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LAW FOR SUSTAINABLE SOILS: INTERNATIONAL AND NATIONAL ASPECTS

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Abstract: Work on the development of adequate international and national legal frameworks for sustainable soils has been underway for over a decade. Significantly, the initial drafting work on the need for an international convention or other instrument on soil came from the soil science community. In 1999, as a result of an approach from soil scientists to the IUCN Commission on Environmental Law a Specialist Group on Sustainable Soils and Desertification was established in order to investigate both international and national legal regimes to promote the sustainable use of soil. This paper looks at the development of an international legal instrument on sustainable soils, and explores the scope and range of possibilities for the form of such an instrument. It then canvasses the basic elements that should be included in the drafting of national of national legislation. It concludes by making some preliminary suggestions regarding the development of legal and institutional frameworks for soil management in Balkan countries.

Key words: Legal protection of soil, international and national legal frameworks

International environmental law and sustainable soil

In the past few years, soil degradation has begun to become a more specific part of the international debate on environmental matters. It will now be likely to become the subject of discussion at the Conference of the Parties of the Framework Convention on Climate Change in December 2009 as a potentially significant element in the accounting of carbon credits through processes of bio-sequestration. In addition, the sustainable use of soils will be of growing importance of agro-biodiversity within the context of the implementation of the Convention on Biological Diversity (1). Finally, the sustainability of soils will become an increasingly important issue in terms of achieving the United Nations Millennium Development Goals.

Since the early 1900's, over 200 multilateral environmental treaties, agreements and protocols have been developed to manage and protect the world's natural environments and natural resources (2). A number of the more recent of these instruments contain elements that can contribute to achieving the conservation and sustainable use of soil. However, none of them are sufficient on their own.

As Kiss and Shelton note, "[A]t the international level, cooperation started later than in other sectors *of* environmental protection, because it was generally considered that the soil conservation was mainly a domestic problem without international implications (3)."

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The following is a non-exhaustive list of the various instruments and guidelines concerning various aspects of soil conservation, use and management developed over the past three decades, together with brief comments on them:

- The **European Soil Charter** 1972 was adopted by the Committee of Ministers of the Council of Europe
- The **World Soil Charter** was published in 1981 by the UN Food and Agriculture Organization
- The **World Charter for Nature** of 1982 was the subject of a United Nations resolution.
- In 1983 UNEP prepared **Environmental Guidelines for the formulation of National Soil Policies.**
- The Food and Agricultural Organisation published an **International Code of Conduct on the Distribution and Use of Pesticides** in 1985.
- The **1991 Alpine Convention** includes soil conservation under its General Obligations in Article 2 (2) (d): 'Soil conservation - the objective is to reduce quantitative and qualitative soil damage, in particular by applying agricultural and forestry methods which do not harm the soil, through minimum interference with soil and land, control of erosion and the restriction of soil sealing.' The **Protocol on the Implementation of the Convention concerning the Protection of the Alps of 1991 in the area of Soil Protection** is the only international instrument which specifically deals with the protection of soil.
- The Council of Europe Committee of Ministers adopted **Recommendation 92(8) on Soil Protection** in 1992.
- In 1992, **Agenda 21**, adopted at the Rio Conference on Environment and Development, included reference to a range of aspects of soil, including matters relating to deforestation, desertification, mountain development, sustainable agriculture and rural development.
- The **1992 Convention on Biological Diversity** recognises that biological diversity is being significantly reduced by human activities, and this obviously includes the processes of 'soil degradation'. However, for this Convention to address the sustainable use of soil, a protocol would be necessary, containing substantive provisions emphasizing that the ecological functions of soil are essential for the conservation of biodiversity and the maintenance of human life.
- The **1992 Framework Convention on Climate Change** (UNFCCC) recognises the role of terrestrial ecosystems as a sink and reservoir for potential greenhouse gases and is concerned that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases (4). Two of the principal sources of greenhouse gases are changes in land-use cover and land use. Soil scientists have established that soil is a major reservoir of the earth's carbon and that the main agricultural activities which play a role in emissions of greenhouse gases and initiate or exacerbate soil degradation are deforestation, biomass burning, cultivation, using organic manure, applying nitrogenous fertilisers and livestock grazing (5). Excessive vegetation clearance, a principal cause of soil degradation, is one of the key concerns of the UNFCCC. Soil degradation exacerbates the emission of gases from terrestrial and aquatic ecosystems to the atmosphere. Accelerated wind and water soil erosion, on a global scale, is the principal soil degradation process. However, the UNFCCC by itself is not considered to be the most appropriate international legal vehicle to address soil protection because its implementation presently has a primary focus on making changes in the industrial sector, although in recent times, the forestry and

agricultural land use sectors have received more attention from the International Panel on Climate Change.

- The **Kyoto Protocol** of 1997 under the UNFCCC was adopted in 1997, and includes the responsibility to promote sustainable forms of land use in the light of climate change. It recognises the need to expand and preserve soil carbon sinks and improve agricultural practices in countries where a significant proportion of the emissions are related to the clearing of vegetation for agriculture (6). The Marrakesh Accords provided rules for the implementation of the Protocol (7).
- In 1994, the **United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa** (CCD) was opened for signature. The Convention sets out a range of principles and obligations for States parties, including the promotion of public participation and cooperation at all levels of government, and the setting up of appropriate institutional mechanisms. The Convention emphasises in particular the needs of developing countries, particularly in terms of the furnishing of technical and financial assistance to combat the effects of drought and desertification. However, the CCD is not a generally applicable instrument for the protection and sustainable use of soil because it does not include the specific types of elements that adequately recognise soil bodies as an ecosystems, and it does not contain other elements to capture the full range of legal principles and processes to protect and manage soil for its sustainable use. The geographic focus of the definition of 'desertification' to arid, semi-arid and dry sub-humid areas under the CCD excludes important climatic regions of the world that experience very severe soil degradation processes. This situation has been acknowledged by the addition of annexes to the CCD to provide for accession to the Convention for countries in non-arid areas that experience desertification, and where significant parts of the countries are outside the climatic parameters of the definition. This annexure process enables the CCD to be applied to a larger geographic area (8).
- In 2001, **Montevideo Programme III on the Periodic Review of Environmental Law** included provisions to improve the conservation, rehabilitation and protection and sustainable use of soils and the strategy to promote the development and implementation of laws and policies for enhancing the protection and sustainable use and, where appropriate, rehabilitation of soils;

The need for an international instrument on the conservation and sustainable use of soils.

- From the brief survey, above, it becomes clear that no particular international instrument or guideline developed so far takes a holistic approach to the conservation, management and sustainable use of soils on a global and regional basis. With the increasing focus on soil ecosystems in relation to their functions as carbon sinks, as well as the fundamental element for the conservation of terrestrial biodiversity, it is argued that an international instrument is urgently required to provide an adequate and more complete regime for the conservation and sustainable use of soils as a whole.

The actual form of such an instrument could be one of the following:

- A protocol to the Convention on Biological Diversity, the Framework Convention on Climate Change, and the Convention to Combat Desertification,

incorporating provisions, as the case may be for each protocol, which recognizes the fundamental functions of soils relating to both biological diversity conservation and carbon sinks, as well as the particular needs concerning soil degradation through processes of desertification, with obligations of signatory countries to establish legal and institutional mechanisms for the conservation and sustainable use of soils

- A technical annex to Convention on Biological Diversity, the Framework Convention on Climate Change and the Convention to Combat Desertification, as the case may be for each technical annex, which recognizes the fundamental functions of soils relating to both biological diversity conservation and carbon sinks, as well as the particular needs concerning soil degradation through processes of desertification, with recommendations to signatory countries for the establishment of legal and institutional mechanisms for the conservation and sustainable use of soils.
- A comprehensive stand-alone international instrument on sustainable soils, which takes an integrative approach to the need to conserve and sustainable use soils, with provisions which recognize the fundamental functions of soils relating to both biological diversity conservation and carbon sinks, as well as the particular needs concerning soil degradation through processes of desertification, with obligations of signatory countries to establish legal and institutional mechanisms for the conservation and sustainable use of soils
- A series of regional instruments on sustainable soils, modified to the requirements of groups of countries, incorporating similar provisions to those set out above.
- A set of non-legally binding guidelines, incorporating similar provisions to those set out above.

Elements for an international instrument on sustainable soils

A comprehensive draft for an international instrument has been prepared by the IUCN Specialist Group on Sustainable Soils and Desertification. This draft is not yet been published, as it is subject to further consultation and refinement. However, the following box contains the basic elements of such an international instrument. The provisions of the instrument can be modified according to the choice that is made by states which choose to adopt the instrument and to promote it at the international level.

1. Legal and administrative measures
2. Objective
3. Use of terms
4. Jurisdictional scope
5. Principle
6. Rights and responsibilities concerning the sustainable use of soil
7. General measures
8. Disadvantaged people & communities
9. Bilateral and multilateral agreements and arrangements
10. Competent national authorities and national focal points
11. Establishing an International Panel for Sustainable use of Soils
12. Capacity building, education and information
13. Community participation in the Sustainable Use of Soil
14. Public awareness and participation
15. Organizational systems to protect soil Management procedures for sustainable use of soil
16. National soil strategies
17. Soil policy

18. Soil assessment and soil planning
19. Identifying soil ecological communities
20. Plans of management for soil
21. Soil management and soil technologies
22. Codes of practice for sustainable soil
23. Research into the sustainable use of soil
24. Monitoring the condition of soil
25. Financing the Protection of the Soil Environment
26. Right to information
27. Protection of information
28. Transboundary issues
29. Obligation to notify other States
30. Resolution of transboundary soil degradation
31. Existing or potentially threatening processes to sustainable use of soils
32. Matters to consider in declaration of potentially threatening processes
33. Ecological soil standards
34. Principles for sustainable use of soils
35. Disadvantaged people
36. Women's rights
37. Liability and redress
38. Financial mechanism and resources

National legal approaches to soil conservation

In the context of the development of environmental law, legislation relating to soil has been a poor cousin to broader environmental regulatory regimes in most countries.

As Kiss and Shelton note, the legal protection for soil is rather recent. They state that "part of the neglect was due to a general perception of soil as an inexhaustible resource in view of its use for food production (9)." As noted above, however, from the 1980s, policies and guidelines have been developed for various aspects of the protection of soil. As a result, many more States around the world have adopted a wide variety of legislative approaches to deal with soil protection and management. However, these legal frameworks have been largely directed to the maintenance of soil productivity for agriculture and grazing.

In more recent times, there has been a realisation within environmental law circles that soil is an essential element of the conservation of terrestrial biological diversity, and that soil bodies perform a wide range of ecological functions, over and above their direct utilisation for agriculture, grazing and human life-sustaining activities. The need to focus more particularly on the function of soil as part of the bio-sequestration of carbon has become a more significant part of the debate.

The publication, *Drafting Legislation for Sustainable Soils: A Guide (10)* sets out the legal elements and principles intended to be adapted to the legislative needs and priorities for the protection and management of soil in a particular jurisdiction. The Guide argues that in formulating the legislation, the emphasis should be on the ecological aspects for the sustainable use of soil.

In this context, an "element" can include a principle, a rule of conduct or a power to achieve a particular legal purpose or to achieve a prescribed level of ecological management or standard for soil. An element can be used singly or in combination to promote actions for the achievement of the conservation and sustainable use of soil. An individual law can include a number of sub-elements in a format that gives an organization the power it needs, through its executive and administrative responsibilities, to achieve the conservation and

sustainable use of soil. These elements may be distributed among a number of individual laws in a national legal and institutional system.

Ecological aspects of the sustainable use of soil

In formulating environmental legislation and policy concerning sustainable soils, the most important aspects to be taken into account include (11):

- Soil degradation affects the global environment because it represents a loss of integral components of the world's ecosystems and global biodiversity.
- Loss of biodiversity is generally related to land use changes, including deforestation, agricultural intensification and urban expansion, which cause soil degradation.
- Accelerated soil degradation is mostly human-induced and occurs in all eco-regions of the world, irrespective of social, economic, and political conditions.
- Recognition that soil degradation has a significant impact on the total environment in any particular State.
- The extent, type, degree and severity of soil degradation vary between one soil community and another.
- Agricultural soils are being lost to non-agricultural uses, especially urbanization.
- Soil degradation causes damage to the soil resource by erosion, contamination, change of physical or chemical state (acidification, compaction, and salinisation) and loss of nutrients and organic matter.
- A significant proportion of the degradation of the atmosphere is due to greenhouse gas emissions caused by various forms of soil use associated with agriculture.
- Accelerated soil degradation and exacerbates the scarcity of productive lands and is a major threat to global food security and induces poverty.

The general characteristics of the current global situation with land resource use also give direction to the need for improved international and national soil legal and institutional frameworks, including:

- The uneven spatial and temporal distribution among nations of populations and consumptive needs.
- The links that have been established between the occurrence of soil degradation and poverty.
- The uneven distribution of productive, unutilized, and under-utilized or degrading soils.
- The substantial variation in cropping systems and occurrence of productive soils.
- Areas of surplus production and of food deficit.
- Availability of capital for soil protection is varied.
- The opportunities that exist to transfer knowledge on sustainable use of soils, combat degradation and achieve sustainable land management vary between regions and nations.
- Consideration of the global soil environment should be independent of political boundaries.

Use of *Drafting Legislation for Sustainable Soils: A Guide*

1. Each element is presented with a short introductory statement to introduce its key aspects, followed by a series of statements that can be viewed as functions or activities, or in some instances may be adopted as a rule, depending on the context in which the legal drafter or policy maker wishes to apply them.
2. Those using the legal elements set out in the Guide should conduct adequate background research to clearly identify the principal legal, ecological, cultural, institutional and socio-economic factors that need to be considered in the approach to new or reformed legislation for sustainable use of soil.
3. The elements may require modification in order to address the actual domestic circumstances in a particular jurisdiction. Where appropriate, new or additional elements may need to be drafted to meet the circumstances encountered.
4. The Guide may be applied at different levels for the sustainable use of soil, including the national level, a bio-geographical region, a river basin, an eco-region, and the local level.
5. The suggested elements are designed to assist legislators to formulate an independent piece of "sustainable soil" legislation, or alternatively, to be integrated with other environmental law elements to form a broader, more encompassing piece of environmental legislation which includes provisions for the sustainable use of soil.

Proposal for the development of legislative guidelines for sustainable soils in the Balkan Region

In 2007, Dr Ian Hannam, co-chair of the IUCN Specialist Group on Sustainable Soils and Desertification proposed that a set of regional guidelines be prepared by interested parties in the Balkan region (12). Such a set of guidelines was intended to be used as a resource document for the Balkan States in order to promote the desired standard of performance in sustainable soil management in the region. It is now tentatively suggested that this proposal be followed up by a process of negotiation between specialists within these countries, with a view to developing such a set of guidelines. As a beginning, the guidelines could draw on the IUCN guide, *Drafting Legislation for Sustainable Soils* referred to above. They could set out the essential legal and institutional elements would that form the basic and fundamental components of the legal and institutional systems in the specific situation of the Balkan countries.

The guidelines could perform the following functions:

- To evaluate current legislation against a matrix of essential legislative and institutional elements and ecological principles outlined in the Guide. In other words, they would be the basis for assessing the capacity of an existing instrument to meet prescribed standards of performance for the sustainable use of soil. Depending on the assessed capacity of the law to achieve these standards, additional elements may be formulated, which could be incorporated into existing or new legislation;
- To act as a basis for the reform of existing national legislation for the protection and management of soil;
- To establish the direction for the drafting of new specialist national legislation for the sustainable use of soil;
- To assist in the process of incorporating legislative elements for soil within an existing environmental law, either in addition to the present law or as an aspect of an integrated ecological approach;
- To assist in the establishment or reform of relevant departments of government to manage and protect the ecological integrity of soil;

Conclusion

It will be obvious from the above that both at the international and national level, a good deal more work is required to ensure that satisfactory legal frameworks are developed for the conservation and sustainable use of soil. Ongoing work by the IUCN Specialist Group on Sustainable Soils and Desertification, collaborating closely with the soil science community, will be of vital importance in encouraging the drafting of national legislation, the conduct of capacity building programs for governmental officers and the strengthening of institutional frameworks for the implementation of the legislation. At a regional level, it might be wise for government officials and concerned academics to work together in developing capacity-building programs. At the international level, the promotion of an international instrument on conservation and sustainable soils requires the sponsorship by one or more countries in order to promote it is true international and regional levels.

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