



Designing a new science-policy communication mechanism for the UN Convention to Combat Desertification



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ABSTRACT

The United Nations Convention to Combat Desertification (UNCCD) has lacked an efficient mechanism to access scientific knowledge since entering into force in 1996. In 2011 it decided to convene an Ad Hoc Working Group on Scientific Advice (AGSA) and gave it a unique challenge: to design a new mechanism for science-policy communication based on the best available scientific evidence. This paper outlines the innovative 'modular mechanism' which the AGSA proposed to the UNCCD in September 2013, and how it was designed. Framed by the boundary organization model, and an understanding of the emergence of a new multi-scalar and polycentric style of governing, the modular mechanism consists of three modules: a Science-Policy Interface (SPI); an international self-governing and self-organizing Independent Non-Governmental Group of Scientists; and Regional Science and Technology Hubs in each UNCCD region. Now that the UNCCD has established the SPI, it is up to the worldwide scientific community to take the lead in establishing the other two modules. Science-policy communication in other UN environmental conventions could benefit from three generic principles corresponding to the innovations in the three modules—joint management of science-policy interfaces by policy makers and scientists; the production of synthetic assessments of scientific knowledge by autonomous and accountable groups of scientists; and multi-scalar and multi-directional synthesis and reporting of knowledge.

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1. Introduction

Improving the communication of scientific knowledge to United Nations environmental conventions is vital if global environmental change is to be addressed successfully. In some areas, knowledge flows are well established. For example, the

Intergovernmental Panel on Climate Change (IPCC) has provided scientific advice since before the United Nations Framework Convention on Climate Change was agreed, though there are now concerns about its fitness for purpose (Hulme, 2010; Wible et al., 2014). However, ever since the United Nations Convention to Combat Desertification (UNCCD) came into force in 1996, it has lacked an efficient mechanism through which it can access state-of-the-art scientific knowledge on desertification, land degradation and drought. In 2011, responding to growing critiques

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from scientists, governments and the UN itself (Bauer and Stringer, 2009; Grainger, 2009; Ortiz and Tang, 2005), the Conference of the Parties of the UNCCD decided to convene an international group of twelve scientists and gave them a unique challenge: to design a new mechanism for science-policy communication based on the best available scientific evidence (UNCCD, 2012a). This article outlines the innovative ‘modular mechanism’ which this group proposed to the Conference of the Parties in September 2013, and how the mechanism was designed, by building on insights from the boundary organization model of science-policy communication and the new ‘governance’ literature.

2. Background

The UNCCD was agreed in 1994 as the third of the ‘Rio Conventions’ that emerged from the UN Conference on Environment and Development, held in Brazil in 1992. It defines desertification as: “land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities” (UN, 1994). The convention also has a major role to play in implementing the commitment made at the Rio + 20 Conference in 2012 to achieve a “land degradation neutral world in the context of sustainable development” (UN, 2012). This accord has been incorporated within the new Sustainable Development Goals by a UN Summit to Adopt the Post-2015 Development Agenda (UN, 2015).

To operate effectively, the UNCCD requires access to evidence-based scientific knowledge which is formatted and communicated in a policy-relevant way to meet decision makers’ needs. The text of the Convention states that its Conference of the Parties should receive scientific advice from the Committee on Science and Technology (CST) (UN, 1994). However, as this committee is also required by the Convention to comprise government representatives, it depends heavily on external inputs of knowledge from scientists. The UNCCD has used various mechanisms to supply these inputs, including ad hoc panels of scientists; a Group of Experts which served for six years (2001–2007); and, most recently, a series of biennial UNCCD Scientific Conferences, which discuss scientific knowledge on a theme chosen by the CST. Yet all of these mechanisms have had limited immediate effectiveness, owing to political constraints, such as giving priority to regional representation over scientific competence when choosing experts, as well as funding problems and communication difficulties within the UNCCD (Grainger, 2009).

The Conference of the Parties responded to this situation in 2009 by asking the CST to undertake another evaluation of how to improve the convention’s access to scientific knowledge. The CST consulted widely on four options: (a) use existing scientific networks; (b) establish a new scientific network; (c) use existing intergovernmental scientific advisory mechanisms, such as the IPCC or the recently established Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (Perrings et al., 2011); or (d) establish a new intergovernmental scientific panel on land and soil (Thomas et al., 2012). When the CST failed to reach agreement on a preferred option, the Conference of the Parties decided in 2011 to establish a twelve member Ad Hoc Working Group on Scientific Advice (AGSA) to develop a fresh approach (UNCCD, 2012a). The present authors include all the members of this group.

3. Methods

The AGSA was asked in its Terms of Reference to acknowledge the merits of the four ‘macro’ options considered by the CST, but to go beyond them by taking a ‘micro’ approach, which involved

Table 1

Eleven generic components of science-policy communication mechanisms, as analysed by the AGSA.

1.	Role and objectives
2.	Implementation mechanisms and functional modalities
3.	Legal and financial implications
4.	Mandate
5.	Legal status
5.	Membership
7.	Governing modalities and science-policy interface
8.	UNCCD core and essential disciplines and thematic areas
9.	Exploiting synergies with existing panels, platforms and networks
10.	Expected outputs and deliverables, and the reporting process
11.	Non-academic knowledge

analysing 11 generic components that should be present in any good science-policy communication mechanism (Table 1). These components were identified by the CST Bureau, comprising the five members of the CST who follow up its work between formal sessions (UNCCD, 2012b). To facilitate reporting of the AGSA’s findings in this paper, the components are divided here into five main groups:

1. Components 1 (role and objectives), 2 (implementation mechanisms and functional modalities), and 3 (legal and financial implications), which all refer to an entire mechanism of science-policy communication.

2. Components 4 (mandate), 5 (legal status) and 6 (membership), which refer to each of the constituent bodies of the mechanism.

3. Component 7 covers the science-policy interface where scientific knowledge is shared with policy makers, and how the interface and the mechanism as a whole are governed.

4. Component 8 identifies the disciplines to which advisors should belong if comprehensive inputs of scientific knowledge are to be provided by the scientific bodies in the mechanism, while component 9 identifies potential contributions by external science-advisory bodies.

5. Component 10 describes the outputs reported to the CST and to stakeholders within and outside the intergovernmental arena, who may also contribute their non-academic knowledge (component 11).

The AGSA evaluated alternative options for each component and then identified the option that was likely to be the most effective. The preferred options were then pieced together, much like a jigsaw, to construct the overall science-policy communication mechanism that was recommended to the UNCCD.

To frame the analysis of the eleven components, and of the factors that have limited the UNCCD’s access to state-of-the-art scientific knowledge, two existing conceptual frameworks were used. First, the *boundary organization model*, which has been widely used for analysing science-policy communication in recent decades (e.g. Hoppe and Wesselink, 2014; Lee et al., 2014). According to this model, communication between the science and policy domains is most effective when it flows in both directions. Negotiations within small groups of scientists and policy makers, called *boundary organizations*, can greatly facilitate the translation of scientific knowledge into lay language, and ideal two-way communication is achieved when the scientists and policy makers involved in these negotiations are each responsible to their parent domains (Fig. 1) (Cash et al., 2003). Because the UNCCD’s scientific advisers have previously only been responsible to the UNCCD and

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