

“Science for good governance: scientific information and communication systems in the context of the United Nations Convention to Combat Desertification”

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ABSTRACT

Desertification related information is becoming more and more available through a number of Clearing House Mechanisms, Environmental Information Systems, networks, or WebPages. Those initiatives are strongly encouraged by the Article 16 and 18 of the Convention. However, too often, there is lack of a clear link between those initiatives and the implementation process of the Convention, the governance.

In order to advance the matter further, it is primordial to understand the flows of information in the context of the Convention and more specifically how this information is conveyed to and from the Committee on Science and Technology (CST). Four levels of information are addressed: National, Sub-Regional, Regional and Global and three major flows of information are identified. Scientific information should feed this process at all levels. For that purpose it is necessary to define common and strong scientific messages, not advocating, but informing policy makers about policy options and the possible impact of those options.

However, Desertification is a complex issue that needs a multidisciplinary and bottom-up approach, anchored into traditional knowledge and using modern technologies. Independent scientific networks, at all levels, should be major tools for addressing this issue, and defining and conveying the necessary messages from people to decision makers and other key stakeholders.

In this regard, Article 25 of the Convention calls for the elaboration of an international scientific network that would support the implementation of the Convention.

Keywords: Desertification, science and governance, scientific networks, UNCCD

Introduction

Juma Caletous working on the Millennium Development Goals was reporting that “*Science and technology are so central to the implementation of the Millennium Development Goals that they should be considered as the driving force behind the achievement of the goals. Keeping leaders engaged with this process means that they need to be continuously informed and updated on the latest developments in science and technology. That means that they need mechanisms for receiving scientific advice, which should be considered just as important as economic advice*” (Juma C., UN millennium project, 2005).

Information circulation systems (ICS) are major tools in order to face this challenge. Within the scientific UNCCD framework they should reflect the UNCCD specificity: an intergovernmental approach based on a bottom-up approach. The conciliation of these two characteristics, that may appear contradictory, should drive our work and be taken into account into the development of adequate ICS.

The Convention, in its article 16, specifies a framework for ICS on desertification. Information does exist. The question is how to communicate it and more specifically, in the UNCCD framework, how can it fulfil its determining role in the implementation process.

Before to advance further, it is important to know where the information is necessary and in which context, in order to define what are the needed ICS to develop science for good governance.

1. The scientific information framework of the UNCCD

1.1 The flows of scientific information

We can distinguish three major flows of scientific information within the framework of the Convention (figure 1).

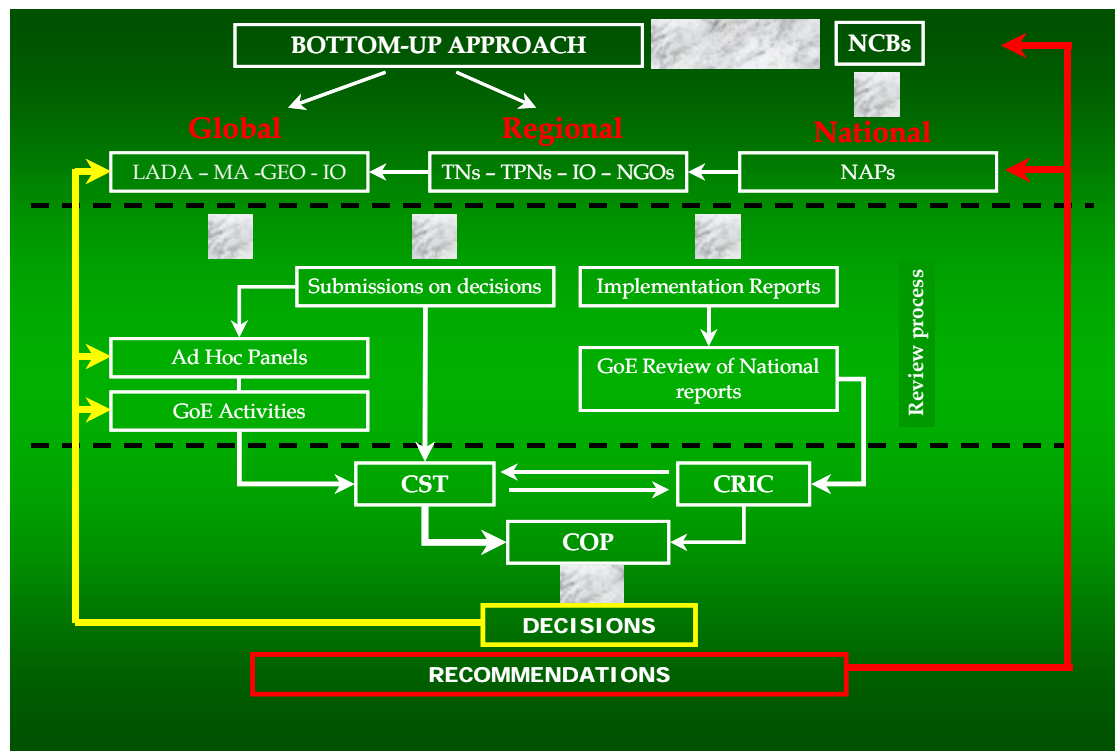


Figure 1: Scientific Information Flow Chart

1. Through the review process of the implementation reports prepared by Parties and all accredited organisations;
2. Through the submissions of reports on specific issues discussed by the CST as defined in the decisions. Country Parties and accredited organisations at national, regional and international level may be encouraged to submit reports;
3. Through the ad hoc working group of experts and the Group of Experts (GoE) activities.

The analysed information is coming from a wide range of sources including Country Parties, Non Governmental Organisations (NGOs), International Organisations (IO) and Scientific Institutions, and is coming from all levels of intervention (Local, National, Regional, and Global). Then different outputs will be delivered to the COP. Firstly decisions; these decisions will define the future work of ad hoc working groups of experts, define the programme of work of the GoE and arouse new issues for submissions. Within these decisions, recommendations will be adopted that will influence the whole process. By the end, the UNCCD logical framework should provide consensual scientific recommendations based on a broad, multi-level and multi-actor consultation.

But for this purpose all organisations and more specifically the scientific organisations, must be involved and provide necessary information and recommendations to the concerned bodies and institutions.

This means an involvement of the scientists at the national level within the National Coordinating Bodies (NCBs) and the National Action Programme (NAP) elaboration, an involvement in the Sub-Regional Action Programmes (SRAPs) and Thematic Programme Networks (TPNs) and in the international initiatives, in order to provide adequate material in the information flow. This material will be used by the ad hoc working groups of experts, the GoE and the CST for the drafting of decisions and recommendations. This means a sound involvement of scientists in the process that should be accompanied by the development of adequate ICS.

In this regard, the text of the Convention put a strong emphasis on the importance of communication of reliable scientific and technological information, and of networks (Article 6,10,12,16,18,25: see Annex 1).

1.2 Information circulation in the text of the Convention

Article 16, on “*Information Collection, Analysis and Exchange*” give a framework for ICS. Member countries shall, as appropriate:

1. Facilitate and strengthen the functioning of global network of institutions and facilities for the collection, analysis and exchange of information, as well as for the systematic observation [...];
2. Ensure that the collection, analysis and exchange of information address the needs of local communities and those of decision makers;
3. Make full use of the expertise of competent intergovernmental and non-governmental organizations;
4. Exchange and make fully, openly and promptly available information from all publicly available sources relevant to combating desertification.

The text also emphasise the importance of the property rights in the framework of knowledge exchange:

(g) [...] exchange information on local and traditional knowledge, ensuring adequate protection for it and providing appropriate return from the benefits derived from it, on an equitable basis and on mutually agreed terms, to the local populations concerned.

The article 25 put the emphasis on the creation of a global network.

To make information available and become a right for people, this info has to be conveyed. For this purpose ICS have been widely developed. Some of them were developed in the context of the Convention.

2. Examples of Information Systems addressing scientific issues in the UNCCD context

2.1 UNCCD website

The UNCCD website provides a thematic section related to scientific information.

This section presents the general documentation prepared for the COP regarding the different thematic areas addressed during the CST sessions. It also presents the activities of the CST and its Group of experts, the roster of independent experts and the results of the survey and evaluation of existing networks, institutions, agencies and bodies working on desertification.

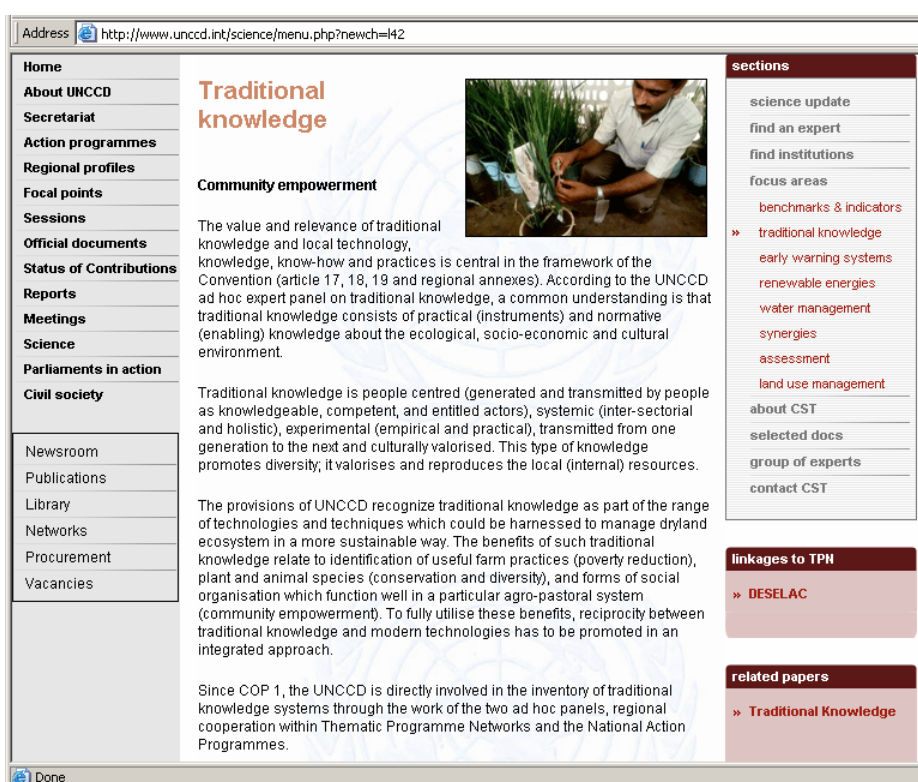


Figure 2: UNCCD website

2.2 Deselac portal

The Deselac portal, developed in the context of the Thematic Programme Network 1 for the Latin America and the Caribbean region is providing information on the implementation process and related scientific information in the region.

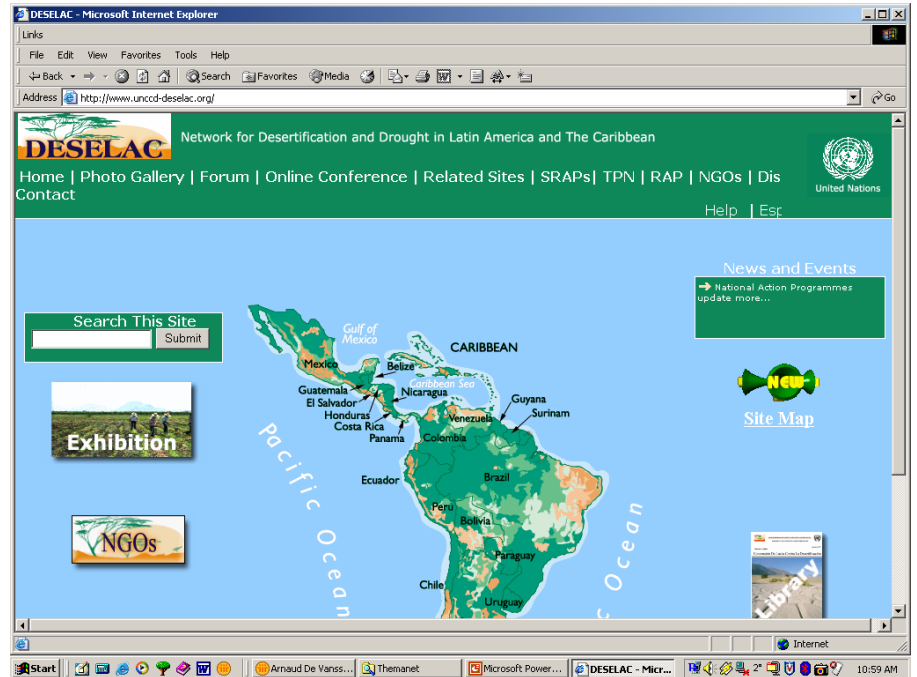


Figure 3: Deselac website

2.3 Themanet

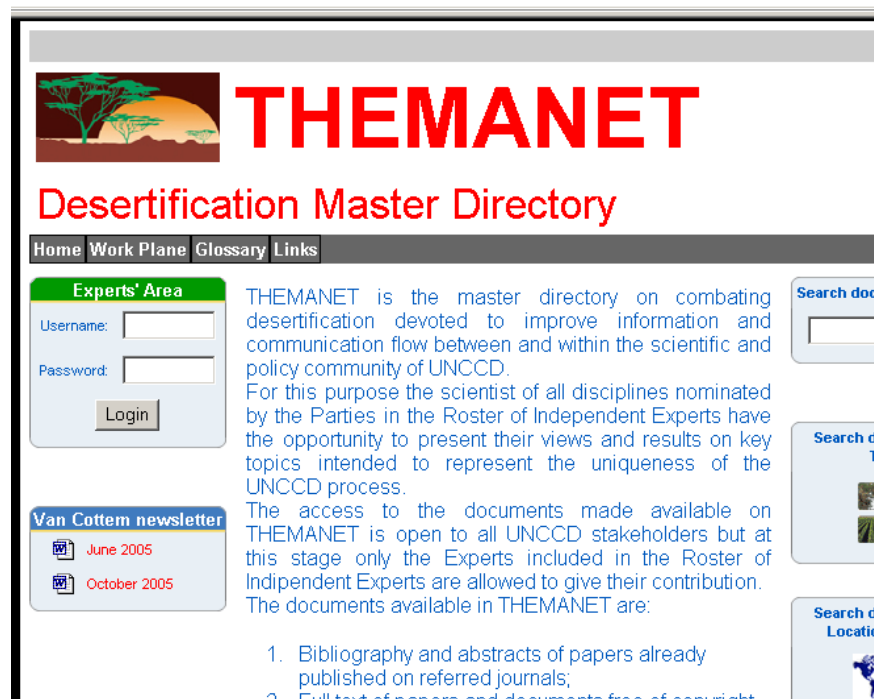
The development of an adequate scientific information system on desertification will be a major step in helping the CST and its Group of Experts in achieving this challenge. This has been underlined by the COP that included communication in the Programme of Work of the Group of Experts:

- 1.3 Develop a clear communication strategy between the activities of the Group of Experts, the end users and the research community at large;
- 1.2 Develop a web-based glossary of terms (through a UNCCD-hosted server);
- 1.3 Develop a mechanism for an interactive and thematic data/metadata network.

The main objectives of THEMANET are to:

1. implement the Information and Communication mechanism;
2. improve NCBs information and communication activities;
3. facilitate exchange data, experiences and results among NCBs;
4. facilitate efficient information flow among NCBs and the Roster of Independent Experts.

Figure 4: Themanet website



2.4 LADA virtual library

Land Degradation Assessment in Drylands (LADA) is a project lead by a consortium in which UNCCD is part. FAO is the implementing agency. On aim of LADA is to support UNCCD implementation.

Within the project, a database of information on drylands and desertification has been developed: the “Properties and Management of Drylands” virtual library (<http://www.fao.org/ag/agl/agll/drylands/index.htm>).

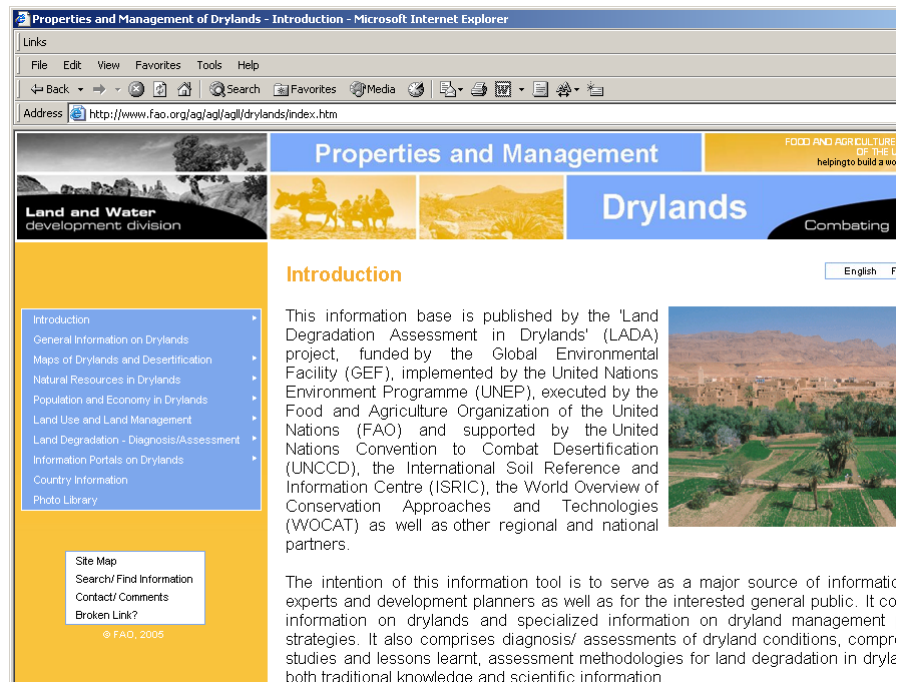


Figure 5: LADA website

The intention of this information tool is to serve as a major source of information for dryland experts and development planners as well as for the interested general public. It contains general information on drylands and specialized information on dryland management practices and strategies. It also comprises diagnosis/ assessments of dryland conditions, comprehensive case studies and lessons learnt, assessment methodologies for land degradation in drylands based on both traditional knowledge and scientific information.

This project, already references 1 500 documents online. Information comes from approximately 150 different websites and portals of institutions, organisations, organisms and projects on drylands and desertification. Information is public domain.

The LADA project and Themanet have some similarities. Options for collaboration and synergies between the two projects could be reviewed in order to enhance development opportunities and ensure a better sustainability of the systems.

2.5 The roster of independent experts network

Following decision 13/COP7, an e-mail network of the roster of independent experts has been implemented and a first e-mail has been sent. Information on the CST and GoE activities, the IYDD and progress made in the implementation process will be delivered.

2.6 A need for better coordination and circulation of information

As highlighted in the previous pages and other papers of these proceedings, numerous ICS at national, regional and international level were developed. They address more or less directly desertification. But most of those concerning desertification are under development. Therefore, we are at a critical and determining point for the coordination of those initiatives

in order to avoid duplication of initiatives and try to develop a global strategy for the ICS on desertification. This may be a major step for their sustainability and efficiency.

The different systems reviewed here are mostly providing information and do not really allow a circulation of the information. Furthermore, too often, there is lack of a clear link between those initiatives and the implementation process of the Convention, the governance. The information provided as such will not be sufficiently and/or adequately taken into account into the flows identified in the *figure 1*. Sharing scientific information is not enough. In order to reach policy makers, an adequate packaging and dissemination of the information is primordial. For that purpose a good tool can be to define common messages. The question is what kind of message should be provided and how to draft and convey them?

3. Defining the message from scientists to policy makers

3.1 Adequate research will have better chance to reach policy

In its article 17 the Convention defines a framework for the involvement of scientists in the research on the combat of desertification. This article states that member countries shall support research activities that:

1. Respond to well defined objectives;
2. Address the specific needs of local populations;
3. Lead to the identification and implementation of solutions that improve the living standards of people in affected area.

Improving the living standards of people, means community empowerment and the involvement of local communities. This and well define objectives mean the development of a demand driven research and the integration of traditional and modern technologies that cannot be achieved without strong communication between scientists, local communities and decision makers. This communication process will help to adequately define projects and activities that will directly help the communities and respond to the politician concerns.

Promoting the dialogue between scientists and decision-makers at local level points and at strategic decision points is essential. The National Action Programmes is one of these strategic decision points. In fact, prepared by the National Coordinating bodies, with all the involved stakeholders, their drafting is based on dialogue.

The Implication of the scientists in this process and at local level points could improve two points:

1. The definition of the research projects on a demand driven base. Article 17 of the convention precise that research priorities on desertification should be based on NAPs priorities;
2. The understanding and accessibility of research products for decision-makers and tradition-based end-users.

It may also allow a better integration of modern technologies with traditional technologies that is another mean to enhance the appropriation of research results.

And we know that Research carried-out with a clear focus on meeting the needs of end users will have the greatest chance of influencing policy makers (IUFRO, 2005).

Therefore, scientists are in a good position to convey messages from communities to decision makers and they can strengthen the messages by numbers, figures and maps that cannot be ignored by politicians and force concrete decisions.

3.2 Two concrete examples from Herrmann and Hutchinson, 2005

First example:

The changing understanding of the climate variability and its influence on desertification could have a major influence on political decisions. In the 1970s, internal forcing such as biophysical feedback mechanisms between land surface and precipitation (as albedo), provided the main explanation of droughts. However with the recent satellite measures, large-scale changes in STT (stratosphere-to-troposphere transport) patterns are felt to be the major driving forces that promote changes in atmospheric circulation. However, although a new understanding of climate variability has emerged, the understanding of the causes of variability is still unfolding and most probably there is no single explanation.

If internal feedbacks are judged to be the cause, there is an implicit assumption that removal of the perturbing factor (e.g. overgrazing livestock) will allow a return to the previous condition. If external forcing is embraced, there is a little that can be done to affect the occurrence of drought. If that is the cause, then the livelihood systems, on which human populations depend, must be made to adapt to that uncertainty.

Second example:

A growing body of literature gives evidence of the dominance of the livelihood approach in the debate on rural poverty reduction during the last decade. While many earlier works assume a self accelerating downward spiral between poverty and natural resource depletion, with population growth as a critical factor, this view has been questioned by a number of case studies which point out evidence of poor rural people actively improving their environments using labour-intensive conservation practices. (Cf. the counter paradigm of the MA) On the other hand, links between market prices, labour shortage, insecurity of land tenure, or diversification of incomes could be made with land degradation.

The recognition of the rational and adaptive capacity of indigenous land management practices requires that these practices be incorporated into development and environment schemes to strengthen rather than remedy them. This would imply the adoption of more democratic forms of interaction cooperation between land users on the one-side and, donor agencies and national institutions which set-up large-scale desertification measures on the other. Furthermore, the realization that creation of viable rural livelihoods no longer depends solely on agricultural activities calls for a revision of policies that were exclusively aimed at extending and modernizing peasant production in favour of policies supportive of the rural economy. Policies are needed that facilitate access to a wide range of assets to foster the construction and environmentally sustainable livelihoods.

Ms. Herrmann and Mr. Hutchinson concluded, “*Policies that affect people on the ground may be formulated largely independent of science that is current and thus may serve to degrade rather than enhance the lives of people*”.

Those two examples show that scientists are well placed for:

1. Understanding global phenomenon and their impacts on policy options;
2. Conveying messages from people to decision makers.

They also show the importance to develop interdisciplinary teams that address the issue of desertification in its whole complexity and have all necessary knowledge in order to answer to the questions of the decision makers. Those findings concerning complex problems and paradigms are crucial for taking the right decisions and they have to be communicated to the decision makers. Interesting studies do exist and are available on ICSs, however adequate

systems were not developed in order to link those messages to the implementation process. It may be difficult for a scientist alone to reach the attention of the global community and national policy makers. ICS could allow defining and communicating those messages.

3.3 Characteristics of the message

Desertification is a complex issue that needs a multidisciplinary and bottom-up approach, anchored into traditional knowledge and using modern technologies. The conclusions drawn above were deriving from a multidisciplinary analysis and assessment. In order to be even more widely accepted and supported they could be peer reviewed. Then, they could be synthesized, targeted, tailored and translated into a language that should be understandable and bearable by the decision makers.

This language should not advocate a particular viewpoint but inform about policy options and the impact of those options. Advocating usually has a negative effect on the credibility of a scientist's results, because advocacy is equated to being biased in favour of the particular viewpoint. The values that people ascribe to science and the scientific process are important (IUFRO, 2005). How scientific results are disseminated is a key part of influencing policy.

4. The way forward

4.1 Possible options

To keep a strong anchorage into a bottom-up approach as a continuous and constant preoccupation...

To define adequate problematic to be tackled with end-users and policy makers...

To answer to complex questions of the decision makers...

AND

To reflect the need of a multidisciplinary approach...

To define a common message, not advocating but reflecting the richness of the thoughts of the scientific community and providing policy options...

In the context of science for good governance for the implementation of the UNCCD...

Two tools may help achieving those challenges: scientific networks and partnerships.

- 1 Partnerships between NGOs, agencies, governmental bodies, scientists and institutions that would allow to set clear expectations, to identify the communication channels, and to identify the misunderstanding or gap of knowledge of the stakeholders that should be filled, lightened and tackled by the scientists. The National Coordinating Bodies (NCBs) (see figure 1) could play such a role at the national level.
- 2 Independent scientific networks at each level (national, regional and global) would allow designing the scientific message in itself. The best assessment occurs when scientists from several disciplines work together on an assessment, rather than work independently to produce a set of separate reports (IUFRO, 2005). Then, the networks will allow translating the message adequately (depending on the final users) and disseminating it.

For example, the efficiency of the GoE, that has to answer to those complex problems raised by the decision makers, is hardly hampered by the lack of a coordinated support by institutions agencies and bodies working on desertification.

There is a clear need to implement the article 25 of the text of the Convention that calls for the development of a network of institutions, agencies and bodies to support the implementation of the Convention. The text of the Convention itself precise that the CST should recommend ways and means to facilitate and strengthen the network that should answer to the issues raised in articles 16 to 19. And the COP should recommend operational procedures, a time frame and identify best-suited units of the network.

4.2 Links with the UNCCD process

In the context of the UNCCD those networks could be involved and intervene at different levels: the NCBs, the NAPs, the SRAPs, the RAPs the TPNs, and at the global level. They could provide information (or the message described above) for the support of the reporting process, the review process, the implementation of the different programmes, the submissions on decisions of the CST, the GoE activities and ad hoc working groups of experts. Therefore, scientific information should be able to reach and/or have a real influence on the flow of scientific information defined in *figure 1*. Furthermore, the partnerships defined above, would partly allow the necessary feedbacks mechanisms that are necessary to keep the whole process in a bottom-up approach, keeping in mind the interest of the poorer living in marginalised drylands areas.

Conclusion

Several intergovernmental conferences went back on the necessity to develop science for good governance in developing countries:

- The Doha Plan of Action' was approved at the coalition's second South Summit, held in Doha, Qatar on 12-16 June 2005. The document stresses the need for developing countries to build scientific capacity and close the technological gap between them and industrialised nations.
- Arab leaders have agreed to collaborate more closely on research and increase their funding of science and technology. Summit of the 22-member nations of the Arab League, March 2006.
- A ten-year plan to promote science and technology in the Muslim world was endorsed by the senior officials of 57 Islamic states in Mecca in December 2005.
- European Union leaders have agreed to promote science and technology in Africa through networks of universities and centres of excellence, December 2005
- At Africa's second ministerial meeting on science and technology, Senegal's president called on the continent to become an active participant in research, September 2005.

Achieving this will depend in part on increased scientific cooperation between developing countries, including setting up networks of researchers and institutions says the Doha plan. This means also the development of adequate means for transferring the findings of the scientific communities to the decision makers. In the context of research on desertification, tools to achieve this challenge are the development of adequate capacities for the circulation of information such as networks and partnerships at all levels (national, regional and global).

Scientific information has been too often not adequately taken into consideration in the process. However, important efforts on ICS have been made in the last few years. It is time to go further and make this information properly circulate.

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ANNEXE 1

Articles of the text of the Convention related to circulation of scientific and technical information and the development of adequate networks

Article 6

Obligations of developed country Parties

(e) promote and facilitate access by affected country Parties, particularly affected developing country Parties, to appropriate technology, knowledge and know-how.

Article 10

National action programmes

They shall [...]

e) promote policies and strengthen institutional frameworks which develop cooperation and coordination, in a spirit of partnership, between the donor community, governments at all levels, local populations and community groups, and facilitate access by local populations to appropriate information and technology;

Article 12

International cooperation

Affected country Parties, in collaboration with other Parties and the international community, should cooperate to ensure the promotion of an enabling international environment in the implementation of the Convention. Such cooperation should also cover fields of technology transfer as well as scientific research and development, information collection and dissemination and financial resources.

Article 16

Information collection, analysis and exchange

The Parties agree, according to their respective capabilities, to integrate and coordinate the collection, analysis and exchange of relevant short term and long term data and information to ensure systematic observation of land degradation in affected areas and to understand better and assess the processes and effects of drought and desertification. This would help accomplish, *inter alia*, early warning and advance planning for periods of adverse climatic variation in a form suited for practical application by users at all levels, including especially local populations. To this end, they shall, as appropriate:

(a) facilitate and strengthen the functioning of the global network of institutions and facilities for the collection, analysis and exchange of information, as well as for systematic observation at all levels, which shall, *inter alia*:

(i) aim to use compatible standards and systems;

(ii) encompass relevant data and stations, including in remote areas;

(iii) use and disseminate modern technology for data collection, transmission and assessment on land degradation; and

- (iv) link national, subregional and regional data and information centres more closely with global information sources;
- (b) ensure that the collection, analysis and exchange of information address the needs of local communities and those of decision makers, with a view to resolving specific problems, and that local communities are involved in these activities;
- (c) support and further develop bilateral and multilateral programmes and projects aimed at defining, conducting, assessing and financing the collection, analysis and exchange of data and information, including, *inter alia*, integrated sets of physical, biological, social and economic indicators;
- (d) make full use of the expertise of competent intergovernmental and non-governmental organizations, particularly to disseminate relevant information and experiences among target groups in different regions;
- (e) give full weight to the collection, analysis and exchange of socio-economic data, and their integration with physical and biological data;
- (f) exchange and make fully, openly and promptly available information from all publicly available sources relevant to combating desertification and mitigating the effects of drought; and
- (g) subject to their respective national legislation and/or policies, exchange information on local and traditional knowledge, ensuring adequate protection for it and providing appropriate return from the benefits derived from it, on an equitable basis and on mutually agreed terms, to the local populations concerned.

Article 18

Transfer, acquisition, adaptation and development of technology

1. The Parties shall, in particular:

(a) fully utilize relevant existing national, subregional, regional and international information systems and clearing-houses for the dissemination of information on available technologies, their sources, their environmental risks and the broad terms under which they may be acquired;

2. The Parties shall, according to their respective capabilities, and subject to their respective national legislation and/or policies, protect, promote and use in particular 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 and their potential uses with the participation of local populations, and disseminate such information, where appropriate, in cooperation with relevant intergovernmental and non-governmental organizations;

(c) encourage and actively support the improvement and dissemination of such technology, knowledge, know-how and practices or of the development of new technology based on them;

Article 19

Capacity building, education and public awareness

1. They shall promote, as appropriate, capacity- building:

(g) through cooperation, as mutually agreed, to strengthen the capacity of affected developing country Parties to develop and implement programmes in the field of collection, analysis and exchange of information pursuant to article 16;

3. The Parties shall cooperate with each other and through competent intergovernmental organizations, as well as with non-governmental organizations, in undertaking and supporting public awareness and educational programmes in both affected and, where relevant, unaffected country Parties to promote understanding of the causes and effects of desertification and drought and of the importance of meeting the objective of this Convention. To that end, they shall:

(b) promote, on a permanent basis, access by the public to relevant information, and wide public participation in education and awareness activities;

4. The Conference of the Parties shall establish and/or strengthen networks of regional education and training centres to combat desertification and mitigate the effects of drought. These networks shall be coordinated by an institution created or designated for that purpose, in order to train scientific, technical and management personnel and to strengthen existing institutions responsible for education and training in affected country Parties, where appropriate, with a view to harmonizing programmes and to organizing exchanges of experience among them. These networks shall cooperate closely with relevant intergovernmental and non-governmental organizations to avoid duplication of effort.

Article 25

Networking of institutions, agencies and bodies

1. The Committee on Science and Technology shall, under the supervision of the Conference of the Parties, make provision for the undertaking of a survey and evaluation of the relevant existing networks, institutions, agencies and bodies willing to become units of a network. Such a network shall support the implementation of the Convention.

2. On the basis of the results of the survey and evaluation referred to in paragraph 1, the Committee on Science and Technology shall make recommendations to the Conference of the Parties on ways and means to facilitate and strengthen networking of the units at the local, national and other levels, with a view to ensuring that the thematic needs set out in articles 16 to 19 are addressed.

3. Taking into account these recommendations, the Conference of the Parties shall:

(a) identify those national, subregional, regional and international units that are most appropriate for networking, and recommend operational procedures, and a time frame, for them; and

(b) identify the units best suited to facilitating and strengthening such networking at all levels.