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International Dimensions of EU Soil Policy – the Main Binding and Non-binding Legal Instruments

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Abstract. Global soil degradation is one of the most challenging environmental problems which requires an effective solution. However, the issue of soil protection is almost completely lacking in the field of international environmental law, which does not help address this problem successfully. This legislative indifference can also be observed in EU decision-making, even though it intends to play a leading role in the domain of environmental protection and nature conservation at global level. In addition to highlighting the importance of soils, this paper aims at presenting major international legal instruments defining EU soil policy. It provides an overview of binding and non-binding legal sources, international initiatives and programmes that have had a significant impact on the European soil protection. The social, economic and legal environment defined by them give EU legislation the room for manoeuvre, significantly affecting the everyday life of present and future generations. The role of soil as a natural resource, however, seems to be appreciative in recent years, as demonstrated by some international documents. At the same time, until the achievement of long-term, sustainable soil management and the creation of a 'land degradation neutral world', there is still a long way to go and this would be greatly aided by a comprehensive, modern approach to legislation.
Keywords: EU environmental policy, international law, soft law, soil degradation, soil protection

1. INTRODUCTION

Global environmental issues affect all environmental elements, including soils. Nonetheless, soil and its functions, when compared to water or air, has so far received little attention in decision-making processes. Soils hold one of the largest carbon pools on Earth and hosting at least a quarter of biodiversity and in addition provide the basis for food production. Moreover they play essential role in provision of many ecosystem services thus supporting human well-being.[1]

The main soil functions are:[2]

– reactor, transformer and integrator of the combined influences of other natural resources;
– medium for biomass production, primary food-source of the biosphere;
– storage of heat, water, plant nutrients and wastes;
– high capacity buffer medium, which may prevent or moderate the unfavourable consequences of various stresses;
– natural filter and detoxication system;
– significant gene reservoir, an important element of biodiversity;
– conservator of natural and human heritages;
– basis for constructions.

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[1] Dominati et al. (2010) 1867.
[2] Várallyai (2015) 9.

It is therefore clear that soil resources have a huge role to play in the maintenance of local, regional, and global environmental quality. So ever-increasing soil degradation is not only an environmental problem, but also has serious social and economic consequences, not to mention the interests of future generations.

2. THE NEED FOR SOIL PROTECTION: THE MAIN CAUSES OF SOIL DEGRADATION

The growth in world population meanst that there is an anticipated further increase in anthropogenic pressures on soils meaning that management of them is of decisive importance. This is also supported by the fact that cropland per capita has fallen by more than half since 1960.[3] Nearly one-quarter (24 %) of the world's land area is affected by degradation, impacting 1.5 billion people worldwide. About 24 billion tonnes of soil are lost annually as a result of water and wind erosion.[4] Soil degradation is also increasing in the EU mainly due to the inappropriate farming and forestry practices, environmental pollution, urban development and climate change. A Communication from the European Commission[5] has already highlighted the main threats to soil in 2002 being erosion, organic matter decline, contamination, salinisation, compaction, soil biodiversity loss, sealing, landslides and flooding. To address these issues, the European Commission adopted in 2006 a Soil Thematic Strategy,[6] which also includes a legislative proposal, the Soil Framework Directive.[7] However, after several years of unsuccessful legislative process, it was withdrawn in 2014.[8] The proposed Soil Framework Directive contained several forward-looking provisions based on international legal sources, later outlined in more detail, but had a number of weaknesses, such as the almost complete neglect of soil biodiversity.

The majority of the costs and consequences resulting from soil degradation are borne by society as a whole, including the cost implications of restoration or prevention and mitigation e.g., damage to infrastructures due to sediment run off; increased health-care needs for people affected by contamination; treatment of water contaminated through the soil; disposal of sediments; depreciation of land surrounding contaminated sites; increased food safety controls and also costs related to the ecosystem functions of soil.[9] Thus, the costs incurred by society as a result of erosion, organic matter decline, salinisation, landslide and soil contamination can reach € 38 billion per year in the EU-25 Member States.[10] However, there is no assessment to date of costs to society of compaction, soil

[3] Müller et al. (2015) 3.

[4] Müller et al. (2015) 3.

[5] Commission (EC), 'Towards a thematic strategy for soil protection' (Communication) COM (2002) 179 final, 16 April 2002.

[6] Commission (EC), 'Thematic Strategy for Soil Protection' (Communication) COM (2006) 231 final, 22 September 2006.

[7] Commission (EC), 'Proposal for a Directive of the European Parliament and of the Council establishing a framework for the protection of soil and amending Directive 2004/35/EC' COM (2006) 232 final, 22 September 2006.

[8] Commission (EU), 'Withdrawal of obsolete Commission proposals' OJ C 153, 21 May 2014.

[9] Commission (EC), 'Thematic Strategy for Soil Protection' (Communication) COM (2006) 231 final, 22 September 2006.

[10] Commission (EC), 'Thematic Strategy for Soil Protection' (Communication) COM (2006) 231 final, 22 September 2006.

sealing and biodiversity loss. The estimated value would probably increase if above-mentioned causes of soil degradation are also taken into account and sufficient quantitative and qualitative data from all EU member states are available. On the other hand, it must be highlighted that this estimation of costs arise from soil degradation does not consider the effect of standards adopted under cross-compliance since then or the effect of other measures recently taken by EU member states. Nevertheless, as changes in soil are very slow, it is likely that the current estimate of the extent of the problem is an appropriate reference. Based on current trends, it is difficult to draw conclusions about the future, mainly due to the scarcity of available data. However, it is clear that the level of anthropogenic pressures continues to increase, which is further aggravated by climate change. All this therefore predicts that the deterioration of soil in Europe will continue, probably at a faster rate than before.

In the following sections, the most important EU-relevant international documents and legal sources on soil protection are presented (with no claim of being exhaustive) that fundamentally define EU soil policy. Despite the fact that soil degradation is an increasing global problem, the majority of multilateral agreements deal only tangentially with soil protection. However, there are few international and regional conventions, protocols and agreements that have a soil protection role, but only one of these is a specific soil instrument – The Protocol for the implementation of the Alpine Convention of 1991 in the area of Soil Protection. At the same time, the importance of the topic is indicated by the fact that the 68th UN General Assembly has proclaimed 2015 as the International Year of Soils and 5 December as World Soil Day. The FAO (Food and Agriculture Organization of the United Nations) Director-General, José Graziano da Silva evaluated this as an important milestone for the road towards sustainable development.[11]

3. INTERNATIONAL (EU-RELEVANT) LEGAL INSTRUMENTS AND INITIATIVES FOR SOIL PROTECTION

Before the more detailed presentation of the main international legal sources, it is important to note that a distinction can be made between binding and non-binding (soft law) documents according to their legal nature. The former is often characterized by lengthy negotiation processes and are subject to ratification procedures resulting in legal obligations that make it possible to enforce them against the Parties to international treaties. An important criterion is therefore that the international agreement should aim at the creation of international law and obligation.[12] The most common forms of these are[13] treaties, conventions, framework-conventions but also the protocols containing detailed rules of a treaty.[14] Soft law documents, on the other hand, have no legally binding force but can create the foundations of more tangible legal instruments. Non-binding instruments are generally resolutions adopted by intergovernmental bodies, and they can be presented in

[11] International Year of Soils FAO brochure (2015) link 1.

[12] Kovács (2011) 86–87.

[13] It is important to note that the name is not decisive in terms of legally binding force (e.g. the term ‘Charter’ may also apply to a legal obligation and a soft law document), but there are names that are reserved for certain types of international treaties.

[14] Kovács (2011) 86–87.

the form of charters, declarations, recommendations, guidelines, action programmes or principles. They are not mandatory and do not require ratification and thus they can be completed within a shorter timeframe. These international legal instruments cannot therefore be regarded as international treaties in the sense of international law but play a decisive role in shaping international environmental policy, including soil protection. In many cases, there is a tendency to incorporate provisions of soft law documents into binding legal instruments, such as agreements or treaties later.

3.1. Non-binding Legal Instruments (Soft Law)

One of the first significant international milestones in environmental protection and nature conservation was the 1972 Stockholm UN Conference on the Human Environment, where *the Stockholm Declaration* containing key principles to date and the Action Plan for the Human Environment were adopted. Furthermore, the United Nations Environment Programme (UNEP) was also established as a result of this conference. Another important aspect of the event is that it has set out guidelines for international and national environmental policies for decades. At the UNEP jubilee meeting on the 10th anniversary of the World Conference in Nairobi, the Parties came to a dismal conclusion as the rate of global environmental degradation has not diminished in the past. *The Nairobi Declaration* pointed out that deforestation, soil degradation and desertification have reached alarming proportions against that require decisive action.

One of the earliest policy declarations on soil protection is also related to Europe, as the Council of Europe, modelled on the European Water Charter (1968), adopted *the European Soil Charter*[15] on 30 May 1972 as part of the attempt to stop soil degradation. It was the first legal action worldwide to protect soils. By declaring the 12 principles, Member States have set themselves the objective of promoting the protection of soils against damage from natural or human causes, and their rehabilitation. In addition to strengthening the role of soil in public opinion, it also called for extensive soil mapping, monitoring and soil research. This non-binding political declaration of intent has encouraged regional legislation on soil protection and has also served as a good basis for later European initiatives. The Charter was confirmed in the Recommendation of the Council of Europe[16] in 1992, followed by the 2003 revision of the document, resulting in its current version.[17]

In response to a suggestion made by President Mobutu Sese Seko of Zaire in 1975, a multinational task force started to draw up a guide including general principles for nature conservation and rational management of natural and environmental resources. The document known as *the World Charter for Nature,* sponsored by 34 developing nations (largely Africans), was adopted on 29 October 1982 at the UN General Assembly.[18] The Charter also introduced the requirement for sustainable management of land as a priority and the idea of supporting traditional methods of soil cultivation:

[15] Council of Europe, 'European Soil Charter' (Resolution) (72) 19. (30 May 1972).

[16] Council of Europe, 'Recommendation on Soil Protection' (Recommendation) No. R (92) 8, 18 May 1992.

[17] Council of Europe, 'Revised European Charter for the Protection and Sustainable Management of Soil' (adopted by the Committee of Ministers of Council of Europe at its 840th meeting on 28 May 2003).

[18] Wood (1985) 977.

> The productivity of soils shall be maintained or enhanced through measures which safeguard their long-term fertility and the process of organic decomposition, and prevent erosion and all other forms of degradation.[19]

During this time *the World Soil Charter*[20] was also prepared at the initiative of the FAO to encourage international cooperation in the rational use of soil resources and to draw attention to the importance of soil conservation as an international environmental management issue. The international instrument includes several goals and principles in this regard, such as maintenance and conservation of long-term soil fertility, prevention of soil loss, food production of adequate quality and quantity. Moreover, it provided guideline material for FAO member states to adopt in the preparation of their national legal frameworks for land use e.g., land use programmes, responsibility issues. It also set out the involvement of various economic policy instruments e.g., taxes, tax reliefs, subsidies, by which the possibility of conscious influencing behaviour of economic operators is created. This included the recognition that soil protection aspects need to be integrated into other policy areas. The Charter emphasized that, in addition to the governmental role of the FAO members, it is important for all farmers, economic operators and international organizations who have any influence on the status of soils, to do their best to achieve the objectives. The idea of the Charter was formulated at the first World Food Summit (Rome) in 1974, which was also confirmed, *inter alia,* in the Plan of Action to Combat Desertification presented at the UN Conference on Desertification in 1977. Subsequently, it was adopted by the FAO member countries during the 21st FAO Conference (Rome) in November 1981, providing a basis for international soil protection.

The importance of this document is also demonstrated by the fact that during the International Year of Soils in 2015, the FAO members endorsed *the renewed World Soil Charter*. According to the Global Soil Partnership (GSP),[21] which was set up by the FAO in 2012, the 13 principles listed in the Charter are still valid, but needed to be updated and revised in light of new scientific knowledge gained over the past 30 years. Major changes have occurred since 1981 with the emergence of new key references and concepts e.g., ecosystem services. Since then, several UN Environment and Development conferences have taken place as well as many guidelines and measures have been adopted, which also justified the need for its revision. The Intergovernmental Technical Panel on Soils (ITPS) was tasked to produce a revised version of the World Soil Charter which, as a result of wide consultations with international soil communities, was completed by summer 2014. However, the new Charter[22] was only adopted in Rome in June 2015, which still aims to achieve sustainable land use like its predecessor.

The *World Soils Policy* international initiative cannot be distinguished clearly from the World Soil Charter because they were prepared as conjunctive instruments by UNEP in 1982. Its, and the Charter's, significance was primarily to provide reliable guide for the

[19] UNGA World Charter for Nature, UNGA Res 37/7 (adopted 28 October 1982), Part II. 10 (b).

[20] World Soil Charter, Resolution 8/81 adopted by the 21st Session of the Food and Agriculture Organization of the United Nations (1981).

[21] It is an interactive, voluntary collaboration based on the participation of governmental and non-governmental organisations (institutes, research centres, universities, associations, etc.). Its main tasks are: promoting sustainable soil management, education and awareness, research, information and harmonisation.

[22] Revised World Soil Charter, adopted by the 39st Session of Food and Agriculture Organization of the United Nations (2015).

development of national soil policies in many countries around the world. This was mainly done in the form of technical guidelines, such as the '*Environmental Guidelines for the Formulation of National Soil Policies'*.[23] Their impact can be traced in shaping soil protection policy of several states, such as Australia, Iceland, Indonesia, Jamaica, Syria and Uganda.[24] *The World Conservation Strategy* of 1980 is a similar, non-binding instrument that was introduced to further encourage the establishment of a legal framework for national action against environmental degradation worldwide. This is reinforced by the fact that some nations prepared national soil conservation strategies by using the structure of this document.[25]

In 1992, the UN Conference on Environment and Development in Rio de Janeiro, produced three major soft law documents which indirectly play an important role in soil protection. By underlining the importance of sustainable forestry, agriculture and rural development, rational land and soil use, resource efficiency, *the Statement of Forest Principles,*[26] *the Rio Declaration*[27] and *Agenda 21*[28] set out principles that still play a decisive role in shaping the approach needed to properly address environmental problems.

The Conference of the Parties to the Convention on Biological Diversity decided at its 6th meeting in Nairobi 2002, to establish an international initiative for the conservation and sustainable use of soil biodiversity *(The FAO Soil Biodiversity Initiative),* co-ordinated by the FAO. On the one hand, the main objective was to raise awareness and researches on the effects of different management practices on soil biota in agro-ecological and socio-economic context as well in order to provide mankind with more comprehensive and useful knowledge. On the other hand, even more important aim was the promoting ownership and adaptation by farmers of integrated soil biological management practices as an integral part of their agricultural and sustainable livelihood strategies. The initiative for conservation and sustainable use of soil biodiversity was formally established in March 2006 and since then, together with other organizations,[29] it has supported a number of research projects. By covering almost the whole spectrum of soil organisms, soil biodiversity has been studied primarily in tropical areas, focusing in particular on communities of earthworms, termites, ants and nitrogen-fixing bacteria, which are of great importance in soil health and thus in sustainable farming.

Although the significance of soil protection has been explicitly mentioned in the outcome document[30] of *Rio+20* (the UN Conference on Sustainable Development held in Rio de Janeiro in June 2012), this conference was a 'follow-up' to the 1992 Rio Summit and was not successful in many respects. The document, consisting of six main parts,

[23] Olembo (1983) 1–32.

[24] Hannam and Boer (2002) 61.

[25] Hannam (2001) 385–94.

[26] Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all Types of Forests, adopted by the United Nations Conference on Environment & Development (1992).

[27] Rio Declaration on Environment and Development, adopted by the United Nations Conference on Environment & Development (1992).

[28] Agenda 21, adopted by the United Nations Conference on Environment & Development (1992).

[29] Such organizations are, for example, Tropical Soil Biology and Fertility of the International Centre of Tropical agriculture (TSBF-CIAT), Global Taxonomy Initiative, Institut pour la Recherche et la Développement (IRD) and CAB International.

[30] The future we want, UNGA Res 66/288 (adopted on 27 July 2012).

contains a few paragraphs on soil-related priorities in Part IV entitled 'Institutional framework for sustainable development'.[31] Accordingly, desertification, droughts and soil degradation are global problems that cannot be ignored, so the participants set the goal of achieving a 'land degradation neutral world'. The economic and social significance of good land management, including soil, was recognised, particularly its contribution to economic growth, biodiversity, sustainable agriculture and food security, eradicating poverty, women's empowerment, addressing climate change and improving water availability. Nevertheless, the conference cannot be regarded as successful as the participation of state governments has drastically declined over the last twenty years which has not allowed the adoption of legally binding norms at intergovernmental level. Thus, the aforementioned soft law document, although shortly after the conference was included in the UN General Assembly resolution, has no legally binding force.[32]

At the same time, an intergovernmental process was launched under the RIO +20, which aimed at developing an ambitious sustainable development framework. This was intended to lead to the concept of the *'Millennium Development Goals'* set up in 2000 for the post-2015 period, renewing the previous objectives. On 2 August 2015, the 193 UN Member States agreed on the *'Sustainable Development Goals',* which were adopted by the UN General Assembly at a special summit at the end of September. They can thus be of great importance in the field of soil protection, since soil plays a central role in many of the 17 objectives set out.[33]

3.2. Binding Legal Instruments

The United Nations Convention on Biological Diversity (UNCBD), which was opened for signatures at the 1992 Rio Conference on Environment and Development under the auspices of the United Nations, did not specifically cover the soil as a natural resource to be protected, but has also had a major influence on the scientific understanding of soil biota through the protection of ecosystems and biodiversity.[34] Since its entry into force on 29 December 1993, 195 countries, in addition to the EU, have ratified the Convention and it is still one of the most comprehensive global agreements on biodiversity protection. In 2010, at the 10th meeting of the Conference of the Parties in Nagoya (Japan), a 10-year strategic plan was adopted with 20 specific objectives (the Aichi targets)[35] to tackle more effectively the still unresolved global biodiversity loss. The conference emphasized the ecosystem-based approach to solving environmental problems, as most of the measures taken almost completely ignore this approach, which may be even more noticeable in the case of soil. At the 11th meeting of the Conference of the Parties (Hyderabad, India, 2012), the importance of soil biodiversity and conservation of carbon stocks has already appeared in the text of the outcome document.[36] These legal sources have had a significant impact on

[31] The future we want, UNGA Res 66/288 (adopted on 27 July 2012), Paragraphs 205–209.

[32] Kecskés (2012) 44.

[33] Transforming our world: the 2030 Agenda for Sustainable Development, UNGA Res 70/1 (adopted on 25 September 2015).

[34] Hågvar (1998) 1–2.

[35] Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets, Decision X/2 adopted by the Conference of the Parties to the Convention on Biological Diversity at its 10th meeting (2010).

[36] Report of the 11th meeting of the Conference of the Parties to the Convention on Biological Diversitiy (2012).

EU environmental (and soil) policy and obligations, as can be seen in the EU Biodiversity Strategy to 2020 and the Seventh Environment Action Programme as well.

In addition to the aforementioned Convention on Biological Diversity, *the United Nations Framework Convention on Climate Change* (UNFCCC) was also opened for signature at the Rio Earth Summit in 1992, which entered into force on 21 March 1994. Besides the providing of a general policy framework for government efforts to tackle climate change, its main objective is the

> stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.[37]

However, its weakness was that it did not contain quantified and country-specific legal obligations to reduce greenhouse gas emissions. The UNFCCC members have thus decided that the Convention should be complemented by a detailed restrictive agreement on greenhouse gas emission, which was manifested in the form of the *Kyoto Protocol*[38] in December 1997. This has been a significant step in the fight against climate change as it imposes quantified targets for states, and has legally binding force. However, it had to be specifically ratified by the Parties so it came into force only on 16 February 2005, more than seven years after the first negotiation. The Kyoto Protocol particularly stresses the importance of taking into account soils and sustainable land use, as they play a decisive role in influencing the carbon cycle and, thus, in regulating atmospheric concentration of greenhouse gases. The European Communities (EC) ratified the Protocol on 31st May 2002[39] and the Member States, which joined the EC before 2004, had to reduce their emissions by 8% in the first commitment period (2008-2012), which was also undertaken by the countries that joined in 2004, with the exception of Poland and Hungary (6%), and Malta and Cyprus not covered by Annex I to the Framework Convention. A result of the 'Doha Amendment'[40] adopted in Doha (Qatar) on 8 December 2012 was the establishment of the second commitment period (2013-2020) of the Kyoto Protocol.[41] The EU, its Member States and Iceland have committed themselves to limit their average annual greenhouse gas

[37] United Nations Framework Convention on Climate Change, 1771 UNTS 107; S. Treaty Doc No. 102-38; U.N. Doc. A/AC.237/18 (Part II)/Add.1; 31 ILM 849 (1992) Article 2.

[38] Kyoto Protocol to the United Nations Framework Convention on Climate Change, U.N. Doc. FCCC/CP/1997/7/Add.1, Dec. 10, 1997; 37 ILM 22 (1998).

[39] Council Decision of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder 2002/358/EC.

[40] Amendment to the Kyoto Protocol pursuant to its Article 3, paragraph 9 (the Doha Amendment), Decision 1/CMP.8 adopted by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) at its 8th session (2012).

[41] It also adds further important modifications to the text of the Kyoto Protocol:
1) the addition of a new greenhouse gas (nitrogen trifluoride);
2) a mechanism to introduce a simplified procedure enabling the adjustment of the commitments over the period 2013–2020 if the parties intend to increase their ambition;
3) a provision that automatically adjusts the target value of a party so that it does not exceed its average annual emission from 2013 to 2020 compared to the period 2008 to 2012.

emissions in the years 2013 to 2020 to 80% of 1990 levels. The 192 Parties of the Kyoto Protocol to the UNFCCC adopted the amendment but this will only enter into force after three quarters of the Parties to the Protocol submit their instruments of acceptance to the Depositary.[42] Unfortunately, the Paris Agreement,[43] adopted in December 2015, does not address the soil-related aspects of climate change at all so it cannot be considered as a significant step forward in this respect.

The United Nations Convention to Combat Desertification (UNCCD), adopted in June 1994, aims to prevent and mitigate droughts and land degradation, rehabilitate partly degraded and/or desertified land. According to UN data, 12 million hectares of land per year becomes unsuitable for production due to land degradation e.g., droughts and desertification.[44] However, it is important to point out that, despite the fact that UNCCD reports in general address all soil threats to some extent, measures mainly focus only on soil erosion, soil contamination and salinisation. One of the key instruments for the implementation of the Convention entered into force on 26 December 1996 is the national action programme (NAP), which basically defines the necessary measures by States Parties. At the 8th meeting of the Conference of the Parties (2007) in Madrid, a 10-year strategic plan[45] was adopted to address impediments to an effective implementation of UNCCD for the period 2008-2018. To date, in addition to the EU, 195 countries have joined the Convention. EU Member States can be divided into two groups depending on whether they consider themselves being affected by desertification with the affected countries including Cyprus, Hungary, Romania, Bulgaria, Croatia, Italy, Greece, Latvia, Malta, Portugal, Slovakia, Slovenia and Spain. In addition to the adoption of their NAPs, these States should report on measures already taken to mitigate desertification as well as measures planned within the framework of the NAP, including information on the financial resources they have provided, or are providing, under the Convention (national report). The States belonging to the latter group (Austria, Belgium, Czech Republic, Germany, Denmark, Finland, France, Ireland, Luxembourg, Estonia, Lithuania, Netherlands, Poland, Sweden and the United Kingdom), do not draw up NAPs but report on their donor activity within the framework of the UNCCD e.g., financial aid, research project. The European Community also submitted a report being the only organization Party to the UNCCD. To date, all Member States affected by desertification have ratified the Convention,[46] while less than half of the states have adopted national action programmes. Even fewer national reports (Greece, Hungary and Latvia) have included data on soil biota, because of which, unfortunately, it cannot be said to be a major step forward in the protection of soils.[47]

[42] This amendment shall enter into force in accordance with Articles 20 and 21 of the Kyoto Protocol.

[43] Paris Agreement, in UNFCCC, COP Report No. 21, Addendum, at 21, U.N. Doc. FCCC/CP/2015/10/Add.1, Jan. 29, 2016.

[44] Hori et al. (2011) 12.

[45] The 10-year strategic plan and framework to enhance the implementation of the UN Convention to Combat Desertification (2008-2018), Decision 3/COP.8 adopted by Conference of the Parties to the UN Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa at its 8th session (2007).

[46] UNCCD, Ratification list <http://www2.unccd.int/status-ratification> accessed on 18 January 2018.

[47] Hudec et al. (2007) 410.

In addition to the abovementioned multilateral global instruments, several regional international agreements have been developed, which have also had a significant impact on today's soil protection policy. Such binding legal sources came into force, *inter alia,* in the South Pacific region (SPREP-Convention for the Protection of the Natural Resources and Environment of the South Pacific Region; date of adoption: 1986, entry into force: 1990), Central and North Africa (African Convention for the Conservation of Nature and Natural Resources; date of adoption: 1968, entry into force: 1969) and South East Asia (The ASEAN Agreement on the Conservation of Nature and Natural Resources; date of adoption: 1985, entry into force: not yet in force), with the aim of the conservation and sustainable management of natural resources, including soils.[48] From a European point of view, *the Convention for the Protection of the Mediterranean Sea Against Pollution* (date of adoption: 1976, entry into force: 1978) and its *Protocol Concerning Specially Protected Areas and Biological Diversity* are worthy of note, since even though they refer to the conservation of coastal soils as an important task only for the protection of the sea and coastal areas thus preventing the diffuse pollution of water. Another major regional cooperation is *the Benelux Convention on Nature Conservation and Landscape Protection* (date of adoption: 1982, entry into force: 1983) between the Benelux countries (Belgium, Netherlands and Luxembourg), which even if it does not contain a specific provision regarding soils, indirectly contributes to their protection.[49]

The Convention on the Protection of the Alps or Alpine Convention adopted in 1991 and entered into force in 1995 stands out from the aforementioned agreements, as to date it is the only regional binding convention for soil protection in Europe.[50] Article 2 of the Convention specifically emphasizes the importance of soil conservation for the protection of the Alps, which can only be achieved in particular by applying sustainable forestry and farming methods. Thus, unnecessary disturbance of soils and the risk of soil erosion can be minimized. In addition, it includes the restriction of soil sealing and the requirement for soil protection to be taken into account, especially in the areas of regional planning, nature conservation, water management, mountain farming and mountain forest management. *The Alpine Convention Soil Conservation Protocol,* adopted in October 1998, further strengthens the soil protection aspects of the Convention.[51] Until now, with the exception of Switzerland, all the states concerned (Austria, Germany, Italy, France, Liechtenstein, Monaco and Slovenia) and the EU have ratified the Protocol, which has entered into force in 2003. Its great strength is that it overcomes predominantly land use approaches and interprets soil functions more widely, taking into account the biological aspect of soil. It requires, among other things, legal and administrative measures which, in the light of the precautionary principle, contribute to the protection of soils.[52] It highlights that the objectives of the Protocol can only be achieved by integrating soil protection aspects into

[48] Hannam and Boer (2002) 66–69.

[49] Hannam and Boer (2002) 67.

[50] The Convention is extremely diverse in terms of the objectives to be achieved, including, in addition to soil protection, areas such as water management, nature and landscape protection, population and culture, transport, energy, climate change etc.

[51] Protocol on the implementation of the Alpine Convention of 1991 in the field of soil conservation – Soil Conservation Protocol (The Alpine Convention Soil Conservation Protocol) (1998).

[52] The Alpine Convention Soil Conservation Protocol, Article 2.

other policies.[53] Moreover, it encourages the Contracting Parties to support all initiatives and cooperations for soil conservation at international, national and local level.[54] After the first chapter listed the general objectives, it sets out what special measures concerning designation and management of protected and endangered areas, economical and prudent use of soil resources, conservation of soils in wetlands and moors, agricultural, pasture farming and forestry practices; effects of tourism, soil contamination, environmental liabilities, waste management, etc. are needed.[55] Chapter III deals with the importance of soil research and monitoring, highlighting the significance of social awareness and environmental education. Chapters IV–V contain provisions on the implementation monitoring and evaluation of the Convention.

3.3. Other Initiatives and Programmes Relevant to Soil

The listed global and regional initiatives and conventions only marginally dealing with soil protection are insufficient to ensure sustainable land use.[56] This is borne out, *inter alia,* by the *Tutzing proposal* formulated in 1998, which was developed by a team of academics and scientists, supported by the International Society of Soil Sciences.[57] Accordingly, the adoption of a legally binding international convention on soil protection would be an ideal solution, which should be implemented on the basis of other conventions drawn up for the protection of natural resources. Actions to be taken by governments to achieve sustainable use of soils are outlined, encompassing regulatory measures, reviews of national legislation, creating databases on soil status, soil monitoring, increasing public awareness, and assisting developing countries to address problems such as soil degradation.[58] Nevertheless, the proposal has never formally entered into the phase of implementation, despite its great importance in shaping scientific discourses.

The Amman Resolution, published in 2000 by the International Union for Conservation of Nature (IUCN), has a similar view that the ecological functions of soils can only be protected through targeted and effective legal means.[59] It has been supplemented by further World Conservation Congresses' Resolutions in 2004 and 2008, which more specifically define the work to develop an international legal framework for sustainable land use, ultimately through IUCN Commission on Environmental Law's Specialist Group on Sustainable Use of Soil and Degradation. According to the expectations of international soil science and environmental law communities, the goal was/is to create an international legal instrument, which in the form of a protocol fits in with the global frameworks of existing conventions. Accordingly, two draft instruments were prepared: one as a draft protocol to the UNCCD, and the other as a draft protocol to the UNCBD.[60] However in 2009, a new draft protocol was also drawn up for the security and sustainable use of soil, which would greatly help improve the operation and effectiveness of the UNCCD. It could also serve as

[53] The Alpine Convention Soil Conservation Protocol, Article 3.
[54] The Alpine Convention Soil Conservation Protocol, Article 4–5.
[55] The Alpine Convention Soil Conservation Protocol, Article 6–18.
[56] Hannam and Boer (2002) 72.
[57] Hannam and Boer (2002) 71–72.
[58] Held et al. (1998) 6–24.
[59] Hannam and Boer (2002) 4.
[60] Boer and Hannam (2011) 6.

a basis for national legislation, helping Parties to meet their obligations under both the Convention and the UNCCD 10-Year Strategy.[61]

The UNEP launched the *Montevideo Programme III (2001–2010)*[62] in February 2001. The Programme includes a specific objective for soils as part of the new UNEP strategic environmental law programme.[63] Accordingly, it is an important goal to improve the conservation, rehabilitation and sustainable use of soils, which is to be achieved primarily through promoting the development and implementation of soil-related laws and policies. To achieve this, two actions have been proposed:

> (a) Review domestic land use laws, change of land use laws and tenure systems with the aim of achieving soil conservation and reclamation goals;
> (b) Promote the integration of soil conservation measures into relevant domestic laws, taking into account, where appropriate, relevant international instruments such as the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa.[64]

The new Programme was adopted at the 25th Session of the UNEP Governing Council/Global Ministerial Environment Forum in early 2009. *Montevideo Programme IV (2011–2020)* consists of 27 programme areas, of which the management and sustainable use of soils is one. In relation to soil, the Programme aims to improve national and international principles and standards and to support efforts under the UNCCD for the further development of legal approaches for the conservation, restoration and sustainable use of soils. It includes the strategy and the four actions that help achieve these objectives.[65]

[61] Boer and Hannam (2011) 7.

[62] The Programme for the Development and Periodic Review of Environmental Law for the First Decade of the Twenty-First Century, Decision 21/23 adopted by the Governing Council of UNEP on 9 February 2001.

[63] The Programme for the Development and Periodic Review of Environmental Law for the First Decade of the Twenty-First Century, Decision 21/23 adopted by the Governing Council of UNEP on 9 February 2001, Objective 12.

[64] The Programme for the Development and Periodic Review of Environmental Law for the First Decade of the Twenty-First Century, Decision 21/23 adopted by the Governing Council of UNEP on 9 February 2001, Objective 12.

[65] 'Strategy: Promote the development, dissemination and implementation of laws and policies that aim to enhance the conservation, sustainable use, control and reduction of soil degradation and, where appropriate, restoration of soils, including in support of work conducted by relevant bodies such as the Conference of Parties, its subsidiary bodies and the secretariat of the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa.
Action: (a) Support national efforts to review and implement national laws on land use and other related fields, including change of land-use laws, with the aim of achieving soil conservation and reclamation goals;
(b) Support the integration of soil conservation measures into relevant national laws and policies, and measures for better land-use planning and sustainable agricultural practices;
(c) Explore ways to strengthen existing legal instruments to address the conservation and sustainable use of soils and, as necessary, their restoration;
(d) Collaborate with Governments and relevant international bodies in facilitating educational programmes in legal matters related to the sustainable use of soils.'

4. CONCLUSIONS

In the absence of effective global action, soil degradation continues and, more than ten years after the adoption of the EU Thematic Strategy on Soil Protection, no systematic international and European control and protection of soil quality has been achieved. It is therefore important to:

– promote awareness of the importance of soils in current international and national environmental law;

– provide guidelines for the development of domestic soil legislation;

– consider the ecological function of soil for the conservation of biodiversity and the maintenance of human life;

– develop land use and soil quality indicators that enable standardized monitoring systems to be set up, providing globally comparable data for decision-making processes.

In order to enforce the principle of sustainability, an effective soil protection is essential, which creates the basis for sustainable management of the soil as a natural resource having regard to the continuous soil degradation. Thus, all competent and comprehensive international (and EU) legislative measures must be accepted to better protect soils.

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