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Item 4 of the provisional agenda

**Consideration of progress made in the organization of international, interdisciplinary scientific advice in the Convention process**

### **Organization of international, interdisciplinary scientific advice to support the Convention process. Report by the ad hoc working group to further discuss the options for the provision of scientific advice focusing on desertification/land degradation and drought issues**

**Note by the secretariat**

#### *Summary*

By its decision 20/COP.10, the Conference of the Parties at its tenth session decided to set up an ad hoc working group, taking into consideration regional balance, to further discuss the options for the provision of scientific advice focusing on desertification/land degradation and drought issues, taking into account the regional approach of the United Nations Convention to Combat Desertification.

While document ICCD/COP(11)/CST/3 focuses on conclusions and recommendations of the Ad Hoc Working Group to Further Discuss the Options for the Provision of Scientific Advice Focusing on Desertification/Land Degradation and Drought Issues (AGSA), accompanied by the background, mandate, activities and main outcomes of the work of the AGSA, as well as a comprehensive analysis of eleven components of an integrated scenario, this document contains the final report of the AGSA, including all the detailed information as requested in the terms of reference of the AGSA.

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## Executive summary, including recommendations

1. The Ad Hoc Working Group to Further Discuss the Options for the Provision of Scientific Advice Focusing on Desertification/Land Degradation and Drought Issues (AGSA) was established in July 2012 to make proposals for improving scientific advice to the United Nations Convention to Combat Desertification (UNCCD), in accordance with decision 20/COP.10 by the Conference of the Parties (COP).

2. The COP took this decision because the Committee on Science and Technology at its tenth session (CST 10) could not reach a consensus on one of four options for science-advisory bodies it had before it. These options included: (a) using existing scientific networks; or (b) establishing a new scientific network focusing on specific topics; or (c) using existing intergovernmental scientific advisory mechanisms; or (d) establishing a new intergovernmental scientific panel on land and soil.

3. Under the terms of reference drawn up by the Bureau of the Committee on Science and Technology (CST) for the AGSA, the latter was asked to propose "the most suitable components that would shape an integrated scenario for providing scientific advice to UNCCD focusing on desertification/land degradation and drought issues, taking into account the regional approach of the UNCCD". The Bureau of the CST listed eleven "components" of this "integrated scenario" for analysis, namely: (a) role, objectives and mandate; (b) UNCCD core and non-core disciplines/thematic areas; (c) status; (d) membership; (e) expected outputs, activities and deliverables; (f) non-academic knowledge; (g) synergies with existing panels/networks, including those established under other United Nations Conventions; (h) financial, legal and other implications; (i) implementation mechanism; (j) functional modalities; and (k) governance modalities, science-policy interface and reporting process. Whereas the four options considered at CST 10 referred to different types of science-advisory bodies, these eleven components cover all the characteristics of a science-advisory body and the processes that need to be put into place to communicate scientific knowledge and policy-relevant scientific advice to the UNCCD, to the regions, and to all relevant stakeholders.

4. Having considered a number of alternative arrangements for each component and agreed on its preferences, the AGSA has decided that the integrated scenario comprising the optimum arrangements for all components can be divided for operational purposes into a modular mechanism comprising three core modules:

(a) A Science-Policy Interface (SPI), where representatives of the policy-making and science communities, and other stakeholders, would discuss, synthesize and communicate to the UNCCD scientific information and knowledge and policy-relevant advice on desertification/land degradation and drought (DLDD), and identify the needs of the UNCCD for such inputs. The compact design proposed by the AGSA should ensure faster communication than occurs in the science-policy interfaces of other United Nations bodies;

(b) An Independent Non-Governmental Group of Scientists (IGS), whose representatives would meet with policy-making representatives in the SPI. Scientists would be members of the IGS based on their individual credentials, and belong to all disciplines essential for providing comprehensive knowledge on DLDD. The IGS would prepare peer-reviewed reports, which would be presented to the SPI to be transmitted by the CST to the COP. The advice provided by the IGS would be inclusive of all studies on DLDD, and external peer-reviewing of the group's reports would ensure that this advice is independent and authoritative;

(c) Regional Science and Technology Hubs (RSTHs), which would bring together existing scientific networks in each UNCCD region to collate and synthesize regional knowledge on DLDD, and communicate this to governments and other regional bodies, as well as to the SPI and IGS. Scientists participating in these regional hubs could also be IGS members in their individual capacities. The hubs would also catalyze the growth of DLDD research in their respective regions, improve coordination and facilitate contributions, requests and participation through 'bottom-up' mechanisms. The hubs would give the modular mechanism a broad base across the regions, and keep it grounded in real issues and the concerns of member countries through the constant feedback which they provide.

5. This modular mechanism incorporates aspects of each of the four options discussed at CST 10 but is likely to be more effective than any of them individually. It could also become operational within 2–5 years (pending approval by the COP), and therefore support the implementation of the 10-year strategic plan and framework to enhance the implementation of the Convention (2008–2018) (The Strategy) by 2018.

6. The modules could be implemented in a stepwise manner as funding permits, for example, by: (a) building on the UNCCD Scientific Conferences to form the SPI; (b) using the scientific networks established to advise these conferences to form the core of the IGS, which many other scientists from around the world could then join; (c) establishing the RSTHs at a pace that meets the needs of each region; and (d) building links to existing science-advisory bodies, such as the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), which would also help to increase synergies between the UNCCD, the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD).

7. The AGSA invites the CST to bring to the COP the following principal recommendations of the AGSA for improving scientific advice to the UNCCD:

*Recommendation 1*

Scientific advice should be provided through an integrated scenario to collate, monitor, analyse and synthesize scientific information and knowledge on DLDD and seamlessly communicate this and policy-relevant advice to the UNCCD and to all stakeholders considered relevant for the implementation of the Convention.

*Recommendation 2*

The integrated scenario should have a modular mechanism comprising three core modules: a "Science-Policy Interface"; an "Independent Non-Governmental Group of Scientists"; and "Regional Science and Technology Hubs" (see figure 1).

*Recommendation 3*

A "Science-Policy Interface" should be established to facilitate a two-way science-policy dialogue and ensure delivery of policy-relevant information, knowledge and advice on DLDD, taking into account the procedures of the UNCCD Scientific Conferences.

*Recommendation 4*

An "Independent Non-Governmental Group of Scientists" should be created, with the support of the COP working through the CST, and in cooperation with the wider scientific community, to be an authoritative source for analysing, synthesizing and communicating unbiased scientific information, knowledge and advice on DLDD.

*Recommendation 5*

The regions should be encouraged to develop “Regional Science and Technology Hubs” designed as appropriate to individual regional circumstances, which can collate, analyse, synthesize and communicate regional information and knowledge on DLDD issues to governments in the region, regional stakeholders, and the “Independent Non-Governmental Group of Scientists” and the “Science-Policy Interface”, and participate in the Science-Policy Interface. This should ensure that regional scientific and technological expertise is more fully harnessed to increase its contribution to providing region-specific policy-relevant scientific advice, taking into account non-academic knowledge.

*Recommendation 6*

The three modules of the modular mechanism should be established in a stepwise manner, taking advantage of existing scientific networks, the UNCCD Scientific Conferences and other UNCCD mechanisms (such as Science and Technology Correspondents and the Roster of Experts).

*Recommendation 7*

Appropriate technical and financial support should also be provided in a stepwise manner to realize the modular design of the integrated scenario, and also taking into account the various partnerships within and between the different modules.

## I. Background and mandate

8. By its decision 3/COP.8, the COP of the UNCCD adopted The Strategy. The third operational objective of this plan is for the Convention “to become a global authority on scientific and technical knowledge pertaining to desertification/land degradation and mitigation of the effects of drought”.<sup>1</sup>

9. The CST was given primary responsibility for fulfilling this objective, and was asked by the COP, by its decision 18/COP.9, “to conduct an assessment at its next two sessions of how to organize international, interdisciplinary scientific advice, taking into account the need to ensure transparency and geographical balance, and to consider options for determining agreed channels for consideration of the advice in the Convention process”, and to submit recommendations to the tenth session of the COP.<sup>2</sup>

10. The Bureau of the CST, with the support of the UNCCD secretariat, conducted an electronic assessment (e-survey) to determine how to organize international interdisciplinary scientific advice. The e-survey included four alternative options for organizing international interdisciplinary scientific advice:<sup>3,4</sup>

- (a) Using existing scientific networks;
- (b) Establishing a new scientific network focusing on specific topics;
- (c) Using existing intergovernmental scientific advisory mechanisms; and
- (d) Establishing a new intergovernmental scientific panel on land and soil.

<sup>1</sup> See ICCD/COP(8)/16/Add.1, decision 3/COP.8.

<sup>2</sup> See ICCD/COP(9)/18/Add.1, decision 18/COP.9.

<sup>3</sup> ICCD/COP(10)/CST/MISC.1.

<sup>4</sup> ICCD/COP(11)/CST/INF.1.

11. The key findings of the e-survey were presented at CST 10. However since the CST could not reach a consensus on which option to recommend to the COP, the COP, by its decision 20/COP.10, decided “to set up an ad hoc working group, taking into consideration regional balance, to further discuss the options for the provision of scientific advice focusing on desertification/land degradation and drought issues, taking into account the regional approach of the UNCCD.<sup>5</sup> An Ad Hoc Working Group for Scientific Advice (AGSA), with 12 members (see annex I), was established by the Bureau of the CST in July 2012 under this mandate.

12. The AGSA's terms of reference, agreed by the Bureau of the CST at its meeting on 17–18 February 2012,<sup>6</sup> required it to propose "the most suitable components that would shape an integrated scenario for providing scientific advice to UNCCD focusing on desertification/land degradation and drought issues, taking into account the regional approach of the UNCCD". These eleven components, which the AGSA was asked to examine "among others and not in order of priority", and while "taking into account" the four earlier options, were:

- (a) Role, objectives and mandate;
- (b) UNCCD core and non-core disciplines/thematic areas;
- (c) Status;
- (d) Membership;
- (e) Expected output, activities and deliverables;
- (f) Non-academic knowledge;
- (g) Synergy with existing panel/networks, including those established under other United Nations Conventions;
- (h) Financial, legal and other implications;
- (i) Implementation mechanism;
- (j) Functional modalities;
- (k) Governance modalities, science-policy interface and reporting process.

13. Whereas the four e-survey options in paragraph 10 focus purely on a science-advisory body, the eleven components go further in specifying the key features of all bodies and processes for designing an integrated scenario for providing scientific advice.

## **II. Activities of the Ad Hoc Working Group to Further Discuss the Options for the Provision of Scientific Advice Focusing on Desertification/Land Degradation and Drought Issues**

14. The AGSA held its first meeting on 30 and 31 July 2012 in Bonn, Germany. It elected a Coordination Team, comprising a Chair, a Co-Chair, a Rapporteur and a Documents Coordinator, and assigned small teams of members to analyse each of the

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<sup>5</sup> See ICCD/COP(10)/31/Add.1, decision 20/COP.10.

<sup>6</sup> Report of the meeting of the Bureau of the Committee on Science and Technology, 17–18 February 2012, Bonn. Available at [www.unccd.int/Lists/SiteDocumentLibrary/CST/BMR\\_1718Feb2012.pdf](http://www.unccd.int/Lists/SiteDocumentLibrary/CST/BMR_1718Feb2012.pdf).

eleven components (annex I).<sup>7</sup> The work of the AGSA was from its first meeting onwards financially supported by Switzerland and the Republic of Korea, under the Changwon Initiative.

15. In its first six months of activity AGSA conducted a detailed analysis of the eleven components. This involved referring to a large number of empirical studies on science-policy communication in the UNCCD and on the work of existing science-advisory bodies, such as the IPCC and IPBES, as well as to recent scientific research on science-policy communication. In the remaining five months AGSA focused on how to operationalize the entire integrated scenario through a modular mechanism.

16. The AGSA undertook most of its work remotely, communicating frequently by email. Two further physical meetings were held at the UNCCD secretariat in Bonn on 10 and 11 December 2012, and 29 and 30 April 2013. In accordance with its terms of reference, progress reports were submitted by the Chair to the Bureau of the CST on 30 October 2012, 20 February 2013 and 11 April 2013, and to preparatory meetings of the UNCCD Regional Implementation Annexes (Africa, Asia, Latin America and Caribbean, and Central and Eastern Europe) on 13 April 2013. The AGSA's pre-final report was presented to the Bureau of the CST on 30 May 2013. It is expected that the AGSA's final recommendations will also be presented at the regional meetings prior to COP 11.

17. The AGSA's findings are presented in three parts: (a) this document, which summarizes the detailed analysis of each component on which the AGSA based its proposals; (b) a pre-session document, CCD/COP(11)/CST/3, which summarizes the Conclusions and Recommendations of the AGSA<sup>8</sup> and (c) studies on the eleven components, which will be made available in August 2013 for consultation on the UNCCD website, and describe in detail the analysis of each component by the corresponding team.

### **III. Comprehensive analysis of eleven components of an integrated scenario**

#### **A. Introduction**

18. The AGSA found that the eleven components identified by the Bureau of the CST were sufficient to provide the basic building blocks for designing an integrated scenario that can seamlessly communicate scientific information and knowledge to the CST and COP of the UNCCD, as well as to all relevant stakeholders. These components should fit together like a jigsaw in order to ensure effective communication between the scientific community and UNCCD. The integrated scenario will fill a needed role within a specific mandate, guided by a set of objectives. At the heart of the integrated scenario is the science-policy interface. Here a group of scientists meets with the CST, the Bureau of the CST and with the UNCCD secretariat within a set of governing modalities, to identify the needs of UNCCD for scientific information, knowledge and advice, and to review, assess and communicate outputs provided by the scientists in response to these needs. The group of scientists, whose membership covers all relevant disciplines and thematic areas, has a particular legal status and mandate. The outputs and deliverables of the group of scientists, which include syntheses of scientific information, knowledge and policy-relevant (but not policy-prescriptive) advice, and complemented by non-academic knowledge as appropriate,

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<sup>7</sup> Report of the first meeting of AGSA, 30–31 July 2012, Bonn. Available at <[www.unccd.int/Lists/SiteDocumentLibrary/science/Report on the first meeting of the AGSA.pdf](http://www.unccd.int/Lists/SiteDocumentLibrary/science/Report%20on%20the%20first%20meeting%20of%20the%20AGSA.pdf)>.

<sup>8</sup> ICCD/COP(11)CST/3.

will be reported to the CST, the COP, UNCCD regional bodies and other stakeholders considered relevant for the implementation of the Convention. The UNCCD and other United Nations conventions will benefit from synergies between the science-policy interface and group of scientists, on the one hand, and existing science-advisory bodies and scientific panels, platforms and networks, on the other. An implementation mechanism is required to establish the integrated scenario and its various functional modalities, and this has financial, legal and other implications which UNCCD must consider.

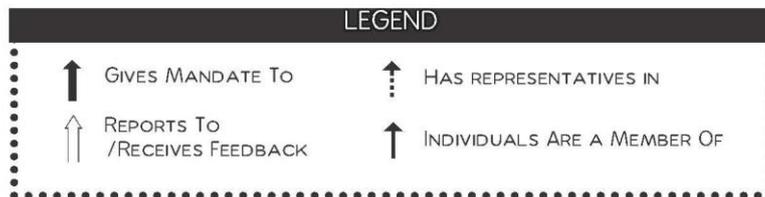
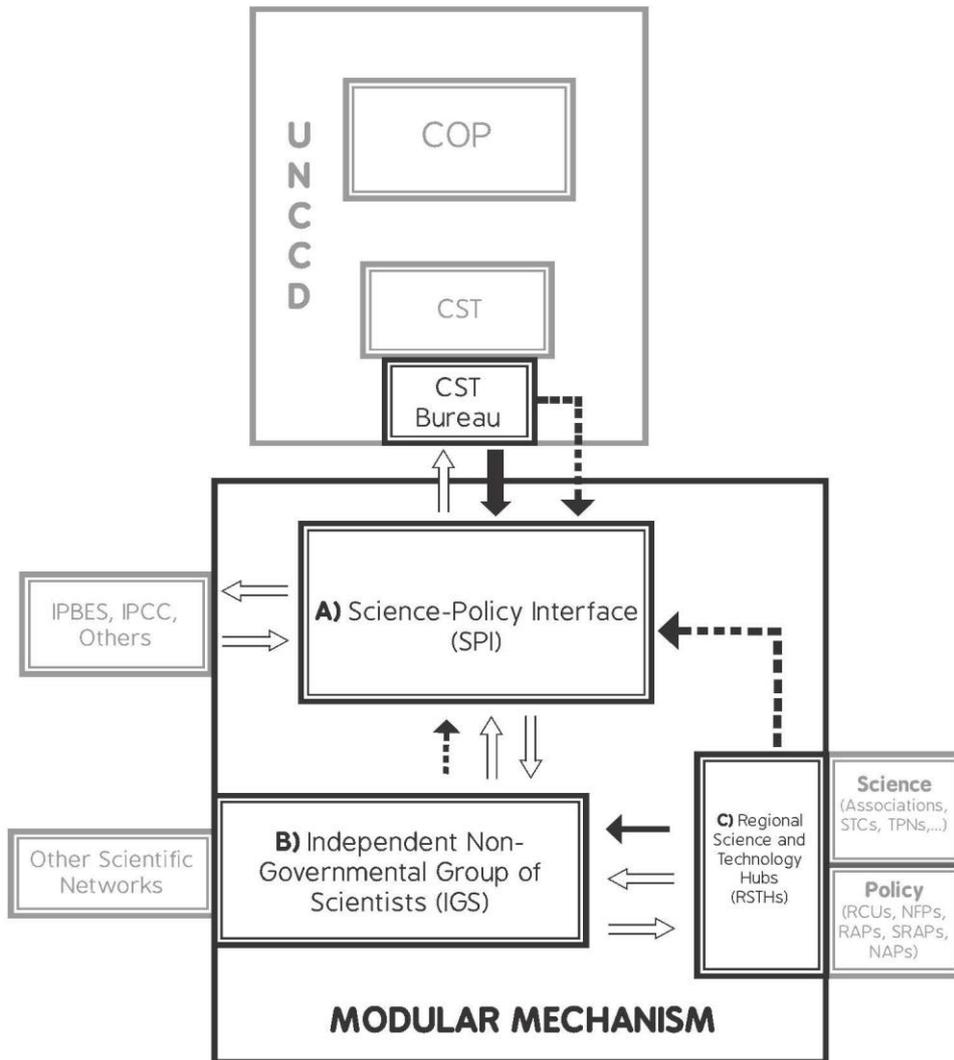
19. In this report options for each component of the integrated scenario are analysed individually, as the AGSA's terms of reference require. The sequence of components has been chosen for ease of reading. The AGSA was not allowed to give any name to the combination of the components, other than 'integrated scenario', so it could make a fresh start after the CST was unable to agree on which of the four 'e-survey options' to recommend to the COP. The AGSA decided to use the generic name "group of scientists" in its analysis. From the perspective of the components approach the four 'e-survey options' essentially refer to either the group of scientists participating in the science-policy interface (options a, b and d in paragraph 10), or to this group plus extra linkages of the kind found in the integrated scenario (option c). Options c and d were specifically given intergovernmental status, but options a and b were non-specific on status.

20. The AGSA decided that the integrated scenario comprising the optimum arrangements for all components can be divided for operational purposes into a modular mechanism comprising three core modules: (a) a Science-Policy Interface; (b) an International Non-Governmental Group of Scientists (IGS), whose peer-reviewed reports would be presented to the SPI; and (c) Regional Science and Technology Hubs (RSTHs) that link existing scientific networks and other expertise on DLDD in each region (see figure 1). Links between these modules are described under each component in this chapter. Definitions of all terms used here are from the Oxford English Dictionary,<sup>9</sup> unless otherwise stated.

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<sup>9</sup> OED, 1998. Concise Oxford Dictionary. 9th Edn. Clarendon Press, Oxford.

Figure 1  
**The role of the modular mechanism in the integrated scenario for providing scientific advice to the UNCCD**



## B. Role and objectives

21. A *role* is a specific function. The AGSA was established because one of the roles crucial to the success of the UNCCD, the provision of scientific knowledge, has long been deficient. This has been recognized by the COP,<sup>10</sup> the United Nations Joint Inspection Unit,<sup>11</sup> and by independent scientists.<sup>12,13</sup> The AGSA was asked to recommend how to correct this deficient role.

22. The AGSA proposes that the overall role of the integrated scenario should be to: (a) evaluate, synthesize and serve as a repository for available scientific information and knowledge and identify information and knowledge gaps on all aspects of DLDD; and (b) communicate this information, knowledge and policy-relevant (but not policy prescriptive) advice to the CST, as well as to all other stakeholders considered relevant for implementation of the Convention.

23. The AGSA proposes six objectives for this role: (a) to foster a science-policy dialogue so that the information needs of policymakers and other stakeholders considered relevant for the implementation of the Convention are clearly communicated to scientists; (b) to undertake comprehensive assessments of DLDD on the basis of existing information and knowledge, analyse policy-relevant future scenarios, and alert the Parties to new developments and issues; (c) to serve as a global think-tank and repository for scientific knowledge and information on DLDD, including scientifically verified non-academic knowledge; (d) to catalyse research initiatives and partnerships to generate and disseminate new knowledge at all scales; (e) to develop synergistic relationships with other international science-advisory bodies; and (f) to provide guidance on appropriate tools to assess and monitor DLDD at different scales.

## C. Governing modalities

24. *Governing* denotes how and by whom the activities of a group or society are steered. Traditionally, governments have steered societies, but scientific research has detected a shift in recent decades to a more inclusive style of governing, called “governance”. In this new style of governing, societies effectively steer themselves through multi-stakeholder interactions, and non-governmental groups have more prominent roles.<sup>14</sup> A science-policy interface is the set of communication flows between the scientific community and a particular policy process, and the institutions which govern these flows. According to other

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<sup>10</sup> United Nations Convention to Combat Desertification, 2001. Report of the Conference of the Parties on its 4th Session, Bonn, 11–22 December 2000. Addendum. Part 2: Action taken by the Conference of the Parties at its 4th Session, ICCD/COP(4)/11.Add.1, 25 January 2001. UN Convention to Combat Desertification, Bonn.

<sup>11</sup> Ortiz E.F. and Tang G., 2005. Review of the Management, Administration and Activities of the UN Convention to Combat Desertification (UNCCD). Joint Inspection Unit, United Nations, Geneva.

<sup>12</sup> Bauer S. and Stringer L.C., 2009. The role of science in the global governance of desertification. *Journal of Environment and Development* 18: 248–267.

<sup>13</sup> Grainger A., 2009. The role of science in implementing international environmental agreements: the case of desertification. *Land Degradation and Development* 20: 410–430.

<sup>14</sup> Rhodes R.A.W., 1996. The new governance: Governing without government. *Political Studies* 44: 652–667.

recent research, governing modalities, which refer to the details of governing, strongly influence the effectiveness of a science-policy interface.<sup>15</sup>

25. Communication of scientific advice on DLDD to the UNCCD (and other United Nations bodies) should consider all aspects of what is a socio-ecological phenomenon at national and international scales, while respecting the principle of national sovereignty. Past advice to the UNCCD has relied on geographically representative “experts” selected in consultation with Member States. However, scientific knowledge is continually evolving through interactions between different disciplines and thematic areas (see chapter III.F), each having their own merits and demerits. While geographical representation may confer political legitimacy on the knowledge communicated by a small group of scientists, this approach has limited the UNCCD's access to broader scientific knowledge until now. Furthermore, because the small groups of experts that were consulted were not accountable to the wider scientific community, e.g. through peer review, science-policy communication<sup>15</sup> was not necessarily effective. Since science is an international activity, a wider group of scientists should be used to guarantee a credible synthesis of scientific knowledge ensuring the geographical diversity of its members. The composition of the group of scientists is discussed in more detail in chapters III.F and III.G).

26. The AGSA considered three main options for governing the science-policy interface:

(a) An *intergovernmental option* in which the science-policy interface would continue to be governed solely by the UNCCD and its member states;

(b) A *partly intergovernmental option*, in which the science-policy interface, and the staff of the secretariat who function within it, would be mandated by the UNCCD, and the group of scientists would also be accountable to the scientific community through peer review of its reports;

(c) An *international non-governmental option*, in which the group of scientists is linked to existing specialist international, regional and national networks and organizations, but is fully self-governing and solely responsible for writing its reports and summaries for the Parties.

27. Based on its analysis of options for governing, the AGSA makes the following proposals for the governing modalities of its three modules:

(a) The SPI should be co-governed by the CST and the IGS, and operate with the administrative support of the UNCCD secretariat. Its mandate, functions, rules, composition, legal status and terms of reference would be decided by the COP, working through the CST. It could be co-chaired by a representative of the Parties and a representative of the IGS. The COP may wish to consider mandating the CST Bureau and the IGS to propose or elect their respective designated representatives on the SPI independently. The co-chairs could receive a two-year mandate, covering the intersessional period between two COPs;

(b) The IGS should be self-governing, with a small permanent administrative support unit and an executive board. It should be accredited to UNCCD but as a non-governmental organization. It would have its own statutes that comply with the laws of the country in which its support unit is hosted. It could start out small, by drawing on members of existing scientific networks and networks assembled to advise previous UNCCD

<sup>15</sup> Cash, D.W, Clark W., Alcock F., Dickson N., Eckley N., Guston D., Jager J. and R. Mitchell., 2003. Knowledge systems for sustainable development. Proceedings of the National Academy of Sciences 100: 8086–8091.

Scientific Conferences and the UNCCD's roster of experts. It could then gradually evolve, depending on the size and scope of the work it has been asked to carry out;

(c) The governing modalities of the RSTHs should be decided by the regions themselves. These hubs would coordinate interactions between regional scientific networks and the SPI, IGS and regional policy-oriented structures. This would enable the IGS to receive inputs from the regions and provide them with synthetic global knowledge and advice in return.

## D. Status

28. The *status* of any group in the integrated scenario refers to "its legal standing which determines its rights or duties". A group with intergovernmental status includes two or more governments; non-governmental status means that a group does "not belong to or is associated with a government"; and an international group involves the citizens of two or more Member States.

29. The AGSA considered three main options for the status of the group of scientists (options that are consistent with the governing modalities options in chapter III.C):

(a) An *intergovernmental option* in which the UNCCD would continue to be advised by groups of experts which it selects;

(b) A *partly intergovernmental option*, in which the secretariat of the UNCCD would collaborate with a group of scientists that is accountable to the scientific community through peer review, but its communications to the UNCCD would be negotiated within the CST;

(c) An *international non-governmental option*, in which the group of scientists is linked to existing specialist international, regional and national networks and organizations, but is fully self-governing and solely responsible for writing its reports.

30. Having considered these options, and after a close reading of the history of science-policy communication in the UNCCD, and taken into account the findings of analysis of other components, the AGSA concluded that the UNCCD's access to scientific knowledge has been greatly constrained by the intergovernmental rules under which its expert scientific advisors currently operate.

31. The AGSA therefore makes the following proposals for the legal status of the three modules:

(a) The status of the SPI should take into account the format of the UNCCD scientific conferences;

(b) The IGS should have international non-governmental status. Although fully self-governing, it would maintain links to UNCCD through the SPI and CST;

(c) The status of the RSTHs should be decided by the regions themselves according to specific regional needs.

## E. Mandates

32. A *mandate* is "a commission to act for another", e.g. to undertake a particular line of work. So it is important to specify both the nature of the commission and the body which endorses the commission.

33. The source of any mandate is closely linked to lines of accountability because the body making a commission will want to see that it is properly implemented. According to recent research, scientific knowledge is communicated most effectively to policymakers when there is two-way communication between them and the wider scientific community, so that each becomes fully aware of the other's needs and capabilities.<sup>16</sup> This can only happen, however, if the group of scientists responsible for communicating knowledge is also held accountable to the wider scientific community. Representatives of policymakers working with this group of scientists are likewise accountable to the policy process – in this case to their respective governments and then to the UNCCD process. If the group of scientists is only accountable to the policy process, its advice may not be comprehensive, fully representative of state-of-the-art science or politically neutral.

34. Until now, the UNCCD has itself provided the mandates to its science-policy interface and to the groups of scientists that have been asked to provide advice. However, the theoretical advances reviewed in the previous paragraph, and specific research into science-policy communication in the UNCCD,<sup>12,13</sup> both suggest that this, and the related lack of accountability of UNCCD “experts” to the scientific community, have limited the ability of the UNCCD to access scientific knowledge. So continuing with the status quo does not seem a viable option.

35. The AGSA therefore evaluated various options for the sources of mandates to the science-policy interface and to the group of scientists. Three options considered were:

(a) *An intergovernmental option*, in which both the science-policy interface and the group of scientists would continue to be solely mandated by, and accountable to, the UNCCD;

(b) *A partly intergovernmental option*, in which the science-policy interface, the CST, other representatives of the Parties and secretariat staff who function within it, would be mandated by the UNCCD, but the group of scientists would be autonomous and would thus also be accountable to the scientific community through peer review of its reports;

(c) *An international non-governmental option*, in which the group of scientists is linked to existing specialist international, regional and national networks and organizations, but is fully self-governing and would produce peer-reviewed reports on relevant DLDD topics.

36. Having considered these options and available evidence, the AGSA makes the following proposals for the content and source of the mandates for the three modules:

(a) The SPI should receive its mandate from the UNCCD. Its mandate would be to: (i) receive and respond to requests for information, knowledge and advice from the intergovernmental process of the UNCCD (through the CST); (ii) analyse and communicate the needs of the CST and COP for information, knowledge and advice; (iii) analyse and harmonize scientific assessments received and communicate these and policy-relevant scientific advice to the CST; (iv) regularly analyse policy-relevant scenarios, scientific information, tools and methodologies for DLDD; (v) develop synergies in action with existing international scientific advisory bodies, such as the IPCC and IPBES, and between the three Rio conventions (UNCCD, UNFCCC and CBD) (see chapter III.H); and (vi) ensure that different knowledge systems, including non-academic knowledge systems, are involved as appropriate;

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<sup>16</sup> United Nations, 1994. *Elaboration of an International Convention to Combat Desertification in Countries Experiencing Serious Drought and Desertification, Particularly in Africa*. United Nations, New York.

(b) The IGS could: (i) receive and respond to requests for information and knowledge from the SPI, from the RSTHs and also other parties interested in the science of DLDD; (ii) serve as an authoritative source for analysing, synthesizing and communicating scientific information and knowledge; (iii) achieve and maintain a global and regional overview on DLDD science and technologies; (iv) identify and prioritize key scientific information and knowledge needed by policymakers and other stakeholders; (v) identify policy-relevant information and knowledge gaps at global and regional scales, and identify the means to fill these gaps; (vi) evaluate, assess and synthesize scientific and technological information and knowledge to produce appropriate peer-reviewed assessments and regular monitoring of global and regional DLDD status (see chapter III.J); (vii) take account of non-academic (e.g. traditional) knowledge (see chapter III.I); (h) transfer requests for information and knowledge from the global policy level to the RSTHs and, upon request, provide scientific knowledge to the regional levels; and (viii) regularly alert regional stakeholders, through different forums and media, to new developments and emerging issues related to DLDD;

(c) The mandates of the RSTHs should be defined by the regions themselves, but could include: (i) identifying and prioritizing key scientific information and knowledge needed by policymakers and other stakeholders from the region; (ii) identifying the means to generate new information and knowledge at the regional level; (iii) carrying out regular assessments to survey the needs and identify policy-related information and knowledge gaps at regional levels; (iv) working jointly with the IGS to address global demands by policymakers for information and knowledge; (v) actively participating in the SPI through their representatives (see paragraph 53a); (vi) conducting comprehensive regular assessments and monitoring of regional DLDD status and trends (including socio-economic and biophysical aspects); and (vii) regularly alerting regional stakeholders, through different forums and media, to new developments and emerging issues related to DLDD.

## **F. UNCCD core and non-core disciplines and thematic areas**

37. The scientific community is divided into a large number of discrete groups or *disciplines*, each of which is a "branch of instruction or learning" that employs common procedures. However, members of a discipline often specialize in studying in detail just a small part of their subject, here referred to as a *thematic area*. Many thematic areas can be studied by members of different disciplines using common methods.

38. Some major fields of enquiry, such as DLDD, are so complex that research by scientists from many disciplines is needed to understand them fully. The case of DLDD is further complicated, since even scientists from the same discipline may study it in different ways. Desertification is defined in the text of the UNCCD as "land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities".<sup>16</sup> Land degradation involves the degradation of soil and vegetation that reduces "the physical, chemical or biological status of land... and may also restrict the land's productive capacity",<sup>17</sup> and is also linked to changes in water availability. Many scientists who study land degradation in dry areas call the subject of their research 'dryland degradation', not 'desertification'. Research into dryland degradation is itself only a subset of research into land degradation in all eco-regions.

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<sup>17</sup> Chartres C., 1987. Australia's land resources at risk. In Chisholm A. and Dumsday R. (eds.), 1987. Land Degradation: Problems and Policies: 7–26. Cambridge University Press, Cambridge.

39. If the UNCCD is to realize the third objective of The Strategy and “become a global authority on scientific and technical knowledge” on DLDD<sup>18</sup> it must gain access to all essential knowledge on DLDD, as well as the disciplines that can supply this knowledge. On the other hand, it must do so cost-effectively and avoid unnecessary duplication. The AGSA therefore evaluated a number of options for gaining access to all essential knowledge:

(a) Relying on a group of scientists from a number of *essential disciplines* and thematic areas to synthesize knowledge produced by these disciplines and thematic areas;

(b) Limiting the membership of the group of scientists (see chapter III.G) by drawing on knowledge produced by a smaller number of *core disciplines* and thematic areas;

(c) Relying heavily on knowledge produced by existing science advisory bodies, such as the IPCC and the new IPBES. This would take maximum advantage of the potential for synergies with these bodies (see chapter III.H).

40. To address these questions as objectively as possible the AGSA team responsible for investigating this component used a technique known as knowledge fingerprinting. This method assumes that every major field of enquiry, such as DLDD, has its own profile of sources of knowledge, or “fingerprint”, which distinguishes it from other fields. Fingerprints can be empirically determined by using samples of publications to identify the disciplines and thematic areas linked to each field of enquiry, rank the frequencies of different disciplines and thematic areas, and compare the relative frequencies of disciplines and thematic areas for different fields.

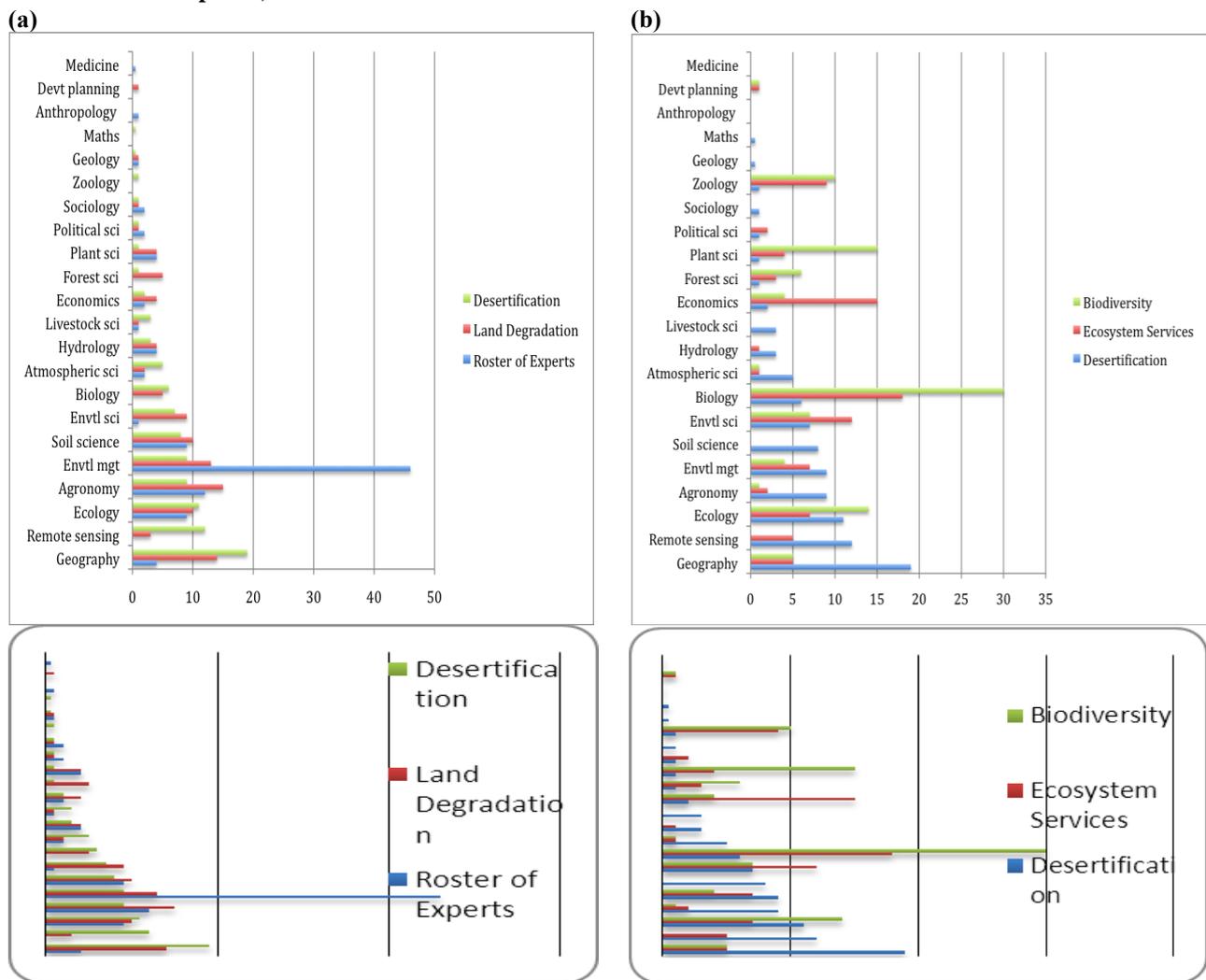
41. Preliminary results of a study of the DLDD fingerprint indicate that a large number of essential disciplines are required to supply essential knowledge, e.g. authors of a sample of scientific papers on “desertification” came from 19 disciplines and sub-disciplines, and authors of another sample of papers on “land degradation” came from 18 disciplines. The roster should include all experts on desertification in each country, yet specialities reported by 1,767 members of the roster place them in 16 of these disciplines, implying that each discipline is viewed as ‘essential’ by at least one Party to the UNCCD (see figure 2a).

42. The DLDD fingerprint is distinguished by six core disciplines focusing on land management: almost two thirds of authors of the “land degradation” papers came from agronomy, geography, environmental management, soil science and ecology, and a similar proportion of authors of the “desertification” papers were from these disciplines plus remote sensing. Yet none of the other ‘non-core’ disciplines can be described as non-essential, e.g. insights from atmospheric science into climatic variability are vital for a proper understanding of DLDD, despite having only very low shares in the “land degradation” and “desertification” lists.

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<sup>18</sup> See ICCD/COP(8)/16/Add.1, decision 3/COP.8.

Figure 2  
**Disciplinary fingerprints of: (a) Desertification, land degradation and UNCCD roster of experts; and (b) Desertification, ecosystem services and biodiversity (percentage of disciplines)**

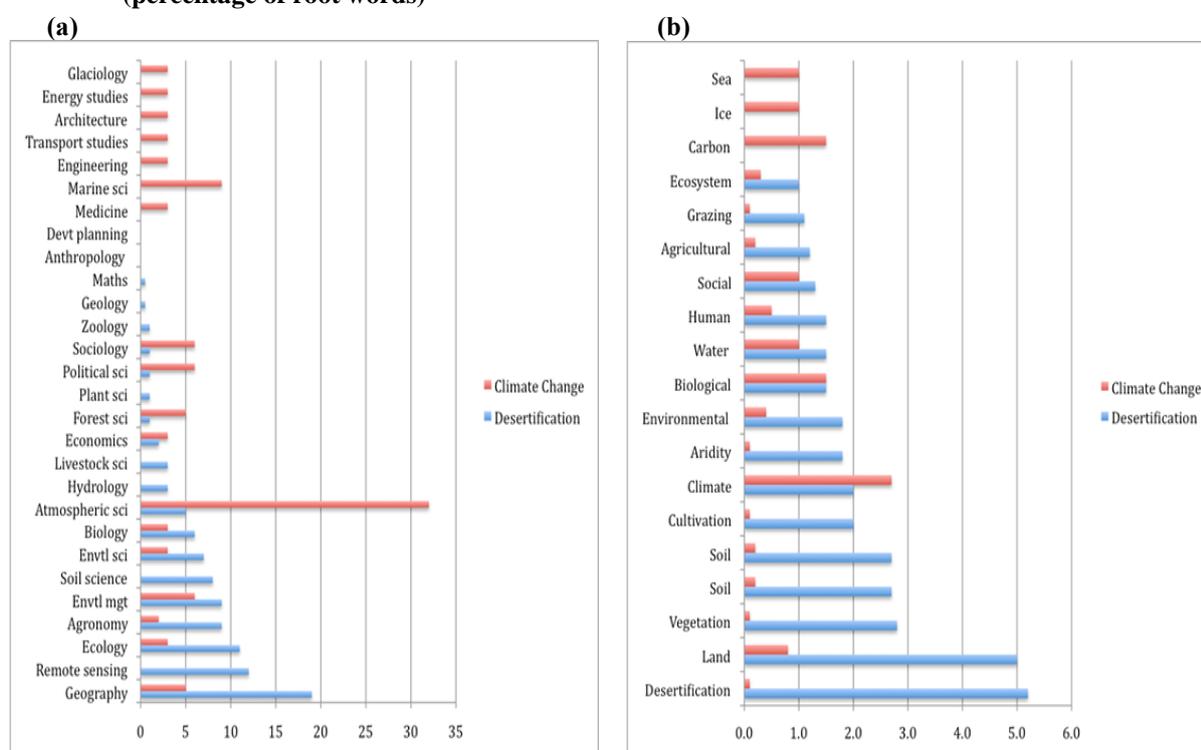


43. To assess the potential for relying on existing science-advisory bodies the fingerprinting process was repeated for the IPBES and the IPCC. This revealed that the fingerprints of biodiversity and ecosystem services appear to be very different from the DLDD fingerprint (see figure 2b). Four disciplines – biology, plant science, ecology and zoology – accounted for more than two thirds of all authors of a sample of papers on biodiversity; another set of four disciplines – biology, economics, environmental science and zoology – accounted for over half of authors of a sample of papers on ecosystem services. Two core DLDD disciplines – agronomy and geography – have low shares in the biodiversity and ecosystem services fingerprints, and soil science is entirely absent. A full answer will only become available once the IPBES begins to produce reports that synthesize knowledge on biodiversity and ecosystem services. Agronomy and soil science are intertwined issues that provide a ground for biodiversity and ecosystem service research, especially in drylands. The differences between the DLDD, biodiversity and

ecosystem services fingerprints clearly indicate the mutual benefits of exploiting synergies between the IPBES and the new integrated scenario.

44. The disciplinary fingerprint of climate change is also different from the DLDD fingerprint (see figure 2b). An initial scan of knowledge reported in the latest IPCC Assessment Report on physical science,<sup>19</sup> impacts and adaptation and mitigation,<sup>20</sup> shows that the fingerprint is dominated by atmospheric science, which accounts for about a third of all knowledge. Four more disciplines – marine/freshwater science, environmental management, political science and sociology – account for another third (see figure 3a). Environmental management is the only DLDD core discipline among the IPCC core disciplines but it has a relatively low share.

Figure 3  
**Desertification and climate change: (a) Disciplinary fingerprints (as a percentage of disciplines); and (b) Thematic area fingerprints for desertification and climate change (percentage of root words)**



45. Climate change and desertification do, however, have common thematic areas which emphasize the potential synergies between the IPCC and the integrated scenario. Analysis of the sample of papers on “desertification” identified 66 DLDD thematic areas, ranging from “combating desertification” to “water erosion” (see annex II). The IPCC's latest

<sup>19</sup> Solomon S., Qin D., Manning M., Chen Z., Marquis M., Averyt K.B., Tignor M. and Miller H.L.(eds.), 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge.

<sup>20</sup> Metz B., Davidson O.R., Bosch P.R., Dave R. and Meyer L.A. (eds), 2007. Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge.

Assessment Report shared 33 of these thematic areas, but they were just a fraction of all thematic areas in the IPCC report and were often only mentioned a few times in the text. To compare the thematic area fingerprints of DLDD and climate change the frequency of single root words was measured, i.e. the first words of thematic area names, e.g. “soil” is the root word of the “soil degradation” and “soil conservation” thematic areas. “Climate” dominated the climate change fingerprint again, while each of the next highest terms – “biological” and “carbon” – were only half as frequent; the themes of “desertification”, “rangeland” and “salinization” were infrequent. “Climate”, “biological”, “water” and “social” were in the desertification fingerprint too, but ranked from 6th to 12th, below its own core root words of “desertification”, “land”, “vegetation”, “soil”, and “cultivation” (see figure 3b).

46. The AGSA agrees that limiting the scope of scientific advice to a few core scientific disciplines and thematic areas could, in principle, lead to a cost-effective integrated scenario. However, since the AGSA was unable to find evidence that a small number of disciplines could provide comprehensive knowledge of DLDD, it proposes that the IGS and RTSHs should include a larger number of essential disciplines to ensure comprehensive coverage.

47. Based on the evidence reviewed in this section, the AGSA provides an initial list of 23 essential disciplines which are needed to give the UNCCD the comprehensive scientific knowledge it requires on the complex phenomenon of DLDD (see table below). The thematic areas listed in this table could also be a starting point to focus knowledge flows from these disciplines. All these disciplines are relevant to the mandate of the UNCCD and the integrated scenario and, by complementing disciplines prominent to the IPCC and IPBES, they will enhance synergies with these bodies for implementing joint initiatives, also in drylands.

**Initial list of essential scientific disciplines and thematic areas for desertification, land degradation and drought**

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**Essential scientific disciplines**

Agronomy, anthropology, atmospheric science, biology, development studies, ecology, economics, environmental management, environmental science, forest science, geography, geology, hydrology, livestock science, medicine, plant science, political science, rangeland management, remote sensing science, sociology, soil science, water management and zoology.

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**Thematic areas**

Adaptation, afforestation, agricultural development, agricultural intensification, agriculture, albedo, biodiversity, biomass, carbon sequestration, climate change, climate modelling, climate variability, deforestation, desertification, drought, dust, ecological resilience, economic development, ecosystem services, environmental change, environmental degradation, environmental impact assessment, environmental policy analysis, extreme events, fertilizers, flooding, food security, global governance, irrigation, land cover change, land degradation, land restoration/reclamation, land use change, land-climate system, landscape ecology, livelihood analysis, migration, plant nutrition, policy analysis, population growth, poverty, rangeland ecology, rangeland management, reforestation, rehabilitation, restoration, runoff, salinization, science-policy analysis, sedimentation, social resilience, soil conservation, soil degradation, soil erosion, sustainable development, vegetation change, vegetation degradation, vulnerability, water conservation, water management, water quality and water resources.

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## G Membership

48. The *membership* of a group comprises its “body of members”. Rules governing membership are among the most fundamental of rules for any group as they determine who enters and leaves it.<sup>21</sup> Membership rules examined by the AGSA included determining: (a) individual versus group membership; (b) how individual scientists are selected; (c) the balance of disciplinary and thematic area affiliations; (d) criteria for selecting individual scientists; and (e) period of membership.

49. Membership varies greatly between existing networks and panels. Membership of the IPCC and the newly emerged IPBES, for example, is confined to governments, but members of the World Overview of Conservation Approaches and Technologies (WOCAT) network are research institutions, and members of the DesertNet International (DNI) network are individual scientists.

50. Procedures for selecting scientists also differ. In the IPCC, for example, members of the Bureau, Executive Committee, Steering Committee, Working Groups and Task Forces are all elected in plenary sessions by Member States. Working groups and task forces then select lead authors of Assessment Reports on a fixed-term basis. Only at this stage are many hundreds of individual scientists invited to serve voluntarily in a huge international network, taking into account the balance of expertise, regional location and gender. The IPBES plans to include a wider range of disciplines than the IPCC, as well as practitioners and coordinators of indigenous knowledge networks, as well as more transparent selection rules. In contrast, membership of DNI is open to all scientists working on land degradation and desertification, and governments only attend meetings as observers.

51. The UNCCD has traditionally selected the membership of scientific groups which advise it. It uses regional representation criteria, and draws on members of the Roster of Experts and Science and Technology Correspondents (STCs), both of whom are nominated by governments. On the other hand, scientific credentials are the principal criterion for selecting members of many autonomous scientific groups.

52. The period of membership also varies. The UNCCD has in the past used ad hoc science advisory working groups, but these only serve for a limited time and have different memberships. Membership of IPCC working groups is for a limited period too, but lasts for the entire period required to complete each Assessment Report. Membership of DNI, on the other hand, has no time limits.

53. Based on this evidence, the AGSA makes the following proposals for the membership of the three modules:

(a) Membership of the SPI and their duration should be specified in its terms of reference but should include members of the Bureau of the CST; a selected number of representatives of the Parties as agreed by the COP and who are competent in a field of expertise on DLDD, taking into account the regional balance; members of the IGS; and representatives of the RSTHs. The AGSA proposes that representatives of the Parties in the SPI could be elected at the meetings of the CST during the COP and serve for two years. Each regional group could nominate the following to participate in the SPI: (i) a government representative competent in a specific field of expertise; and (ii) one representative from regional scientific networks. United Nations organizations, other intergovernmental organizations, environmental conventions, science-advisory bodies and NGOs would be eligible to attend SPI meetings as accredited observers. A global call by

<sup>21</sup> Ostrom E., 2011. Background on the Institutional Analysis and Development Framework. Policy Studies Journal 39: 7–27.

the SPI could give every opportunity for contributions from other stakeholders considered relevant to the implementation of the Convention, including the private sector;

(b) Members of the IGS should be scientists in their individual capacities and membership should be based on scientific credentials. The process of membership selection should be transparent, and allow for the involvement of scientists from all regions and from all relevant disciplines and thematic areas which are required to give essential knowledge to the UNCCD (such as those listed in the table above, paragraph 47). A call could be launched to ensure that experts from all regions are aware of the possibility of joining the IGS in their individual capacities. Membership criteria could include a mix of a strong track record of: peer-reviewed publications in international journals; integrated and participatory research; on-the-ground experience; and membership of editorial boards of leading international scientific journals, or of the boards of leading scientific organizations;

(c) Working groups of the IGS would be established with the necessary expertise to prepare reports for the UNCCD. Membership of these working groups would be selected on the basis of scientific credentials and acknowledged expertise in the relevant DLDD topic, and would be regionally representative and reflect an appropriate gender balance. The normal expectation would be that each of the five UNCCD regions would be equally represented;

(d) Membership and membership criteria of the RSTHs should be decided by the hubs themselves, but should consider active researchers with practical experience.

54. The AGSA makes the following suggestions for membership of the RSTHs. Membership could be open to individual scientists, as well as regional and subregional scientific networks, associations and institutions, as well as other organizations in each region with research interests in DLDD (including non-academic knowledge of these). Each network, institution, organization, etc., could nominate between one and three scientists from whom its representatives at meetings of the RSTHs could be selected. Minimum criteria for membership would be determined by the hubs themselves but could use similar criteria to those for the IGS, e.g. individuals would be active researchers with track records of publications, research funding; on-the-ground experience, etc. National Focal Points and Science and Technology Correspondents could represent their governments as members of the RSTHs.

## **H. Exploiting synergies with existing panels, platforms and networks, including those established under other United Nations conventions**

55. *Synergies* occur when two or more groups cooperate and produce outcomes greater than they could produce by themselves. Climate change and DLDD are major causes of biodiversity loss, and biodiversity management can contribute to climate change adaptation and to combating desertification. So the potential to exploit synergies between the UNCCD, UNFCCC and CBD has long been appreciated.<sup>22, 23, 24</sup> There is also potential for synergies

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<sup>22</sup> Williams M.A.J. and Balling R.C., 1996. *Interactions of Desertification and Climate*, Edward Arnold, London.

<sup>23</sup> Grainger A., Stafford Smith M., Glenn E.P. and Squires V.R., 2000. Desertification and climate change: the case for greater convergence. *Mitigation and Adaptation Strategies for Global Change* 5: 361–377.

<sup>24</sup> Cowie A., Schneider U.A. and Montanarella L., 2007. Potential synergies between existing multilateral environmental agreements in the implementation of land use, land-use change and forestry activities. *Environmental Science & Policy* 10: 335–352.

between the integrated scenario, the science advisory bodies for the two other Rio conventions (the IPCC and IPBES) and other international scientific networks.

56. However, since the knowledge fingerprints of DLDD, climate change and biodiversity and ecosystem services are different (see figures 2a and 2b), synergies with existing science advisory bodies are likely to be very specific, and so exploiting them will need careful planning. Synergistic relationships between the integrated scenario and the IPBES could involve, for example, joint action to catalyse more research in biodiversity and ecosystem services in dry areas. Analysis of DLDD thematic areas which are shared by the IPCC suggests that there are several thematic areas in which the IPCC is especially strong and which the integrated scenario would benefit from. Should the COP request special reports on the long-term relationship between DLDD and climate change, or biodiversity and ecosystem services, then building cooperation with existing bodies could allow these to be produced jointly and cost-effectively through the modular approach suggested by AGSA (see figure 1).

57. The AGSA therefore proposes that once the SPI and the IGS have been established they should give priority to building synergistic links with other science-advisory bodies, such as the IPCC and IPBES. Should the CST, mandated by the COP, request peer-reviewed assessments on the relationships between DLDD and climate change, or between DLDD and biodiversity and ecosystem services, the resulting cooperative links would allow joint preparation of such assessments in a cost-effective way. Such links could also enhance collaboration between the three Rio conventions.

58. Formal requests for knowledge from the IPCC or IPBES could come from the CST, as mandated by the UNCCD. An example of this is the mandate formulated by the CBD COP 11 in 2012 to the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) of the Convention on Biological Diversity (CBD) to submit thematic proposals directly to the IPBES for further consideration.

59. Cooperation between the IGS and other permanent regional, subregional and national scientific networks with interests in DLDD, through the RSTHs, will provide information on recent research in affected UNCCD regions which the IGS may have missed when reviewing the international peer-reviewed scientific literature. Participants in the CST e-survey listed 111 networks of this kind,<sup>4</sup> but checks are required to establish how many of these networks are still active. Such links will also help to disseminate scientific knowledge synthesized by the IGS – scientists in the regions could thereby benefit from the generic discoveries made in one region that could be applied in others.

60. The AGSA also proposes that cooperation with other international networks interested in DLDD would also be mutually beneficial. The UNCCD e-survey identified 87 such groups,<sup>25</sup> but through a systematic inventory more could be found. Permanent networks include DesertNet International (DNI); the Global Network of Desert Research Institutes (GNDRI); the Global Soil Partnership (GSP) established by the United Nations Food and Agriculture Organization (FAO) to facilitate cooperation on the role of soils in improving food security and adapting to and mitigating climate change; the Intergovernmental Assessment on Agricultural Knowledge, Science and Technology for Development (IAASTD); the Land Degradation Assessment in Drylands (LADA) project, coordinated by FAO to devise improved methods for monitoring land degradation; and the World Overview of Conservation Approaches and Technologies (WOCAT), which is a network of research institutions working on soil and water conservation technologies.

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<sup>25</sup> ICCD/COP(11)/CST/INF.1.

## I. Non-academic knowledge

61. The AGSA has also been asked for its advice on the role of non-academic knowledge in the integrated scenario. Defining *non-academic knowledge* is difficult because this term is rarely used. It is defined here as knowledge that is either not gained by scientific methods and in compliance with academic institutions or is not available for free exchange among academics.

62. Non-academic knowledge is divided here into seven categories: (a) *traditional knowledge*, which is "the knowledge that indigenous people capitalize on due to observations and transmission over very long periods of time",<sup>26</sup> and is mentioned in Articles 16-19 of the UNCCD; (b) *indigenous knowledge*, which is unique to a particular society or group;<sup>27</sup> (c) *local knowledge*, i.e. the knowledge of local communities that is context or environment-dependent but that need not be indigenous, traditional or rural;<sup>28</sup> (d) *commercial scientific knowledge*, which academics cannot easily access or freely exchange; (e) *official knowledge* produced by governments, sometimes in parallel with scientific knowledge and sometimes providing crucial data for such knowledge;<sup>28</sup> (f) *other non-academic scientific knowledge*, e.g. knowledge produced autonomously by scientists in corporate and governmental sectors; and (g) *knowledge produced by NGOs* through research or other means.

63. The knowledge used by United Nations conventions to make decisions has come under increasing public scrutiny – incorporating non-academic knowledge into syntheses of scientific knowledge will therefore require care. First, on grounds of credibility, validity and reproducibility: scientific knowledge is normally distinguished from non-scientific knowledge by the rigorous processes of evaluation that it undergoes before being published. Second, research shows that acceptance of scientific knowledge by governments depends as much on their perception of its salience and legitimacy as on its scientific credibility.<sup>29</sup>

64. The AGSA has focused on examining traditional, indigenous and local knowledge. These differ from academic knowledge in taking a 'know-how', rather than a 'know-why' approach; being relatively closed, instead of open; and being context-dependent instead of decontextualized and universally transferable. The terms "traditional knowledge", "indigenous knowledge" and "local knowledge" are often used interchangeably and have often not been clearly distinguished by many disciplines. Since the term "traditional knowledge" is mentioned in the text of the UNCCD, it is used in the remainder of this section.

65. After examining this component, the AGSA proposes that incorporating the traditional knowledge element of non-academic knowledge into knowledge that is synthesized, evaluated and reported in the integrated scenario, should be considered separately from documenting traditional knowledge and using it to enhance action on DLDD.

<sup>26</sup> Hibert F., Sabatier D., Andrivot J., Scotti-Saintagne C., et al., 2011. Botany, genetics and ethnobotany: a crossed investigation on the elusive tapir's diet in French Guiana. PLoS ONE 6 (10): 25850.

<sup>27</sup> Warren D.M., Slikkerveer L.J. and Brokensha D. (eds), 1995. The Cultural Dimension of Development: Indigenous Knowledge Systems. Intermediate Technology Publications, London.

<sup>28</sup> FAO, 2004. Building on Gender, Agrobiodiversity and Local Knowledge. UN Food and Agriculture Organization, Rome.

<sup>29</sup> Cash, D.W, Clark W., Alcock F., Dickson N., Eckley N., Guston D., Jager J. and R. Mitchell., 2003. Knowledge systems for sustainable development. Proceedings of the National Academy of Sciences 100: 8086-8091.

66. Local implementation of global schemes designed to manage drylands more sustainably is difficult without specific knowledge of local contexts, and could in future be made more effective if it is built on non-academic knowledge for those contexts. Sharing traditional knowledge between the Parties could make an important contribution to 'horizontal knowledge management', which is seen as a valuable alternative to the traditional top-down (or vertical) approach to disseminating knowledge.<sup>30</sup> Article 18 of the Convention makes the documentation and dissemination of traditional knowledge for practical use in the field the responsibility of the Parties: "The Parties shall... protect, promote and use... relevant traditional and local technology, knowledge, know-how and practices and, to that end, they undertake to: (a) make inventories of such technology, knowledge, know-how and practices...; (b) ensure that such technology, knowledge, know-how and practices are adequately protected....; (c) encourage and actively support the improvement and dissemination of such technology, knowledge, know-how and practices....; and (d) facilitate, as appropriate, the adaptation of such technology, knowledge, know-how and practices to wide use and integrate them with modern technology, as appropriate".<sup>31</sup>

67. The AGSA therefore proposes that the Parties should continue to be responsible for actively searching for, and documenting, traditional knowledge in their respective countries, e.g. among farmer communities, land users, land use planners, local authorities, environmental organizations etc., as agreed in article 18 of the Convention. NGOs could facilitate contacts with local societies as appropriate, and any progress in this respect could continue to be mentioned in the national reporting process. National repositories would be excellent for providing traditional knowledge to support the implementation of projects within the countries concerned, and for facilitating the exchange of knowledge between the Parties. However, more effective mechanisms are needed for transferring traditional knowledge to the UNCCD process and for sharing knowledge between countries.

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<sup>30</sup> Chasek P., Essahli W., Akhtar-Schuster M., Stringer L.C. and Thomas R., 2011. Integrated land degradation monitoring and assessment: horizontal knowledge management at the national and international levels. *Land Degradation and Development* 22: 272–284.

<sup>31</sup> United Nations, 1994. *Elaboration of an International Convention to Combat Desertification in Countries Experiencing Serious Drought and Desertification, Particularly in Africa*. United Nations, New York.

68. There are currently very few proven methods to integrate traditional knowledge with scientific knowledge. One reason for this is that traditional/indigenous/local knowledge is context-specific, i.e. not universally applicable, and difficult to validate independently. Scientists have only recently begun to devise rigorous methods to integrate such traditional knowledge into scientific knowledge. Fortunately, some of this research is being undertaken in the area of DLDD,<sup>32</sup> as recognized in reports to the first UNCCD Scientific Conference.<sup>33</sup> The SPI and IGS could also benefit by exploiting synergies with other science advisory bodies active in this field. The IPBES has focused a lot of attention to traditional and indigenous knowledge, as well as organized various expert workshops on this issue.<sup>34</sup>

69. The AGSA therefore proposes that the IGS should promote the continued development of methods to integrate traditional knowledge with scientific knowledge (and more generally non-academic knowledge with academic knowledge), for example, by establishing a working group for this purpose. The RSTHs would be ideally placed to provide scientific support for using non-academic knowledge in the regions.

## **J. Expected activities, outputs and deliverables and the reporting process**

70. The performance of any group may be evaluated by its activities and ability to produce tangible outputs corresponding to expected deliverables. Thus, meetings of the UNCCD Group of Experts from 2001 to 2007 complied with the activities required by the CST but outputs did not correspond to expected deliverables.<sup>35</sup> The reporting process is that part of the integrated scenario in which knowledge synthesized by the group of scientists flows to policymakers via the SPI, other scientists, stakeholders and the general public.

71. Since it came into force, the UNCCD has received scientific reports on specific topics in two main ways: (a) from groups of senior scientists commissioned by the UNCCD, e.g. the AGSA, to produce outputs voluntarily and without payment; and (b) from individual consultants, whose reports are made available on the UNCCD website and presented at CST Special Meetings but these reports are not reviewed by other scientists.

72. Since 2009 the UNCCD has also received scientific knowledge by commissioning a consortium of scientists to convene working groups representing the UNCCD regions to synthesize research findings in major fields of interest in reports (called White Papers), which are then presented to the UNCCD Scientific Conferences. Other outputs may include papers written by working group members and published in scientific journals.<sup>36</sup> A separate consortium or institute is commissioned for each conference.

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<sup>32</sup> Raymond C.M., Fazey I., Reed M.S., Stringer L.C., Robinson G.M., Evely A.C., 2010. Integrating local and scientific knowledge for environmental management. *Journal of Environmental Management* 91: 1766–1777.

<sup>33</sup> Reed M.S., Buenemann M., Athlopheng J., Akhtar-Schuster M., Bachmann F. et al., 2011. Cross-scale monitoring and assessment of land degradation and sustainable land management: a methodological framework for knowledge management. *Land Degradation and Development* 22: 261–271.

<sup>34</sup> Feit U., Korn H. and Paulsch A. (eds.), 2013. Report of the International Expert Workshop Connecting Diverse Knowledge Systems in the Context of IPBES, April 22–25, 2013, International Academy for Nature Conservation, Isle of Vilm, Germany.

<sup>35</sup> Grainger A., 2009. The role of science in implementing international environmental agreements: the case of desertification. *Land Degradation and Development* 20: 410–430.

<sup>36</sup> Winslow M.D., Vogt J.V., Thomas R.J., Sommer S., Martius C. and Akhtar-Schuster M., 2011. Science for improving the monitoring and assessment of dryland degradation. *Land Degradation and*

73. One model to take into account in the design of the activities, outputs, deliverables and reporting process of the new integrated scenario is the IPCC. The IPCC has three working groups which produce state-of-the-art *Assessment Reports* on physical science,<sup>37</sup> impacts and adaptation<sup>38</sup> and mitigation;<sup>39</sup> these reports present a continually updated assessment of scientific evidence on climate change (see chapters III.F and III.H), and are available free of charge on the IPCC website. Since the working groups are accountable to the scientific community, their assessments are subjected to rigorous peer review. However, the *Policymakers' Summaries*, which are the official deliverables communicated to the Parties to the UNFCCC, are negotiated on a line-by-line basis with government members of the IPCC. In addition, the IPCC commissions *Special Reports* to clarify key aspects of UNFCCC activities, e.g. on the role of forests in climate change.<sup>40</sup> The IPBES also plans to deliver assessment, synthesis and special reports, with summaries for policymakers, as well as methodologies, technical reports and supporting material.

74. The AGSA proposes that the outputs of the IGS should be based on a rigorous external peer review process. The IGS would be divided into thematic working groups, with each group being responsible for undertaking authoritative syntheses of specific areas of scientific knowledge on DLDD. Outputs could include: (a) regular land degradation assessment reports, with executive summaries for policymakers, and issued at a frequency to be decided; (b) special reports; (c) methodological reports, practical manuals and technical papers; (d) customized versions of assessment reports and special reports for individual regions, with special application reports targeted at planners, environmental managers, etc.; and (e) other reports to support preparedness by the Parties on short- to medium-term emerging issues. The scheduling of reports required by the UNCCD as deliverables would be decided through discussions at SPI meetings. However, the COP could mandate the CST, or its Bureau, to request reports that are needed more urgently and could be produced within their discretionary budgets.

75. The AGSA also proposes that the reporting process should be as comprehensive and transparent as possible. Reports would be presented to SPI meetings to be transmitted by the CST to the COP. Reports would also be made available to other participants at SPI meetings; and to all stakeholders and the general public on the UNCCD website, in accordance with current practice. Effective communication pathways between the three modules should ensure the wide dissemination of reports to scientists and stakeholders in the regions, as well as the involvement of the RSTHs.

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Development 22: 145–149.

<sup>37</sup> Solomon S., Qin D., Manning M., Chen Z., Marquis M., Averyt K.B., Tignor M. and Miller H.L.(eds.), 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge.

<sup>38</sup> Parry M.L., Canziani O.F., Palutikof J.P., van der Linden P.J. and Hanson C.E. (eds), 2007. *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge.

<sup>39</sup> Metz B., Davidson O.R., Bosch P.R., Dave R. and Meyer L.A. (eds), 2007. *Climate Change 2007: Mitigation of Climate Change*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge.

<sup>40</sup> Watson R.T., Noble I.R., Bolin B., Ravindrath N.H., Verardo D.J. and Dokken D.J. (eds.), 2000. *Land Use, Land-Use Change and Forestry*. Cambridge University Press, Cambridge.

## K. Implementation mechanisms and functional modalities

76. *Implementation mechanisms* are procedures needed to put into effect the integrated scenario. *Functional modalities* refer to the details of how the integrated scenario will operate. Both aspects are considered together in this section as they are closely connected. Scientific research on implementation has highlighted the shortcomings of top-down and bottom-up approaches, and identified the advantages of more sophisticated strategies that combine the best aspects of both approaches.<sup>41</sup>

77. The AGSA proposes that the integrated scenario should be implemented by means of a modular mechanism that combines all of its proposals for the individual components into three core modules:

(a) An SPI that facilitates a two-way science-policy dialogue; ensures the delivery of policy-relevant knowledge, information and advice on DLDD; receives its mandate from the UNCCD; and takes full advantage of synergies with the work of the IPCC, IPBES and other science-advisory bodies;

(b) An IGS, which is an authoritative source for analysing, synthesizing and communicating unbiased scientific information and knowledge and advice on DLDD; has non-governmental legal status; is self-governing; and is composed of individual scientists from all the essential disciplines needed to provide comprehensive knowledge on DLDD. Members would be selected using transparent membership criteria based on scientific credentials, and membership would be open to experts from all regions, including those participating in the RSTHs;

(c) RSTHs, designed as appropriate to individual regional circumstances, which can collate, analyse, synthesize and communicate regional knowledge on DLDD issues and participate in the SPI.

78. The AGSA's fresh approach to communicating scientific knowledge to the UNCCD is consistent with the more inclusive and self-governing process that is now emerging, in which non-governmental groups, such as scientists, multi-stakeholder interactions and regional implications play more prominent and autonomous roles.<sup>42</sup> It is also consistent with recent calls for a more "polycentric" approach to: (a) tackling global environmental problems;<sup>43</sup> and (b) organizing science-policy communication in the IPCC to improve its effectiveness by addressing its unwieldy top-down structure and processes, and offering "more geographically and culturally nuanced knowledge" than is currently possible.<sup>44</sup> The UNCCD, with its unique region-based structure, is ideally suited to adopting this innovative approach.

79. The AGSA also proposes six initial implementation steps to initiate the three modules once the COP has decided to establish them:

(a) The SPI would be established by a decision of the COP, taking into consideration the current scope and functions of the existing UNCCD Scientific Conferences;

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<sup>41</sup> Schofield J., 2001. Time for a revival? Public policy implementation: a review of the literature and an agenda for future research. *International Journal of Management Reviews* 3: 245–363.

<sup>42</sup> Rhodes R.A.W., 1996. The new governance: Governing without government. *Political Studies* 44: 652–667.

<sup>43</sup> Ostrom, E., 2010. Polycentric systems for coping with collective action and global environmental. *Global Environmental Change* 20:550–557.

<sup>44</sup> Hulme M., Zorita E., Stocker T.F, Price J. and Christy J.R., 2010. IPCC: cherish it, tweak it or scrap it? *Nature* 463: 730–731.

(b) The IGS would be established, and accredited to the UNCCD, to evaluate, assess and synthesize scientific and technological knowledge and produce peer-reviewed reports, in response to requests from the CST, which are then transmitted through the SPI. The IGS could be initiated by the core of scientists in the scientific networks which produced reports for previous UNCCD Scientific Conferences, working in cooperation with other interested scientists and organizations actively involved in researching DLDD;

(c) An organization would be selected to host the administrative support unit that would provide coordination for the IGS;

(d) The structure, status and constitution of the RSTHs, and other regional bodies, should be decided by the regions themselves given the varying status of existing arrangements. Some regions may prefer to have a Regional Coordination Unit which could communicate with the RSTHs, for example, through their own science-policy interfaces. Other regions may wish to strengthen the institutional structure for coordinating Thematic Programme Networks (TPN), Regional Action Programmes and Subregional Action Programmes. The AGSA does not believe that it is part of its mandate to make detailed proposals on these aspects other than to emphasize the huge potential for the modular mechanism to strengthen and/or revitalize contributions from the regions to the UNCCD;

(e) Two-way exchanges of information would be initiated between: (i) the SPI and the IGS; (ii) the SPI and the RSTHs; and (c) the IGS and the RSTHs. The IGS could, if asked, provide guidance to the RSTHs in responding to requests for knowledge and policy-relevant advice, especially with regard to the development of Regional, Subregional and National Action Programmes (i.e. RAPs, SRAPs and NAPs, respectively). Such synergies are central to the modular mechanism and are consistent with the regional approach of the UNCCD, and could enhance regional research activity in DLDD and the involvement of scientists from the regions in the work of the UNCCD. These two-way exchanges would build on existing regional arrangements of the UNCCD and allow RSTHs to: (i) channel regional scientific knowledge to the SPI, IGS and regional bodies of the UNCCD; and (ii) utilize for regional implementation all relevant global knowledge synthesized for the SPI by the IGS;

(f) The integrated scenario could be introduced in a stepwise fashion, with the SPI and IGS established in phase 1 and the RSTHs in phase 2. All three modules could build on existing groups and meetings. This would also enable appropriate technical and financial support to evolve over time.

80. The AGSA has identified six key functional modalities for the SPI:

(a) The COP should decide on the frequency and duration of the meetings of the SPI. The Bureau of the CST, jointly with the IGS and with the support of the UNCCD secretariat, would have responsibility for organizing those meetings;

(b) The Bureau of the CST and the IGS, meeting in the SPI, would propose topics for future SPI meetings to the COP. The COP could also independently identify and send requests for scientific knowledge to the SPI;

(c) The SPI would prepare a draft work programme required to address a topic it proposes or which has been requested by the COP. The SPI would send the draft work programme through the CST to the COP (or the COP bureau) for approval;

(d) Once a work programme has been approved the SPI (or the Bureau of the CST) would send a request to the IGS, the RSTHs and other relevant bodies to implement the work programme;

(e) The SPI and IGS should consider any scientific and technical support required by the RSTHs to implement the work programme, and also the potential to exploit synergies with other science-advisory bodies;

(f) The SPI would be an appropriate arena to develop practical synergies with the IPCC and IPBES, and with other scientific activities of the other two Rio Conventions, e.g. for joint long-term peer-reviewed assessments.

81. Scientific advice would be transformed in the SPI into a policy-relevant format before it enters the negotiation process in the COP. The compact design of the SPI would ensure faster communication than occurs in the science-policy interfaces of other United Nations bodies, and ensure more consistent advice than is currently offered by successive UNCCD Scientific Conferences. The SPI could also be viewed as a natural evolution of these conferences. Building collaborative links with the IPCC and IPBES would facilitate joint preparation of peer-reviewed assessments on the relationships between DLDD and climate change, or between DLDD and biodiversity and ecosystem services, should these be requested by the CST, mandated by the COP, or by the COP itself. The COP could evaluate the effectiveness of the new integrated scenario over a specified period. A specimen terms of reference for the SPI is provided, at the request of the Bureau of the CST, in Annex III.

82. The AGSA also proposes five initial functional modalities for the IGS:

(a) It could be divided into several science and technology working groups, each covering a major area of DLDD research;

(b) Membership of these groups should be limited in scope and period of office. The groups would be established in response to requests from the COP via the CST;

(c) Working groups would invite interdisciplinary and disciplinary specialists to become members (including scientists who work for bodies that are members of the RSTHs) and communicate with existing scientific networks. The criteria by which members of the IGS would be selected are described in chapter III.G;

(d) The timing and frequency of working group meetings would be determined by the demands made on the SPI and by available funding;

(e) The IGS would support the COP and SPI in creating practical synergies with IPCC and IPBES and other scientific bodies by responding to requests for information from them.

83. The AGSA makes the following additional suggestions on the RSTHs:

(a) RSTHs could be established at a pace appropriate to the needs of each region. They could be linked to existing regional structures through hosting and funding arrangements devised in each region, and receive support from the UNCCD secretariat. The chairs of the RSTHs could be members of the SPI;

(b) RSTHs could, like the IGS, develop working groups. Their meetings would promote exchanges between scientific networks and governments, represented by regional representatives elected by the Parties (including National Focal Points [NFPs] and Science and Technology Correspondents [STCs]), e.g. for identifying useful traditional knowledge and technology that could be transmitted to the SPI and IGS (see also paragraph 69);

(c) Implementation of the RSTHs would benefit from reviewing the scientific relevance of regional Thematic Network Programmes (TPNs) and the opportunities to revitalize them when necessary.

## L. Financial, legal and other implications

84. United Nations conventions function according to rules in their founding texts and later decisions and protocols. They also rely on their Parties for voluntary financial contributions. Considering the legal and financial requirements for establishing a new integrated scenario via a modular approach is therefore crucial in order to avoid unnecessary costs and, if possible, any innovations requiring a change in the Convention text. However, better access to scientific knowledge should lead to a more informed allocation of existing funding for DLDD.<sup>45</sup>

85. The AGSA has concluded that the proposed SPI and IGS would be functionally consistent with the text of the UNCCD and subsequent decisions of the COP. This means that it would be legally viable (for example, decision 15/COP 1, paragraph 10). The SPI would be established by the COP as a standing body within the legal framework of the UNCCD, for which provision exists under article 22, paragraph 2 (c) and article 24, paragraph 3, of the Convention and also facilitated by the procedures laid out in decision 17/COP.1.

86. The legal and financial arrangements for the RSTHs may differ, as regions may wish to organize and maintain their own science-advisory bodies and science-policy interfaces in different ways and according to specific regional topics and needs. However, the RSTHs could facilitate, through existing regional elements and synergies with the other modules, the development of financial mechanisms for ensuring the sustained flow of resources.

87. The AGSA proposes, in accordance with rule 15 of the rules of procedure of the COP (decision 1/COP.1), namely that if the COP agrees to establish the integrated scenario proposed in this document, it should then request the secretariat to report to the CST on the administrative and budgetary (mandatory and voluntary) issues related to the functioning of the integrated scenario.

88. The AGSA believes that definitive guidance on the budget for the new integrated scenario should await the COP's approval of the AGSA proposals, and its decision on phasing in the SPI, IGS and RSTHs.

89. Therefore, the AGSA also proposes, in accordance with decision 15/COP.1, paragraphs 7 and 10 on the mandate of the CST, that the CST should submit to the COP for approval the initial programme of work for the proposed integrated scenario. Some indications on costs of other scientific advisory bodies are listed in Annex IV. Although science advisory bodies have different structures and modalities, these could be useful for the Parties to the UNCCD to know and make an approach to the possible costs of the modular approach proposed by AGSA, to be submitted to the Parties to the COP 11.

90. The AGSA further proposes that, to achieve the proper operation of the integrated scenario, the COP should extend an invitation to the Parties, intergovernmental organizations, the private sector and NGOs, as well as other donors, to make contributions to the Supplementary Fund and the Special Fund created by UNCCD.

91. The AGSA suggests that the Parties may also wish to consider following aspects whilst designing financial modalities:

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<sup>45</sup> Akhtar-Schuster M., Thomas R., Stringer L.C., Chasek P. and Seely M., 2011. Improving the enabling environment to combat land degradation: Institutional, financial, legal and science-policy challenges and solutions. *Land Degradation and Development* 22: 299–312.

- (a) Setting up of a trust fund. The AGSA, however, believes that the voluntary contributions into the trust fund should not be earmarked by conditionalities;
- (b) Responsibility and accountability of the financial reporting should be subject to internal and external audit;
- (c) Financial or in-kind contributions, which are provided to undertake the mandated scientific assessments for the UNCCD (or jointly with other MEAS) should not be given anonymously in order to underline the independency of scientific assessments carried out.

## **IV. Conclusions**

**92. The AGSA's analysis of the eleven components identified in its terms of reference has resulted in a proposal for a new integrated scenario for scientific advice. This can be implemented by a modular mechanism comprising three core modules: a Science-Policy Interface (SPI), an Independent Non-Governmental Group of Scientists (IGS) and Regional Science and Technology Hubs (RSTHs).**

**93. The modular mechanism incorporates aspects of each of the four options discussed at CST 10, but is likely to be more effective than any one of them individually. For whereas these options referred to different types of science-advisory bodies, the AGSA's proposal covers all characteristics of a science-advisory body and of the processes by which it communicates scientific knowledge and policy-relevant advice to UNCCD, the regions and all relevant stakeholders.**

**94. The modular mechanism has six advantages. First, it can be implemented in a stepwise manner, by initiating the SPI and IGS, and then allowing each region to design and establish its RSTH to its own specifications and needs at its own pace. Second, it is evolutionary in terms of structure, since it can build on the UNCCD Scientific Conferences and existing scientific networks which have already been established to advise them. This will also allow financing to evolve, which is particularly important given the global economic outlook and the reticence of donors to establish large new organizations. Third, by incorporating an independent IGS with external peer review procedures it will ensure that the UNCCD receives credible and unbiased scientific knowledge of the highest quality. Fourth, it emphasizes the needs of the regions and fully involves them, in a way that should also enhance scientific activity and science-policy communication within each region and facilitate tapping into other forms of knowledge (see chapter III.I). Fifth, it facilitates the establishment of synergistic links with existing science-advisory bodies, such as IPCC and IPBES, thereby making science-policy communication across all three Rio Conventions more effective, and increasing synergies between the Conventions themselves. Sixth, it is the only form of integrated scenario which could become operational within a 2–5 year timeframe (pending approval by the COP) and therefore enhance the implementation of The Strategy by 2018.**

**95. The results of the analysis reported here, together with the conclusions and proposals derived from this analysis, are the consensus view of the AGSA, even though its members come from different regions and backgrounds. Although all AGSA members are scientists, they also have a wide range of practical experience of the interface between science and policy in the UNCCD, for example, through serving in working groups for the UNCCD Scientific Conferences, together with academic expertise in international policy analysis and science-policy communication. The objective analysis of alternative arrangements for the eleven components of an integrated scenario for science-policy communication is unprecedented and the huge**

amount of work involved had to be carried out over a very short period of time. AGSA members undertook this work voluntarily, without payment, and in addition to their regular work, because they are all totally dedicated to improving UNCCD's access to scientific information, knowledge and advice. They relied heavily on communication by e-mail, using internet services that were not always reliable. Owing to the limited amount of time allowed for the AGSA's work it has not been able to present more detailed specifications of the three modules here. However, the AGSA is confident that the basic principles presented here are robust, and the Group will be happy to respond to any queries or requests for clarification that arise during discussions at CST 11.

96. The AGSA invites the CST to discuss the conclusions and recommendations of the AGSA and to make recommendations to the COP. The AGSA believes that its conclusions and recommendations could ensure that UNCCD obtains the scientific knowledge that it needs to enhance its effectiveness and scientific reputation.

## Annex I

### **List of members of the Ad Hoc Working Group to Further Discuss the Options for the Provision of Scientific Advice Focusing on Desertification/Land Degradation and Drought Issues and their responsibilities**

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Dr. Mariam Akhtar-Schuster University of Hamburg, Germany	Chair Lead author, Implementation mechanisms
Dr. Farshad Amiraslani University of Tehran, Iran	Lead author, UNCCD core and non-core disciplines/thematic areas
Dr. Cristobal Felix Diaz Morejon Ministerio de Ciencia, Tecnología y Medio Ambiente, Cuba	Lead author, Expected outputs, activities and deliverables
Dr. Richard Escadafal Centre d'Etudes Spatiales de la Biosphere, Toulouse, France	Documents Facilitator
Dr. Emil Fulajtar Soil Science and Conservation Research Institute, Bratislava, Slovakia	Lead author, Non-academic knowledge
Dr. Alan Grainger University of Leeds, United Kingdom	Rapporteur Lead author, Governance modalities, science-policy interface and reporting process
Prof. Klaus Kellner North-West University, Potchefstroom, South Africa	Co-Chair Lead author, Synergy with existing panels/networks
Dr. Sahibzada Irfanullah Khan Planning & Development Department, Peshawar, Pakistan	Lead author, Membership
Dr. Octavio Perez Pardo National Secretariat of Environment and implications, Sustainable Development, Buenos Aires, Argentina	Lead author, Financial, legal and other implications
Dr. Uladzimir Sauchanka Belgorhimprom, Minsk, Belarus	Lead author, Status
Dr. Fasil Reda Tena Ethiopian Institute of Agricultural Research, Addis Ababa, Ethiopia	Lead author, Role, objectives and mandate
Dr. Richard James Thomas United Nations University, Hamilton, Canada	Lead author, Functional modalities

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## Annex II

### Thematic area fingerprint of desertification

(Overlaps with the Thematic Area Fingerprint of Climate Change in Bold Text).

Root Words	Secondary Words of Thematic Areas				Frequency of Root Words Desertification IPCC	
<b>Desertification</b>	Combating	Controlling	Monitoring		5.2	0.1
<b>Land</b>	<b>Cover change</b>	<b>Use change</b>	<b>Degradation</b>	Management	5.0	0.8
<b>Vegetation</b>	<b>Degradation</b>	Cover	Pattern analysis	Productivity	2.8	0.1
<b>Soil</b>	<b>Degradation</b>	<b>Erosion</b>	Contamination	Compaction	2.7	0.2
<b>Cultivation</b>	<b>Irrigated</b>	System	Over-cultivation		2.0	0.1
<b>Climate</b>	<b>Change</b>	<b>Modelling</b>	<b>Variability</b>		2.0	2.7
<b>Aridity</b>	<b>Arid</b>	<b>Semi-Arid</b>			1.8	0.1
<b>Environmental</b>	<b>Policy</b>	<b>Agreement</b>	Indicator	<b>Impact Assessment</b>	1.8	0.4
<b>Biological</b>	<b>Diversity</b>	<b>Biomass</b>			1.5	1.5
<b>Water</b>	<b>Management</b>	<b>Quality</b>	Erosion	Conservation	1.5	1.0
<b>Human</b>	<b>Impact</b>	Welfare			1.5	0.5
<b>Social</b>	<b>System</b>	<b>Resilience</b>	Development	<b>Institutions</b>	1.3	1.0
<b>Agriculture</b>	Intensification	Development			1.2	0.2
<b>Grazing</b>	<b>Pressure</b>				1.1	0.1
<b>Ecosystem</b>	<b>Services</b>				1.0	0.3
<b>Drought</b>					0.9	0.1
<b>Economic</b>	<b>Development</b>				0.9	0.6
<b>Rangeland</b>	Ecology	Management			0.8	0.1
<b>Ecological</b>	<b>Resilience</b>	Degradation	Restoration		0.8	0.3
<b>Population</b>	Growth	Density			0.7	0.2
<b>Wind</b>	Erosion				0.6	0.2
<b>Sustainable</b>	<b>Development</b>	Management			0.6	0.1
<b>Salinization</b>					0.5	0.1
<b>Knowledge</b>	<b>Indigenous</b>	Scientific	Management		0.5	0.0

NB. Desertification root words were identified from a sample of 140 papers with "desertification" in their titles, and frequency calculated as a percentage of all words (1,905). Climate change root words were identified from main headings in the index of the IPCC Fourth Assessment Report, and frequency calculated as a percentage of all main headings (1,445).

## Annex III

### **Draft terms of reference of the “Science-Policy Interface”**

1. The terms of reference of the “Science-Policy Interface” (SPI) are for the Conference of the Parties (COP) to specify. However, the Ad Hoc Working Group to Further Discuss the Options for the Provision of Scientific Advice Focusing on Desertification/Land Degradation and Drought Issues (AGSA) was asked by the Bureau of the Committee on Science and Technology (CST) to provide a draft as a basis for discussion. This draft is based on the proposals made by the AGSA in its pre-session document.
2. The SPI would take into consideration the scope and functions of the existing UNCCD Scientific Conferences and aspirations to improve their effectiveness by (a) analysing and proposing topics for forthcoming conferences to UNCCD through the CST, (b) providing guidance for the organization of such forthcoming conferences, and (c) providing guidance for unfolding policy-oriented recommendations. The SPI would be the central part of a modular mechanism that also comprises an “Independent Non-Governmental Group of Scientists” (IGS) and “regional science and technology hubs” (RSTHs).
3. The SPI would be a standing body of the UNCCD under the supervision of the COP (through the CST) and within the legal framework of the UNCCD.
4. The SPI would receive its mandate from the COP. This mandate would be: (a) to communicate to the IGS the needs of the CST and COP for information and knowledge so the IGS can respond to these needs; (b) to analyse and harmonize scientific assessments and policy recommendations prior to submission to the CST; (c) to analyse policy-relevant scenarios, scientific information, tools and methodologies relating to desertification/land degradation and drought (DLDD); (d) to develop practical synergies with other existing international scientific advisory bodies, for example, the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and between the UNCCD, the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD); and (e) to ensure that different knowledge systems, including non-academic knowledge systems, are involved as appropriate.
5. Membership of the SPI would include: members of the Bureau of the CST; a selected number of representatives of Parties competent in the field of expertise in DLDD issues, taking into account the regional balance; members of the IGS; and representatives of the RSTHs. Each regional group could nominate the following to participate in the SPI: (a) a government representative competent in the field of expertise; and (b) one representative of regional scientific networks. United Nations organizations, other inter-governmental organizations, environmental conventions, science-advisory bodies, and non-governmental organizations would be eligible to attend meetings of the SPI as accredited observers. A global call announced by the SPI could give every opportunity for contributions from other stakeholders considered relevant to the implementation of the Convention, including the private sector.
6. The SPI would be co-governed by the CST and the IGS, under the responsibility of the CST, and function with the administrative support of the UNCCD secretariat. The SPI could be co-chaired by one representative of the Parties and one representative of the IGS.

7. Two-way exchanges of information and knowledge would be initiated between the SPI and the IGS, between the SPI and the RSTHs, and between the IGS and the RSTHs. The SPI would provide the platform to develop synergies with the IPCC and IPBES, and with other scientific activities of the UNFCCC and CBD, for example, for joint long-term peer-reviewed assessments.

8. The COP should decide on the frequency and duration of the meetings of the SPI. The Bureau of the CST, jointly with the IGS and with the support of the secretariat, would have responsibility for organizing those meetings. The CST and the IGS, meeting in the SPI, would propose topics for future meetings of the SPI to the COP.

9. The SPI would prepare a draft work programme required to address a topic it proposes or which has been requested by the COP. The SPI will send the draft work programme through the CST to the COP (or its Bureau) for approval. Once a work programme has been approved, the SPI - or the Bureau of the CST - would send a request to the IGS, the RSTHs and other relevant bodies to implement the work programme. The SPI should consider any scientific and technical support required by the RSTHs to implement the work programme. IGS reports would be presented to meetings of the SPI and then be transmitted by the CST to the COP.

10. The Bureau of the CST could also independently identify and send requests for scientific knowledge to the SPI. The COP could also mandate the CST or its Bureau to request reports that are needed more urgently and could be produced within their discretionary budgets.

## Annex IV

### **Lists of indicative costs of existing science advisory bodies (relevant to inform on future budget estimation for the modular mechanism)**

#### **1. Budget for First UNCCD Scientific Conference (in United States dollars)**

Conference planning and organization	278,300
Working Group activities	612,500
Conference Event	262,000
Contribution of host country (Argentina) (Room hire, staff, equipment, etc.)	930,000
<b>Total</b>	<b>2,080,000</b>

Source: Boukerrou, L., Bou Kheir, R., (2010). Assessment of the UNCCD 1<sup>st</sup> Scientific Conference held in Buenos Aires on 22-24 September 2009. Contribution of host country (Argentina): SAyDS. August 2010.

#### **2. Budget of the Intergovernmental Panel on Climate Change (IPCC) (in Swiss Francs)**

##### **2012**

Governing bodies	1,603,375
Lead authors, scoping and expert meetings for Working Group reports	3,167,100
Other meetings	863,775
Other expenditures (Publications, other outreach, coordination etc.)	2,623,000
<b>Total</b>	<b>8,230,250</b>

##### **2013 (Proposed)**

Governing bodies	2,423,375
Lead authors, scoping and expert meetings for Working Group reports	3,065,775
Other meetings	567,675

Annex IV (Cont....)

Other expenditures (Publications, other outreach, coordination etc.) 3,153,000

**Total 9,212,825**

Source: Intergovernmental Panel on Climate Change, (2012). Thirty-fifth session of the IPCC. Geneva, 6-9 June 2012, IPCC-XXXV/Doc. 2 (10.IV.2012). Agenda Item 3: IPCC Trust Fund Programme and Budget.

**3. Some items of the budget for 2013 adopted by IPBES-1 (in United States dollars)**

1st session of the Plenary (6 days)	Meeting costs: 600 000, travel costs – supported: 400 000	1 000 000
1 <sup>st</sup> meeting of the Bureau (6 days)	Meeting costs: 10 000, travel costs – supported: 20 000	30 000
1 <sup>st</sup> meeting of the MEP (3 days)	Meeting costs: 25 000, travel costs – supported: 60 000)	85 000
Secretariat (20 per cent of the annual costs for professional staff, and 50 per cent of the annual costs for administrative staff		303 820
Publications, outreach and communication	Website, corporate materials, outreach events, outreach and communications strategy	100 000

Source: Decision IPBES/1/5

**4. Total Indicative Cost Estimates of IPBES 2014-2018 of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (in United States dollars)**

	2014	2015	2016	2017	2018	Total
Total Work Programme						
Low Cost Option	3 978 000	4 681 000	7 237 000	1 991 000	1 561 000	19 448 000
Total Work Programme						
High Cost Option	4 593 000	5 176 000	7 570 000	2 165 000	1 570 000	21 074 000
Plenary Meetings	0	1 000 000	1 000 000	1 000 000	1 000 000	4 000 000
MEP and Bureau Meetings	230 000	250 000	250 000	275 000	275 000	1 280 000
Secretariat (as currently established)	2 000 000	2 000 000	2 000 000	2 000 000	2 000 000	10 000 000

Source: IPBES Draft Work Programme 2014-2018. Review Draft 25<sup>th</sup> June 2013. IPBES 2013 Intersessional Process.

**5. 2012 Budget of the Science and Technical Advisory Panel (STAP) of the Global Environment Facility (GEF) (in United States dollars)**

Staff	1,078,000
Consultants	275,000
General operations	243,000
Members expenses (Support, meetings, publications etc.)	648,000
<b>Total</b>	<b>2,244,000</b>

Source: Global Environment Facility (2012). Business Plan FY13-14 and Budget, FY13. GEF/C.42/07/Rev.01. Agenda Item 14 of the GEF Council Meeting, 5-7 June 2012, Washington, D.C.

**6. Budget of the Millennium Ecosystem Assessment, 2001 – 2005 (UNEP 2006)**  
(in United States dollars)

Technical Support Units (TSU) and Co-chair Support	5,608,234
Meeting Costs	6,072,395
Sub-contracts and Consultants	3,212,695
Publications	1,191,533
<b>Total</b>	<b>16,084,857</b>
Average annual budget	4,021,214

Source: Wells, M.P., Grossman D., Navajas H. (2006). Terminal evaluation of the UNEP/GEF project “Millennium Ecosystem Assessment”. Project Number MT/FP/CP/1010-01-04. Evaluation and Oversight Unit. September 2006.