recreational requirements as well as the needs of subspecies, varieties or forms that are at risk at the local level.

The above-mentioned Convention focuses on the consolidated efforts of all negotiated parties to take measures to implement a national conservation and management policy, focusing on endangered species and habitats threatened with extinction. It should be noted that the disappearance of natural environments is mainly due to human activities and the rapid pace of climate change.

At the end of the 20th century, in Europe, on the agenda the main question was about focusing efforts on protecting nature not only on certain specific objects or territories, but also on their "connecting" elements which should play the role of natural corridors for animals. Such territories should have been formed as a "network" of protected areas, called "ecological network". Creation of a single integral territorial system – the ecological network – will ensure the deceleration of the rate of extinction of animals and the adaptation of their lives to new geographical conditions. This is due to the fact that in order to ensure the resistance of animals to the effects of climate change, it will be necessary to ensure the existence of healthy ecosystems and habitats.

The methodological basis for the formation of eco-networks is the International Strategy for Sustainable Development, the principles of which were pro-

[59] National Park "Tuzlovsky Liman" (Shagany–Alibei–Burnas Lakes System), http://tuzlim.org.ua/wp-content/uploads/%D0%9F%D0%BE%D0%BB%D0%BE%D0%B6%D0%B5%D0%BD%D0%BD%D1%8F-%D0%BD%D0%BE%D0%B2%D0%B5.pdf [access: 25.10.2018].

[60] Biebrzański National Park, https://www.biebrza.org.pl/151,the-biebrza-national-park [access: 26.10.2018].

[61] The List of Wetlands of International Importance (Convention on Wetlands), https://www.ramsar.org/sites/default/files/documents/library/sitelist.pdf [access: 29.10.2018].

claimed in the Declaration of the UN International Conference on Environment and Development in 1992[62].

At the present time, an EU-wide ecological network is being created in Europe that ensures the preservation of the natural environment of animals and the ways of their migration, regardless of the existing borders of the countries. It is known that nature has no boundaries and animals also should not have to feel them, especially during the period of climate change. That is why today in Europe there are a number of transboundary natural reserves that properly provide for the migration of animals across national borders. Such natural reserves operate on the basis of bilateral or multilateral agreements between states, for example, the Agreement between the Government of Ukraine, the Government of the Republic of Belarus and the Government of the Republic of Poland on the establishment of a transboundary biosphere reserve "Western Polissya", in which Western Polissya is defined as a territory with unique natural values and an important element of the Pan-European Ecological Network[63].

The basic approaches and principles of the formation of a Pan-European Ecological network are defined by the Bern Convention on the Conservation of European Wildlife and Natural Habitats. In the European Union countries, they have found details in the Birds and Habitats Directives, which define the special protected areas, as well as the conservation of natural habitats of the existence of natural fauna and flora, which defines areas important for the European Union or natural objects which are of significance for Europe, in an aspect of preservation the biological and landscape diversity[64,65]. These two Directives form the Natura 2000 to organize a system of special protection areas.

In Ukraine, the legal framework for the organization, conservation and rational, non-exhaustive use of the ecological network is the Law of Ukraine "On the Ecological Network of Ukraine"[66], and also there is a draft law "On the Territory

[62] The Rio Declaration on Environment and Development, http://www.unesco.org/education/pdf/RIO_E.PDF [access: 28.10.2018].

[63] The Agreement between the Government of Ukraine, the Government of the Republic of Belarus and the Government of the Republic of Poland on the establishment of a transboundary biosphere reserve "Western Polissya", http://zakon.rada.gov.ua/laws/show/998_534 [access: 27.10.2018].

[64] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0147&from=EN [access: 10.11.2018].

[65] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31992L0043&from=EN [access: 10.11.2018].

[66] The Law of Ukraine "On the Ecological Network of Ukraine", http://zakon.rada.gov.ua/laws/show/1864-15 [access: 1.11.2018].

of the Emerald Network". The Emerald Network is a network of protected areas whose purpose is to preserve the natural fauna, flora and habitats important for the whole Europe, the basis of which is the Bern Convention of 1979[67]. In Poland, in turn, the ecological network is called Natura 2000 (applies to the European Union Member States), which is formed on the basis of two Directives of the European Union. The legal basis for the formation, conservation, protection and rational use of the ecological network Natura 2000 is the Nature Conservation Act (Ustawa o ochronie przyrody)[68].

## Conclusions

Therefore, it should be concluded that the issue of the impact of climate change on animals today is one of the most important, as evidenced by raising this issue through international conventions such as the Convention on Biological Diversity of 1992, the Convention on the Conservation of Migratory Species of Wild Animals of 1983, the Convention on International Trade in Endangered Species of Wild Fauna and Flora of 1973, the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat of 1971, the Bern Convention on the Conservation of European Wildlife and Natural Habitats of 1979. Each convention makes an accent on the conservation of fauna representatives in modern conditions because of their importance for human life. Conventions do not ignore also the reasons for a significant decline in biological diversity, among which the main role is taken by the effects of climate change.

Now climate change has a significant impact both on animals and their habitats, which had led to the idea of an ecological network in Europe. One of the most important components of the ecological network is the connecting territories (ecological corridors), which give some opportunities for animals to migrate not only between protected areas, but also between countries. An important role in preserving biodiversity is given to international cooperation, which is noted in international conventions. So, thanks to international cooperation, international agreements are signed on the conservation of certain species of animals, whose range of distribution falls under several countries. Transboundary natural reserves also have been created to ensure migration of animals between countries.

[67] Emerald Network of Areas of Special Conservation Interest, https://www.coe.int/en/web/bern-convention/emerald-network [access: 1.11.2018].

[68] Ustawa o ochronie przyrody, http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20040920880/U/D20040880Lj.pdf [access: 30.10.2018].

It is worth noting that a significant number of countries around the world provide in their national legislation the basic provisions of international conventions for the conservation of biological diversity, which can be considered a good trend. It is a qualitative legal basis for regulating the conservation of animals from the negative effects of climate change, a driving force on the path to actual changes in the environment of animals, aimed at ensuring the proper conditions for their settlement and migration.

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**Abstract**: The article consists of three parts. Firstly, it introduces the connection between animal and climate change. On the one hand, the impact of agricultural emissions (livestock emissions) on climate change has been introduced. On the other hand, it has been presented that the climate change has a negative impact not only for the humankind, but also for the biodiversity (animals) which have an economic and socio-cultural significance. The second part provides an analysis of relevant international legal frameworks (UN Climate Change regime) that stipulate specifically in relation to livestock emissions globally and existing legal and policy frameworks in the EU that address livestock emissions, namely the Effort Sharing Decision and the Common Agricultural Policy. Thirdly, the paper focuses on the problem of biodiversity conservation though the significant pace of climate change has been regulated by a number of international conventions. EU-wide ecological network is being created in Europe that ensures the preservation of the natural environment of animals and the ways of their migration, regardless of the existing borders of the countries. Climate change is already having adverse effects on animal and those effects are likely to prove devastating in the future. Nonetheless, the relevant harms to animals have yet to become a serious part of the analysis of climate change policy.

**Keywords:** animal; climate change; livestock emissions; biodiversity; climate change legal regime; EU-wide ecological network

**Streszczenie**: Artykuł składa się z trzech części. W pierwszej został opisany związek pomiędzy produkcją zwierzęcą a zmianami klimatu. Z jednej strony wykazano wpływ emisji z rolnictwa (emisji z hodowli zwierząt gospodarskich) na zmiany klimatyczne, a z drugiej stwierdzono, że zmiana klimatu ma negatywny wpływ nie tylko na ludzkość, ale także na różnorodność biologiczną zwierząt, które mają znaczenie gospodarcze i społeczno-kulturowe. W drugiej części dokonano analizy wybranych przepisów prawa międzynarodowego (reżim prawny ONZ w zakresie zmian klimatu) oraz prawodawstwa i polityk UE (Wspólny Wysiłek Redukcyjny, Wspólna Polityka Rolna) dotyczących emisji z hodowli zwierząt gospodarskich. Trzecia część artykułu została poświęcona problemowi zachowania różnorodności biolo-

gicznej mimo przeobrażeń klimatu, w tym takim staraniom, jak Europejska Sieć Ekologiczna Natura 2000, która zapewnia zachowanie środowiska naturalnego zwierząt i sposobów ich migracji niezależnie od istniejących granic państwowych. Obserwowane już dziś zmiany klimatyczne wywierają ogromny wpływ na zwierzęta, a skutki mogą okazać się w przyszłości bardzo poważne. Szkody wyrządzane zwierzętom muszą więc stać się istotnym elementem międzynarodowej polityki dotyczącej zmian klimatycznych.

**Słowa kluczowe:** zwierzęta; zmiany klimatu; emisje z hodowli zwierząt gospodarskich; zachowanie różnorodności biologicznej; reżim prawny w zakresie zmian klimatu; Europejska Sieć Ekologiczna