International and National Legal and Institutional Frameworks for the Sustainable Use of Soil

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Abstract: In the period since the UNCED in 1992, more responsibilities have been placed on States to protect the local, regional and global environment, especially problems shared by the whole community such as soil degradation. Beginning in early 1999, a successful partnership developed between the environmental law and soil science disciplines to seek a better outcome for the global welfare of soil, including an improvement in the environmental law and policy for the sustainable use of soil. In October 2000 the World Congress of the IUCN (The World Conservation Union) passed the Resolution for the IUCN Environmental Law Program to develop legal guidelines, explanatory material and investigate a global legal instrument for the sustainable use of soils, and to pay particular attention to the ecological needs of soil and their ecological functions for the conservation of biodiversity and the maintenance of human life. Further, the February 2001 Decision of the Governing Council of UNEP (21/23, 2001) seeks the development and implementation of laws and policies for the sustainable use of soil through its Montevideo Program III. This paper summarises the features of current national soil legislation, and the international environmental law regime for soil, and outlines aspects of the approach being taken by the IUCN Commission on Environmental Law to the development of legal and institutional frameworks for sustainable soil. The paper brings a greater focus on the need for more effective implementation of environmental law and policy at the global, regional and national level for soil conservation, and to achieve and maintain sustainable land use.

1 Background and recent important decisions

Since the early 1970's there has been an increased global consciousness to protect the environment with a steady growth in international law and policy focusing on the resolution of global environmental problems. This has brought a greater attention on the need for more effective implementation of the international environmental law and policy for the sustainable use of soil (Hannam and Boer, 2001 and 2002). The seriousness of soil degradation problems has motivated the environmental lawyers and soil scientists into seeking better international and national legal instruments to manage soil (Bridges *et al*., 2001). The challenge has been taken up by the IUCN (The World Conservation Union), where, at its World Congress in Amman, Jordan, in October 2000, it passed the Resolution - Requesting the Environmental Law Program, in its development of legal guidelines, explanatory material and investigation into a global legal instrument for the sustainable use of soils, to pay particular attention to the ecological needs of soil and their ecological functions for the conservation of biodiversity and the maintenance of human life. The Commission of Environmental Law of the IUCN established a specialist working group to implement the Resolution and a preliminary report has been prepared which outlines various ways that the IUCN may proceed in the development of national and international legal and institutional frameworks for sustainable soil (Hannam and Boer 2002). The IUCN decision is enhanced by the Montevideo Program III (the Program for the Development and Periodic Review of Environmental Law for the First Decade of the Twenty-First Century), adopted by the Governing Council of the United

Nations Environment Program (UNEP) in February 2001. The program advocates the development of international agreements, international guidelines, principles and standards, and for the development of the capacity to formulate and implement these instruments and guidelines. This program includes a specific Objective for Soils (Objective 12), that promotes the development and implementation of laws and policies for enhancing the conservation, sustainable use and rehabilitation of soils. Its specific actions provide for the review of domestic land use laws and it promotes the integration of soil conservation measures into relevant domestic laws, taking into account relevant international instruments such as the United Nations Convention to Combat Desertification.

2 National legal regimes

Legal and institutional frameworks in most countries treat soil degradation in a fragmented way (Khan, 1993; Hannam and Boer, 2001). The current degraded state of the world's soil resources clearly justifies a review of the effectiveness of the existing international and national legal framework as it relates to the control and management of soil degradation. In the past, the main type of legislation aimed at the control of soil degradation has been the "soil conservation law" where many of the legal mechanisms under this legislation use the term "land degradation" to refer to problems arising from mismanagement of soil and land (Grossman and Brussaard 1992; Khan 1993). The legislation has a land utilisation focus, which is no longer adequate to effectively protect and manage the world's soil. Soil conservation legislation was introduced in the early 1900's primarily to control the effects of soil erosion by wind and water and has been prominent in colonial Africa, Australia, New Zealand, the United States and some European and Asian nations. By the early 1970's it was stated that "the general object of soil conservation legislation is to induce those whose activities affect the soil to act in a manner that preserves its desired qualities to a greater extent than their normal manner of operation would do" (Christy, 1972; UNEP/FAO, 1999). Towards the end of the last century, and in pursuance of a sustainable land management goal, it was clearly acknowledged that a wide range of land management programs, policies, and educational initiatives, in conjunction with national and local laws is necessary to achieve the sustainability goal (El-Swaify *et al*., 1999).

The national soil legislation experiences indicate the type of elements necessary for a successful international regulatory framework to tackle the problem of soil degradation (Hannam, 2001). An examination of existing national soil legislation indicates that a broad range of legal mechanisms have been used across the world over many decades to protect and manage land, including, acts, decrees, resolutions, ordinances, codes, regulations, circulars, decisions, orders and by-laws. The actual number of individual laws far exceed the number of countries which have some form of law as many countries have multiple mechanisms within their soil legal framework (ie, a principal act accompanied by a code, a regulation, ordinance etc). A few countries, like the UK, have up to 15 soil legislative mechanisms covering a range of items including: soil planning, resource access, organic farming practices, nitrate sensitive areas, and soil restoration. Some countries with multiple states or provinces (eg, United States of America, Australia, China) have a system of soil legislation which includes a form of federal soil law with each state or province having its own individual soil legislation and other supportive legal mechanisms (Hannam and Boer, 2002).

3 Legal frameworks

Law-makers face a challenge in developing effective legislation for soil given the volume of soil science knowledge, the inherent risks or uncertainty that characterise many actions involving the use of land resources and the economic and social importance attached to soil and land. Soil has a fundamental role in the terrestrial ecosystem, as a three dimensional body performing a wide range of ecological functions. Alteration of soil processes leads to changes in the function of ecosystems, and many environmental problems which become apparent in other media, actually originate within the soil (Sheals, 1969; Pimental and Sparks, 2000). It is essential that the *principal functions of soil*, which include its ecological functions, cultural functions, and land use functions, influence the structure of national and international legal frameworks for soil. Well-designed legal frameworks are essential to guide this process,

and to prevent or minimise the risk of soil degradation and to provide a basis for the sustainable use of soil. Legislation may be used to prohibit or restrict land use activities as well as to provide economic and practical incentives. It also has an important role in the establishment of institutional mechanisms, to develop practical land management measures, ensure effective compliance, monitor the performance of land management programs, and enable the necessary changes to the law so that it remains effective. Establishing efficient institutions, both internationally and nationally, is one of the most important roles of legislation, though is often underestimated.

4 Multilateral environmental treaties and agreements

The most logical way to approach an analysis of the international legislation for soil degradation management is to review the relevant instruments of the two broad categories of environmental law instruments. Instruments within the two categories have various characteristics of timeliness, political acceptability, complexity of the ecological problems to be dealt with, the technical ability of developing nations to implement legal instruments, and the finances and resources required for effective implementation (United Nations, 1999).

5 Non-binding instruments

Non-binding instruments, sometimes referred to as “soft law”, are resolutions adopted by inter-governmental bodies, and can be in the form of recommendations, guidelines, programs of action, and declarations of principles. States can accept them as a guide for future action, despite not being mandatory. Elements of “soft law” may be included at a later stage in binding instruments, and thus become “hard law”. This reflects the evolutionary character of international law on a particular subject. The main feature of non-binding instruments over binding instruments (below) is that they can be achieved within a shorter timeframe because they are not mandatory and do not require ratification. A non-binding instrument can also be in the format of international guidelines and statements of “best practice”, perhaps in the form of a code of conduct. Examples of non-binding instruments relevant to soil include (Hannam and Boer, 2002):

- The Stockholm Declaration on the Human Environment (UN, 1972);
- The European Soil Charter (Council of Europe, 1972);
- The World Conservation Strategy (IUCN, 1980);
- The World Charter for Nature (UNEP, 1982a);
- The World Soil Charter (FAO, 1982) and the World Soils Policy (UNEP, 1982b);
- The Rio Declaration on Environment and Development (United Nations, 1992a) and Agenda 21 (United Nations, 1992b).

6 Binding instruments

The generic term “treaty” is regularly used to embrace instruments that are binding at international law, concluded between international entities, regardless of their formal designation. A treaty, in the generic sense, is also synonymous with the terms “convention”, “agreement” and “protocol”, and is a binding instrument, where the contracting parties intended to create legal rights and duties, concluded by States or international organisations with treaty-making power, and governed by international law. A treaty is normally open for participation by the international community as a whole, or by a large number of states. A treaty can take the form of an instrument of a technical or administrative character, signed by the representatives of government departments, but not subject to ratification. Another structural form of treaty, referred to as a “protocol”, is a binding instrument that is subsidiary to an existing treaty, and drawn up by the same parties. These can deal with ancillary matters, such as the interpretation of particular clauses of the existing treaty, formal clauses not inserted in the treaty, or the regulation of technical matters. They can establish additional rights and obligations to an existing treaty and can enable certain parties of the existing treaty to establish among themselves a framework of obligations that reach

further than the general treaty and to which not all parties of the general treaty consent (United Nations, 1999). Examples of international binding instruments relevant to soils include:

- The Convention to Combat Desertification (UNEP, 1994);
- The Convention on Biological Diversity (UNEP, 1995a);
- The Framework Convention on Climate Change (UNEP, 1995b);
- The Kyoto Protocol (Climate Change Secretariat, 1997).

7 Relevant regional agreements

A number of regional binding instruments include provisions for the sustainable use of soil. These cover the South Pacific region, Central and Northern Africa, the Alpine area of Europe, Southeast Asia, and the Mediterranean, for example:

- The African Convention for the Conservation of Nature and Natural Resources, 1969;
- The ASEAN Agreement on the Conservation of Nature and Natural Resources, 1985;
- The Convention Concerning the Protection of the Alps, 1991; and
- The Protocol for the Implementation of the Alpine Convention of 1991 in the area of Soil Protection, 1998.

8 Other international initiatives

In addition to the existing formal environmental law instruments, a number of initiatives have been undertaken as attempts to introduce new environmental instruments with either broad ranging or specific provisions important for the conservation of soil, including:

- The Forest Principles, 1992 (Tarasofsky, 1995);
- The Draft International Covenant on Environment and Development (IUCN, 2000); and
- The Tutzing Proposal for a Soil Convention, 1997 (The Tutzing Project "Time Ecology", 1998).

9 Overview of the existing regime

It is regarded that the current international environmental law regime is inadequate to cater for the principal international and national environmental law needs to manage soil degradation. The existing global binding instruments are insufficient as a framework and fall well short in including a sufficient range of legal elements that are needed to protect and manage land in a sustainable way. Although some current international non-binding instruments include general concepts relating to the control and prevention of soil degradation that are still relevant in the 21st century, they do not recognise soil as an important element of the terrestrial ecology. Finally, the existing international environmental law regime does not provide specific guidelines for States to approach the reform or development of national soil legislation. These inadequacies are particularly obvious when the current national and international situation is compared with the desired international position for soil legislation under the objectives of the IUCN *Soils Resolution* and the UNEP Montevideo Program III Objective for Soils.

The soil scientific factors that need to be grappled with by international and national environmental law are numerous. The main one's include, the overall amount and the degree and severity of soil degradation, and the damage to the land resource by soil erosion, acidification, compaction, salinisation, and loss of nutrients and organic matter. There is also the loss of agricultural soils to non-agricultural uses, affect on atmospheric quality of greenhouse gas emissions from agricultural uses of soil, and the loss of soil biodiversity. Accelerated soil degradation is mostly human-induced and it occurs in all eco-regions of the world, irrespective of the social, economic, and political conditions and is a major threat to food security (Bridges *et al.*, 2001).

10 A process

A number of complex steps are involved to achieve a desired goal of sustainable use of soil, starting with the opportunity for input by all interest groups, including international environmental organisations,

interested States, soil scientific institutions, private sector interests, and non-government organisations. Such a process is founded on building an adequate understanding of current soil degradation processes and issues (in particular severity and distribution) to enable a clear vision of what the benefits of a new international sustainable soil legal framework might be (Hannam and Boer, 2002). Some of the elements considered as essential for a successful national soil legal and institutional framework include:

- Goals and objectives for an ecologically sustainable approach to soil management;
- An obligation on government, land managers and the community to cooperate on soil conservation;
- An obligation to develop soil policy, guidelines and soil ecological standards;
- Promoting soil conservation through a mix of regulatory and non-regulatory means;
- Enabling soil to be conserved and managed on all classes of land; and
- Promoting an integrated approach to the management of natural resources as a whole.

Some essential elements, which should appear within an international soil legal and institutional framework, include:

- The fundamental biological principles for sustainable soil management;
- A consolidation of the relevant elements of existing international soil policies;
- Guidelines for the legal, biological and policy requirements for the ecologically sustainable management of soil;
- Creating the link between the soil instrument and other international environmental instruments;
- Setting the guidelines for States to legislate or reform legislation on soil;
- Setting out the guidelines for soil environmental education, creating public awareness and public participation programs.

11 Basic international societal obligations to soil

In considering which type of framework may be appropriate to re-evaluate the legal mechanisms to control and manage soil degradation it is essential to view the elements that may be applied to achieve the sustainable use of soil. The principal underlying ethic of an international framework is recognising the basic rights of the natural environment and of humans to a healthy environment, and the obligations on respective parties to observe these natural rights. The general expectation is that the world community as a whole, and respective States, will seek to protect and conserve soil resources for the benefit of present and future generations. There will be circumstances where a State, exercising its rights and obligations, will require access to judicial and administrative proceedings, including redress and remedy. A State may seek to take legal action against another for the effects of soil degradation, arising from the trans boundary effects of unsustainable soil use (Hannam and Boer, 2002).

12 Conclusions

This paper concludes that both the national and international legal regimes for soil can be substantially improved. Over the past five years, or so, there has been an increasing realisation within the soil science community, and related groups, that a new, improved, international environmental law instrument is a critical component of the strategic plan for sustainable land management into the 21st century. Despite the complexities of the legal and physical aspects of soil, water and vegetation, the Preliminary Report of the IUCN Commission on Environmental Law indicates that there is a good range of options available within the scope of existing national environmental law, including within the binding and non-binding environmental law instruments, to develop a plan to improve the national and international legal position (Hannam and Boer, 2002). The path selected by the community to achieve the environmental law necessary to more effectively manage soil should be cognisant of the following things:

- An awareness of the poor recognition of soil in the current international environmental law, and that national soil legislation is generally inadequate to manage the type and severity of soil degradation problems currently experienced around the world;
- The need to satisfy the current high level of recognition amongst the relevant disciplines of the benefits of developing an international regime which can raise the awareness of the serious

situation of soil degradation, and the need to develop suitable legal tools for individual nations to improve the capability of domestic law to protect and manage soil sustainably;

- A realisation that the world community must take action sooner rather than later to more adequately cater for the ecological needs of soil in the international and national environmental law regimes, as an integral part of the overall framework of environmental law and policy for environmental management;
- A realisation that a number of existing multinational agreements which have specific objectives and responsibilities to improve the condition of the terrestrial environment, the soil in particular) are not being implemented to their potential;
- Recognition of the existing available options to develop an international soil instrument, including: (1) binding stand-alone convention (treaty), (2) protocol to existing convention, (3) non-binding instrument, (4) updating and expanding existing soil charter; and declaration of principles.

It is essential that the plan to manage soils into the 21st century include a sound legal framework at international and national levels. The public relations sector must continue to promote soil as an essential element of the environmental debate and continue to encourage active dialogue between the disciplines to promote sustainable use of soils.

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