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IMPROVING THE EFFICIENCY AND EFFECTIVENESS OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY

Preliminary report of the Group of Experts

Note by the secretariat*

1. The Group of Experts (GoE) met in Bonn, Germany, from 2 to 7 June 2003, to review in depth the results and the activities carried out by its members during the period from November 2002 to May 2003.

2. In accordance with the agenda (annex I), presentations have been made by each coordinator on the following topics:

- Assessment of desertification on the global, regional and national levels;
- To help in providing an updated World Atlas of Desertification;
- To assist in providing a science plan for land degradation research;
- Poverty and land degradation: an assessment methodology;
- To help in developing a web-based glossary of terms relevant for desertification;
- To reinforce a mechanism for an interactive and thematic data/metadata network;
- To assist in developing a common benchmark and indicators system for monitoring and evaluation of desertification;
- Case study: Regional diagnosis for LAC on indicators and monitoring systems;
- Short-term early warning systems.

3. The secretariat has made these presentations available on its Internet Web site at the following address: http://www.unccd.int.

* The submission of this document was delayed due to late date of the second meeting of the Group of Experts at which the report was agreed upon.

4. This preliminary report of the GoE contains the summaries of presentations and their conclusions and recommendations and, finally, the attributes focusing on the current state of knowledge, the extent and scale of impact, and the opportunities for mitigation and policy implications.

5. The list of participants is given in annex II.

CONTENTS

I. SUMMARIES, CONCLUSIONS AND RECOMMENDATIONS OF THE PRESENTATIONS

Task 1.1: Assessment of desertification on the global, regional and national levels
(Coordinator: Takeuchi)

Summary

1. An assessment as applied to drought and desertification is understood by the GoE to be a quantitative and/or qualitative physical, socio-economic, and/or biological characterization of various aspects of drought and desertification taken over space and time. The assessment of drought and desertification is a methodological framework for developing guidelines for countermeasures to be used when past and present conditions pass a threshold, beyond which environmental fluctuations cause serious damage to the ecosystems. Each threshold should be derived from the monitoring of natural and anthropogenic impacts fluctuating from seasonal to decadal time scales, and from local to global spatial scales.

2. On reading the reports open to the public on the UNCCD Web page, we found that only a few national action programmes and national reports proposed indicators, benchmarks, assessments and modeling. The Gambia, India and Kenya discussed benchmarks. India, Kenya, Mongolia and Uzbekistan discussed modeling.

3. The proposal of the benchmarks and indicators system for desertification monitoring and assessment on the basis of the activity of Thematic Programme Network (TPN 1) in the Asia region, described the benchmarks as follows: “Benchmarks are the baseline that serves a starting point for evaluation and monitoring and thus provide the point of difference from which the land starts to degrade/improve. Benchmarks can be determined by identifying non-degraded ecosystems under the same agro-climatic zone and natural conditions.”

4. The report mentioned that the indicator system should include the four aspects - pressure, state, desertification impact and implementation of management and interventions - to which the PSR (Pressure - State - Response) and DPSIR (Driver - Pressure - State - Impact - Response) frameworks seemed to be applied.

5. For the selection of indicators at the broader scale, we have to depend on satellite imagery and statistical data. On the other hand, at a local scale, it is important to collect field data from field surveys and questionnaires. There exists a certain relationship between the hierarchy and the derived data. To realize drought and desertification assessment it is necessary to start with the good use of existing data.

Conclusions

6. The recognition of four general conclusions can be drawn: 1) a need to broaden the state of knowledge regarding desertification across various regions, 2) a need to assist in the development of a set of common benchmarks (common reference; e.g., FAO, OECD, and others) and indicators (system), for monitoring and assessment (expected to be completed by 2006) based on relevant communication and exchange, 3) a need for applying and validating models applicable for the

assessment of land degradation in a biophysical and socio-economic context, and 4) to evaluate the effectiveness of implementation.

Recommendations

7. The Possible Work Plan for Assessment by the GoE states that: “The group might wish to establish specific baselines (or benchmarks) using an appropriate baseline year.” It is urgent to monitor and evaluate the trend of the indicators of pressure, state, impact and implementation in connection with those in a particular year. The CST should intensively discuss this point in relation to COP 6. The NAPs reviewed in this report obviously lack such a viewpoint.

8. To solve this problem, the trend data should be collected intensively, and model stations for monitoring the trend of indicators should be established. Such stations must also contribute by examining the methodology of the collection of local data.

9. Modeling for drought assessment at global and regional levels has been established. In the future, it is necessary to develop them into holistic assessments by incorporating socio-economic factors and population conditions as well as political and religious conditions.

10. In developing countries, establishment of drought assessment at national and local levels is constrained by low economic and technological levels. Especially at the local level, getting access to information itself is difficult. The development of a methodology to solve these problems is an important task. The more local the target scale becomes, the more important it is to analyze natural, and human (particularly social) factors, which are distinctly different from those at a global scale. Therefore, the development of suitable indicators for the local level is required.

11. Establishment of modeling for assessment at the national and local levels depends on solving difficult problems such as occur in the collection and analysis of data caused by the low economic and technological levels in developing countries. Financial and technological assistance from developed countries to developing country is a critical need that must be considered.

12. In terms of desertification assessment at a global level, improvements of the scientific accuracy of such programmes as GLASOD, as well as relevant methodologies, are particularly important. The global evaluation of land and water resources is especially necessary to achieve the objective of understanding land degradation.

13. CILSS in the western part of Africa, and OSS and TPN 1 in the Asian region are examples of desertification assessments at a regional level. However, they are limited by the lack of currently suitable indicators. More effort is needed to develop benchmarks, to build models by combinations of indicators, and to evaluate the effectiveness of the implementations by simulations.

14. A general model including land and human information should be applied. Each regional group should discuss and build specific models at regional levels, based on the global model.

15. Many of the experts agree that there are many issues which need to be taken into consideration in any complex evaluation or assessment of drought events. Drought threat assessment has to deal with natural site-relevant factors and agricultural production practices as well as socio-economic evaluation of agricultural production and its impact on regional

development. Certain aspects of land use and yield capacity might impose a threat of drought to one region but could be a favored impact for another region.

16. When expressing the result of an evaluation, there are two main methods that can be followed: 1) creating an integrating indicator taking into account all the above mentioned aspects, or 2) finding a method for combining different factors and data on an areal basis (e.g. using maps for the illustration of the spatial distribution of the different factors and putting these maps together with GIS techniques). In the case of development of drought sensitivity maps in a country or region we prefer the second way, but intensive research work is needed.

17. Status indicators and benchmarks as well as implementation indicators and benchmarks correspond to respectively to the condition and trend assessment, and the response assessment. The MA (Millennium Ecosystem Assessment) proposal of the necessity of the scenario assessment is noteworthy. Scenario assessments, which can be used to analyze how possible policies might affect future patterns of land use, can provide useful information for decision making when considering various alternatives. Despite evaluation based on the prediction of the condition and trend assessment, in which large uncertainties may exist, it provides useful information for users to help decide whether a policy should be supported or not, and by understanding the range of the prediction and the potential consequences of the decision.

Task 1.2: To help in providing an updated World Atlas of Desertification
(Coordinator: Vermes)

Aim of the task

Starting with and on the basis of the present World Atlas of Desertification, published in 1997 by the United Nations Environment Programme (UNEP), second edition, compiled by Nick Middleton and David Thomas) the main aims of the task were determined at the Hamburg meeting of GoE as follows:

- review the current status of mapping and the Atlas itself
- determine the criteria on what basis the new Atlas can be accomplished
- prepare recommendations for the terms of reference and development of mapping the vulnerability/sensitivity of areas by drought and desertification

Summary and recommendations

The World Atlas of Desertification, edited by UNEP in 1997, is an important and considerable trial to summarize global information on the process of desertification and land degradation in the drylands, to present an overview on these lands, and to draw attention of all people and governments in the world to the problems accompanying with desertification. Because of the lack of accurate and reliable data, the lack of clear determination of aims and objectives, and because of the originally selected global approach, there are some limitations in the use of this Atlas, and there is a definite need for revising and further development of it. Taking into account the overall criticism of the existing Atlas, and also the suggestions of experts in the field of assessment and mapping of drought and desertification, the followings should be discussed and recognized.

a) As a first step it is recommended to identify the *target audience* for the Atlas and to elaborate the mechanism for dissemination. Accessibility is an important consideration.
b) The *objectives* of compilation and constructing a new edition of the World Atlas have to be determined clearly before the revision work will start. The well settled aim of the Atlas will influence or even determine the approach, the scale, the method of construction, and result in a better defined and more effectively used publication.
c) A new and separate *methodology* of assessment and illustration of drought and desertification should be worked out, based on more accurate local databases and national scale of evaluation, and using a bottom-up type of construction.
d) Complexity of the topic and influences of many aspects should be taken into consideration, therefore it is necessary to find out a *method for the combination of the different factors and data* on an areal basis (e.g. using maps for the illustration of the spatial distribution of the different factors and put these maps together with the help of the GIS techniques).
e) A revision and possibly new *determination of basic terms and concepts* is urgent, especially making distinction between drought and desertification, and a set of indicators (indexes, benchmarks) should be selected in both cases with the help of which the evaluation and expression of the main processes or results could be made.
f) One of the main drawback of the existing World Atlas of Desertification is that paper cartography in general is quite static and become quickly obsolete, therefore it is strongly recommended to use a *more GIS-based approach*. According to the opinion of different experts the role of GIS should be central for mapping from several practical and data-management points of view.
g) For creating the new concept and establishing a new methodology of assessment and mapping of desertification and drought sensitivity, a smaller *ad-hoc team should be organized* in the frame of the Group of Experts with the participation of the coordinators of the tasks 1.1, 1.2, 1.4, 1.5, 1.6, 1.8 and 1.9. This ad-hoc team has to prepare a second progress report answering all the above-mentioned problems and work out a proposal for the further development of assessment and mapping processes of desertification and drought. Concrete work plan of the ad-hoc team could be elaborated after the second meeting of GoE in Bonn.
h) Altogether 30 expert-months and other costs are needed as a basis for financing the work of the ad-hoc team.
i) The Group of Experts supports the efforts of European countries to construct and draw the *European drought sensitivity map,* and promote the acceptance of the project proposal having been prepared on this topic and sent to the European Union FP6 Research and Development Programme.

Task 1.3: To assist in providing a science plan for land degradation research
(Coordinator: Folorunso)

Introduction

Following the constitution of the Group of Experts (GoE) by the Committee on Science and Technology, the GoE held its inaugural meeting on 4- 7 November 2002 in Hamburg, Germany. The main objective of the first meeting of GoE was to review the Work Programme of the Group and to identify tasks that will be executed over a 4-year-period.

A major output of the first meeting of GoE was a Planning Matrix covering the period 2002 to 2006. One of the tasks contained in the Planning Matrix is the "Development of a Science Plan for Land Degradation Research" (Task 1.3). Consequently, the GoE constituted a Working Group to address this task.

Membership of the working group

Prof. Dr. Olatunji A. Folorunso, Coordinator
Prof. Dr. Laszlo Vermes, Member
Prof. Dr. Lixian Wang, Member

Terms of reference

The following terms of reference were given to the Working Group by the first meeting of GoE:

- To review and prioritize current research activities (2003)
- To identify and prioritize new research needs (2004)
- To identify sponsors for international and regional programmes (2005)
- To draw up a comprehensive report for submission to CST (2006)

Activities so far

The nature of the assignment requires that information be collected from the different countries and regions to provide examples of completed and ongoing research. Consequently, two different types of questionnaires were drawn up to facilitate collection of relevant information.

1. Review and Prioritization of Current Land Degradation Research Activities

The first questionnaire, which was designed to collect information to facilitate the "Review and Prioritization of Current Land Degradation Research activities" requests for the following information:

- Title of research programme
- Implementing agencies/institutions
- Research objectives
- Commencement and completion dates
- Funding agencies and funds committed
- Major findings
- Constraints to implementation

This questionnaire was sent to all members of the GoE and responses have been received from Africa, Asia and Central and Eastern Europe. A total of 50 projects have been listed to date distributed as presented in Table 1.

Table 1. Distribution of land degradation research activities

Region	**Country**	**Number of projects listed**
Africa	Nigeria	4
Asia	Japan	20
CEE	Hungary	26
CEE	Bulgaria	3
Total		**50**

Various land degradation research activities have been grouped into the following categories:

- Ecology
- Technology and Management
- Economy
- Sociology

Based on the above classification, the distribution of current land degradation research activities is presented (Table 2).

Table 2. Classification of current land degradation research activities by region

Category	**Region**				
	Africa	**Asia**	**CEE**	**LAC**	**WEOG**
Ecology	1	4	-	-	-
Technology and management	3	16	26	-	-
Economy	-	-	-	-	-
Sociology	-	-	-	-	-
Total	**4**	**20**	**26**	**-**	**-**

2. Identification and prioritization of new research needs (Science Plan)

The second questionnaire designed to facilitate collection of relevant information requests for the following information:

- Identified gaps in knowledge
- Proposed research themes to address gaps
- Research objectives
- Level of funding required
- Proposed funding agencies
- Implementing and collaborating agencies

It is expected that this questionnaire will be sent to members of GoE later in the year 2003. The results of this survey will provide examples of suggestions from persons involved in research to combat desertification.

Conclusion

It would be impossible to compile information on all completed and ongoing research, thus the current information could be summarized as examples only. Future submissions should be added to the compilation. Due to communication difficulties, responses received from countries are incomplete.

Recommendations

The discussion after the presentation of the report on this task contributed to the following recommendations:

- The development of a Science Plan is the key result expected of this Working Group and the GoE as a whole. Consequently, actions should be initiated on the second and third TORs immediately (earlier than scheduled). In this connection it is recommended that the working group should convene a meeting at Havana to work out modalities for developing a science plan.

- The Science Plan must provide a Research Vision that will support efforts to combat desertification at all levels and not simply to promote more science as an end in itself.

Tasks 3 and 1.6: Poverty and land degradation: an assessment methodology
(Coordinators: Ornas, Leon)

Summary

This paper is about developing a methodology to assess vulnerable situations in arid and semi-arid lands where poverty and land degradation combine. This document does not contain a research proposal, since the proposed method is aimed at compiling information from successful experiences at community level and synthesize it through the utilization of a set of indicators that can be derived in a simple and easy-to-apply fashion. The central objective of this work is to provide decision makers with tools to address the central problem of poverty in areas affected by desertification. These tools could be derived from on-going or past successful development, training, or research projects.

The approach is based on the screening of some successful community-level projects that address issues that relate to sustainable development in drylands, and will be assessed for their capacity to prevent/mitigate poverty and land degradation. A similar approach will be developed for the assessments of knowledge, impact and policies. With all four approaches taken together a set of core indicators can be derived and applied on specific areas. This procedure will be of great help in ranking projects and policy measures and therefore in the implementation process of the UNCCD as it addresses poverty and land degradation.

Conclusions

The following is a list of preliminary conclusions that may also be considered as a list of steps needed to establish vulnerability profiles at local levels in order to assess and take actions regarding the poverty/land degradation interface:

- The proposed method needs further elaboration before its application. The aim is to set up a principle for information management compiled from training, development or research projects dealing with poverty reduction, land degradation, and vulnerability.
- First priority concerns poverty. Information management must be carried out at local levels because the goal is to establish coherence in indicator-use through testing and evaluation.
- As far as land degradation benchmarks and indicators go, the intention is to interact with the group ascribed to these issues.
- We assume that suitably detailed indicator information is available. If not, targeted interaction between work groups is needed, aiming at the formation of a suitable set of indicators. The output is a technique to establish a set of land degradation indicators at project level.
- Whichever path is available, the aggregate set of indicators will be assessed through local level evaluation. The output is a proposed set of indicators with a quality and quantity side.
- The quality and quantity characteristics of an indicator are ascribed values (the authors have developed a specific methods). They are combined into scores that can be represented graphically.
- By ascribing weights to the indicators different vulnerability matrixes are established.
- The vulnerable situations depicted in a diagram/matrix provide different level decision-makers with simple elements to help them address the problem of poverty and degradation.
- Once tested, the approach is used in order to provide a typology set of vulnerability profiles.
- With the implementation of this methodology, the authors believe they are addressing several of the elements listed in the Planning Matrix prepared by the Group of Experts meeting in Hamburg (November 2002): i.e. 3.1, 3.2, 3.3; and 1.6 (with the corresponding working group).

Recommendations

- Active interaction should be established with the group dealing with biophysical indicators in order to establish synergy and complement perspectives.
- Active interaction is also needed with national focal points in order to assess the existence of successful stories from which to derive indicators.
- The following work plan is suggested:
    - Work out practical details of the approach. Action: 2 persons, 2 months each during 2003.
    - Interact with the group working on land degradation indicators. Action: Part-time input during the years 2003 and 2004 (2 persons, 3 months each).
    - Test indicators at local community levels in two countries during 2004. Action: brief fieldwork survey or participatory rural action together with national focal points (2 persons, 4 month each).
    - In connection with the testing: Action: Training of national evaluators (2 persons, 1 month each).

- Disseminate information (1): within the activity. Action: Use the proposed interactive data network in 2005 for internal information dissemination between national focal points (2 persons, 3 months each).
- Disseminate information (2): with stakeholders. Action: national workshops in 2006 with local and national stakeholders. Feedback of findings is given to communities and project management (2 persons, 1 month each).
- Included in the feedback: Action: rapid appraisals of state of knowledge, impact, mitigation and policy implementation, carried out in 2006 (2 persons, 3 months each).
- Final reporting in 2006. Action: Report writing (2 persons, 4 months each).

Task 1.4: To help in developing a web-based glossary of terms relevant for desertification
(Coordinator: Debicki)

Summary and conclusions

1. Among many recommendations made by Parties and relevant organizations on the work programme of the Group of Experts (GoE) of the CST, one can often find statements that the GoE should develop and make available to all interested users appropriate mechanisms and tools to communicate and disseminate scientific knowledge on desertification and land degradation in a manner accessible to all. This should also allow further systematization, harmonization and updating of relevant information.

2. Based on this mandate, the GoE, at its first meeting in Hamburg, formulated within the main theme "Assessment of desertification and land degradation" two specific tasks which fulfill the requirements of the above recommendations, i.e. task 1.4: "Help in developing a web-based glossary of terms relevant for desertification" and task 1.5: "Reinforce a mechanism for an interactive and thematic network to exchange information (THEMANET)".

3. From the technical point of view, that is having contemporary software and hardware available, the creation of an online glossary of terms is not difficult. But taking into account the role the glossary should play, the task itself and its realization is not so easy.

4. Once the first compilation of available and frequently used terms and definitions is completed, all the collected materials should be evaluated from the viewpoint of the scope of the Convention. To do this, specific criteria of selection should be applied to them. Having in mind the purpose of the UNCCD Online Glossary, a set of criteria can be taken, which ensure that the content of glossary will be interesting not only for researchers or those who are familiar with the provisions of the Convention, but also for many other possible viewers and observers of the problems presented on the UNCCD Web site.

Recommendations

5. The selection criteria should be focused on the degree of relevance of a given term for the Convention. Thus, a hierarchical classification of the terms in respect to their relevance can be created as follows:

- terms of principal importance for the Convention,
- terms very important for specific tasks realized under the scope of the Convention,
- terms of supplementary or additional information on specific problems,
- explanatory terms, important e.g. for educational purposes, informative terms, explaining e.g. acronyms.

6. One can also look into the compiled set of terms from the view point of their applicability for various users, e.g. terms specific for science and scientific purposes, for education, policy makers, socio-economic aspects of land degradation, etc. Yet another approach can be formed by the criteria, whether the term or definition was already published or it is still under discussion and thus, it can be placed in a special site for further consultation, to reach a consensus.

7. It is noteworthy to stress that any definition written in full text, withdrawn or cited from other published materials or having authorship of other author, should be cited in accordance with copyrights. It is also important to note that this information should be placed under the quoted definitions, and even more; if it is in an electronic version or available in another database, the proper link should be given below, so that anybody interested may have easy access to an original text or source of information. When appropriate and agreed with the author, also acknowledgements of any other individual contributions to the glossary can be highlighted.

8. The above statements lead us to a suggestion that the UNCCD Online Glossary database should contain terms and definitions relevant for desertification and land degradation after extensive checking, followed by supervision of the CST for agreement regarding definitions to avoid potential difficulties. It also seems that the flow-chart or, in other words, procedures for acceptance of terms and definitions before being placed at the Online Glossary is important. The proposed procedure ensure that any term or definition prior to placement on the UNCCD Web site is carefully verified and accepted. This will also help further translations into other languages in future.

9. As far as design and organization of the Glossary is concerned, it is advised that it should follow the style and design of the main website of the UNCCD, managed by the secretariat. Also all technical issues can be solved there, since both software and hardware are already available. There will only be a need for regular consultancy with CST and experts to update the Glossary and to make it manageable, by ensuring updated software and hardware, in case the Online Glossary will become rich in terms, definitions, etc.

10. It is suggested that a new Online Glossary will be located directly on the main page of the website. It is also advised that the CST Bureau, in consultation with the UNCCD secretariat, will take the necessary actions to improve the Glossary.

11. This will ensure further development of the Glossary and allow to develop multilingual UNCCD Online Glossary in 6 United Nations languages. After that step, there should also be opened a possibility of disseminating the know-how and technology to create national bases of online glossaries by the country Parties.

12. It is advised that the two proposed thematic databases, i.e. UNCCD Online Glossary and a thematic network to exchange information (THEMANET) should be placed and coordinated within the UNCCD secretariat. The CST should give the mandate to the secretariat to implement the Glossary.

Task 1.5: To reinforce a mechanism for an interactive and thematic data/metadata network
(Coordinator: Sciortino)

Mandate of the Group of Experts

The Group of Experts should develop a mechanism, such as a thematic data net, which would facilitate coordination activities and exchange of data, experience and results, to ensure sufficient information flow between national coordinating centres (NCC) in the period between Conferences of the Parties.

Motivation and scope

Diffusion of knowledge and dissemination of information play a central role in achieving the ultimate objectives of the UNCDD. Even if some articles of the Convention specifically address the issues of collection and dissemination of information, analysis and exchange, education and public awareness, very poor attention and resources have been devoted to these kinds of activities up to now.

A wider dissemination of proper and easily accessible information and scientific knowledge will also contribute to facilitate activities and exchange of data, experience and results, to ensure sufficient information flow between national coordinating centres during the period between Conferences of the Parties.

An initiative involving all the Parties of the Convention aimed at filling information gap is deemed opportune. At this regards, a *Mechanism for a thematic network to exchange information (THEMANET)* about the status and the progress in combating desertification in the affected countries could represent an important tool to facilitate coordination activities and exchange of data.

In this network, information will be available in an standardized/accessible format.

The basic idea of the network is to establish a national node to collect and organize the available information on drought and desertification. The network will improve the information flow among NCC.

General organization of the THEMANET

Each national node could be managed by a coordinator to be appointed.. The THEMANET coordinator should be responsible for collection of national information and data and their input into the network.

The Group of Experts recommends to the CST that the functioning of the network be evaluated during its regular sessions.

Integration with other projects and activities

The GoE recognizes that a number of existing networks are collecting and disseminating information but they are not addressing directly the NCC of UNCCD. Of course links to these existing networks should be established.

Goals to be achieved

The THEMANET has three main goals:

1. to facilitate coordination of activities of the NCC;
2. to exchange data experiences and results among these centres;
3. to facilitate sufficient information flow during periods between COP.

1. Network development

Creating a network of national coordinating centres requires the identification of national coordinators for the organization and managing of the nodes. The GoE advises that the layout and functioning of the web site should designed and implemented by a network manager at the level of the CST unit within the secretariat based on guidance and recommendation of the GoE. The CST staff member should be also responsible for the management of the online glossary.

2. Information exchange

Each national node could be organized into several sections:

- *News:* recent information on draught and desertification in the country.
- *Events:* information (date, place, title, contact details, etc.) about related events and meetings at national level.
- *Press:* highlights concerning desertification topics.
- *National background information*: Description of the relevance of the phenomenon for each country including biophysical and socio-economic information useful to the understanding the ongoing processes. Background information should include maps, data and small texts illustrating the desertification context according to agreed terms of reference.
- *Links to other related sites*: links to websites and web resources that are relevant to implementation of the UNCCD.
- *Good practices* and success stories about combating desertification and mitigating the effect of drought .
- *Scientific documents*: construct a database about scientific documents containing title; author(s); abstract (in UN languages); institution; etc.
- *Metadatabases* should hold information on data, indicators and technical information on desertification and related topics.
- *Projects* description (project name; research programme; thematic priorities; coordinator(s); abstract; keywords; objectives; etc.) about both scientific and implementation projects.

Promotion of THEMANET at national level:

- Establish contacts within the national experts community and other stakeholders;
- Disseminate information on available expertise, projects and activities dealing with desertification at national level;

- Compile an inventory of existing activities, databases to be included in the meta data base of the THEMANET;
- Involve the following stakeholders and collect their views and needs:
  - Governmental institutions
  - Focal points of other UN environmental conventions
  - Authorities (local and national level)
  - Researchers
  - NGOs
  - Private sector (industry and others)
  - International organizations
  - Media representatives
  - Farmers' organizations

3. Cooperation between NCC

Exchange of data and information, a more precise knowledge of the desertification matters at local level, together with a facilitate data access are the premises to stimulate cooperation actions between developed and developing countries and launch ad hoc initiatives.

Recommendation

Adopt the following timetable and steps to launch THEMANET:

1. Discussion and finalization of the THEMANET proposal in the GoE meeting (2-7 June 2003)
2. Submission of the proposal to CST (26-28 August 2003)
3. Draft a decision for COP 6 to:
   a. Give mandate to the GoE to work out the Work Plan, including costing of the project and financial support to NCC, timetable for the launching of THEMANET (2003-2004).
   b. Request UNCCD secretariat to mobilize resources.
4. Submission of the Working Plan to the COP Bureau for approval through the CST Bureau for endorsement (within the first semester of 2004).
5. Submission by UNCCD secretariat to appropriate mechanisms of funding (GEF, EU programmes, other agencies).

Task 1.6: To assist in developing a common benchmarks and indicators system for monitoring and evaluation of desertification
(Coordinator: Abraham)

Summary, conclusions and recommendations

1. The objective of the present task is to assist in developing a common benchmarks and indicators (B&I) system for monitoring and assessment of desertification.

2. Within the framework of the UNCCD and especially in its CST, consistent efforts have been made in relation to B&I. Among the "ad hoc" groups created was one charged with the review of

impact indicators and their application to NAPs, SRAPs and RAPs. There are also indicators, which exist in other conventions and in different United Nations organizations. Numerous B&I proposals have been developed. However, at present, no agreement has been obtained about the use of B&I and discrepancies about the achievements of these concepts are present.

3. The main activities of this report entail a preliminary diagnosis of state of art in the use of B&I; the improvement and adjustment of this diagnosis at international level; contributions to the development of a common system of B&I assessment and monitoring desertification; a work programme and a work methodology.

4. The analysis shows that, among other characteristics, there is no consensus on terminology and concepts on B&I. Today's knowledge about the processes of desertification is fragmented and in many cases, not suitable for comparison. This situation is mainly due to the fact that existing studies have not been defined, developed and measured according to B&I. Indicators, in the majority of cases, are not operational, simple, practical and decision-maker oriented.

5. The analysis framework of these indicators (i.e. pressure, state and response); the methodologies used for their gathering and their integration in assessment and monitoring models; the identification of the user requirements; and their application experiences are not well known elements. These links become even weaker when we try to find a relationship with the EWS to prevent the effects of drought and desertification.

6. There is a considerable predominance of indicators based on thematic aspects, especially biophysical ones (soils) and deficiencies in the links between them and socio-economic indicators. Since the attention paid to biophysical and socio-economic indicators has been unbalanced, it is difficult to use them in one holistic Monitoring and Evaluation System (M&E).

7. There is a confusion of scales and levels. There are practically no cases that use the temporal dimension (scale) for understanding the causes, dynamics and trends of desertification.

8. There are no global inventories or networks, not even at national and regional levels, of the measuring point or centers in order to ensure accurate monitoring of desertification.

9. There is a gap between "scientific" and "empirical[1]" indicators used by civil society, and very few participation indicators have been established.

10. Until now we have not yet been able to identify examples of decision-maker-oriented indicators designed to foster the implementation of measures against desertification.

11. The development of impact indicators is encouraged.

12. There is little consensus at international level when we try to describe benchmarks as parameters and thresholds used to define the baseline of measurement.

[1] Those achieved from the practical experience and traditional knowledge of producers and communities.

13. A questionnaire was developed on the use of the B&I, aimed at focal points and others in order to obtain knowledge of the state of art in the use of B&I in the different Annexes of the UNCCD. The first version of this enquiry was facilitated by the Executive Committee of the Project "Active exchange of experience on indicators and development of perspectives in the context of the UNCCD" (AID CCD) as a contribution to the task of the Group of Experts. The survey was discussed and amended during the deliberations of the working group.

14. There is little information on biological indicators of soil quality and methods for integrating physical, chemical, and biological soil properties for developing integrated indicators.

15. The work programme includes different items such as: revision, updating and consensus on concepts and definitions of B&I, multi-scale approach, validation, suggestions for establishment of pilot studies, evaluation of results, training and dissemination of information. The group will use consultations, seminars, dissemination and the development of a final report including the results reached.

16. It is recommended that the group should work, as a first step, in the study and analysis of the experience accumulated on this subject under the main concepts of the UNCCD and other United Nations conventions, and other programmes and projects.

17. The development of a common B&I System could serve as an effective tool to combat desertification and mitigate the effects of drought. It can be generated using a participatory approach addressing needs of stakeholders and demands of decision makers, and would have a major impact on policy formulation at all levels.

18. It is recommended to develop the work programme to contribute to the adoption of a unified methodology on B&I. As a first step, it is recommended to conduct a survey on the application of B&I. This survey will address both the focal points and others in order to obtain a deep knowledge of the state of the art on B&I at international level.

Task 1.6 bis: Case study: Regional diagnosis for LAC on indicators and monitoring systems
(Coordinator: Santibáñez)

Progress made in the development of benchmarks and indicators in LAC

Several cooperation projects have been carried out in the region since 1994. The first attempt convoked representatives of Argentina, Bolivia, Brazil, Chile and Peru, who met in Sao Paulo, Brazil, to start working on B&I in the region. The emerging LAC working group on B&I continues to work. In 1995, UNEP/FAO decided to give financial support to make workshops in each one of participating countries. In 2000, the GEF/UNEP decided to give financial support to a proposal prepared by Brazil, Chile and Mexico. This proposal was addressed to the development of "An Indicator Model for Monitoring Desertification and Biodiversity in LAC". This project developed during 2000-2003 and created a unified system of indicators, field protocols to assess indicators and a software (MONITOR) to manage a database on indicators and automatic mapping facilities. This project ended in an operational information system in three pilot areas of the region.

At present there are important accumulated experiences in the region, serving as guarantee to launch a systematic effort leading to put into operation monitoring systems based on B&I.

LAC desertification monitoring systems

The main objective of the development of desertification monitoring systems is to provide decision-makers and other end users with a rich stream of intelligible information about specific environmental and social issues. Simultaneously, these systems will enable decision-makers and other end users to monitor the impacts of actions and policies against desertification, allowing them to know rapidly where weaknesses and strengths are emerging. The MONITOR (a database management system) is an example of such a system.

The MONITOR implementation will result in an improved capacity for anticipating progress of unwanted effects of desertification, providing necessary elements to decision-makers to redirect plans and policies in order to be more efficient in halting or reversing negative trends.

The existence of the MONITOR system, based on standardized indicators allow for the exchange of experiences between countries having similar problems.

The MONITOR system includes a manual containing protocols to assess indicators in the field.

The MONITOR, is not conceived solely as a set of indicators and a methodology to gather and store data. The system should be able to translate this information into a comprehensible diagnosis and, if possible, a prognosis, of what is happening or could happen in a region experiencing a process of desertification. Thus, the system is endowed with a capacity to aggregate information, simplifying the complexity and reducing the noise of original information, thus producing simple profiles of standard indices of the state of the main components of the problem. Ideally, the system is able to show by mean of maps the spatial distribution of the problems related to desertification dynamics

The MONITOR network includes data collecting protocols, databases, data management and mapping software, a board of collaborating institutions, a national technical committee and information dissemination and exchange mechanisms.

The selection of data entries and information to be generated by the system is oriented to user needs. Data is expressed in “minimum spatial units” or basic polygons which are described by selected indicators. It is thus recommended to take these census units as the basic resolution of the system.

Users networking

Instead of implementing a complicated central system, it is more operational to implement multiple small monitoring systems working close to end user. The territory may be divided into small areas (municipalities, districts, etc). Each one of these spatial units can operate a MONITOR node consisting of hardware/software facilities and trained personnel belonging to local organizations.

Conclusions

1. There is important accumulated experience in the Region, on development of desertification monitoring systems, as a result of seven years of collaborative programs among several countries of LAC.
2. Integration of indicators into desertification monitoring systems provides a powerful tool for decision support at various levels of users.
3. Important practical experience is available in LAC on development of cost effective methods for field evaluation of indicators to be used as inputs of monitoring systems.
4. Desertification monitoring systems integrate information on indicators, data management system and models to integrate data and provide support for decision makers. These systems can be adapted to effectively link end user needs with policy makers.

Recommendations

1. Promote setting up desertification operational monitoring systems on the basis of existing experience and methodologies.
2. Promote the use of desertification monitoring systems, we recommend a training program for capacity building on implementation and operation of desertification monitoring systems.
3. Promote dissemination and the use of cost effective methods for field evaluation of indicators in order to enable countries for periodically updating monitoring systems.
4. Capacitate persons on the use of assessing and monitoring technologies addressed to decision support at the level of institutions and end users.

Task 1.8: Short-term early warning systems
(Coordinator: Castillo)

Summary

In accordance with its Work Programme, reviewed in Hamburg in 2002, the Group of Experts (GoE) should deal with further development and validation of the work of previous ad hoc panels on early warning systems.

The design and implementation of Desertification Early Warning Systems (DEWSs) is an instrument and initiative to combat desertification in the framework of the NAPs developed and implemented by the UNCCD.

Previous ad hoc panels concluded that there are many operational EWSs for drought at the global scale. However, national and local scale EWSs for drought should be further developed, particularly in developing countries.

The panel also concluded that no operational EWSs exist for desertification. Therefore the importance of the creation of a Desertification Early Warning System arises from the lack of a system for desertification assessment, warning and prevention of consequences, and for the exchange of information between stakeholders.

DEWSs involve the long-term prediction and evaluation of desertification. This implies, besides the exchange of existing information among stakeholders, cooperation and training, the establishment of a system for assessing, monitoring, warning, predicting and supporting decisions to be taken in relation to desertification and its consequences.

Several functioning EWSs (on famine, drought and desertification) have been reviewed and its conceptual organization in modules explored to understand how they organize the assessment, monitoring, warning or alerting and prevention activities.

Conclusions

The systems explored are organized in different and various modules but all these modules can be grouped in four classes:

a. *Exchange and diffusion of information* (Clearing House Mechanism concept) through mailing lists, data bases on line, publications and reports on line, bulletins.

b. *Monitoring and analysis of data*, supported by GIS on line and crop models through modules like: weather analysis (rainfall indicators), vegetation analysis (NDVI comparatives), crop calendars (CROPWAT), and stream flow model (FEWS).

c. *Hazard and risk analysis*, information and alerts on hazards, spatial distribution of hazards, risk maps: hazards effects on households and population.

d. *Decision support***:** analysis of risk maps and development of emergency scenarios, modules of contingency and response planning.

Each EWS must be organized according to the nature and characteristics of the problem or concept that is the focus of attention of the system. The spatial and temporal level of action desired for DEWSs must be defined according to the nature of the problem and the needs of the end-users.
There are several pending questions on desertification early warning systems:

1. What contributions can be expected from DEWSs? Whom must the DEWSs be addressed to?
2. How can DEWSs fulfill these expectations?
3. Which updated resources are available to accomplish the expectations?

Recommendations

A critical review of performance of existing EWSs should be completed. Special attention will be paid to the applicability, how it meets the needs of end-users and operating cost.

Either benchmark and indicator or assessment methods provide the basic tools for DEWSs. Therefore, links among the DEWS working group and the other working groups (especially desertification assessment, B&I) must be strengthened within the GoE.

DEWSs should be a basis for the exchange of information but also an instrument of assessing, monitoring, predicting, warning or alerting and support decisions.

Desertification early warning systems should be based on the techniques and methods developed already by researches and operational programmes (especially ongoing drought early warning systems)

Stakeholders and final end-users should be actively involved in the design and development of DEWSs.

II. OVERVIEW OF ATTRIBUTES DERIVED FROM SUMMARIES, CONCLUSIONS AND RECOMMENDATIONS OF THE PRESENTATIONS

(Coordinator: Seely)

1 – Land degradation 2 – Land conservation and rehabilitation 3 – Sustainable drylands development (overlap with following topics)	**Current state of knowledge**	**Extent and scale of impact**	**Opportunities for prevention and mitigation**	**Policy implications**
Assessment	Widespread amongst country Parties. PSR and DPSIR framework used. Other assessments taking place, e.g. MA, LADA, GLASSOD. Multi-scaler - at local level greater need for social components	Extent and scale of impact related to state of knowledge	Opportunities exist	Has great potential for application
World Atlas	World Atlas of Desertification revised in 1997; lack of accurate and reliable data and of clear aims and objectives; regular updating not possible	Impact at global level only	Limited local application reduced opportunity for contributing to prevention and mitigation	Expected to have increased policy implications
Science Plan	Sample of 50 projects gathered. Categorized into ecology, technology and management, economics and sociology. Vast amount of research on variety of issues completed and ongoing	Will be enhanced by formulation of strategy and science plan	Opportunities exist for application of research to prevention and mitigation	Science Plan will have policy implications
Poverty	Methodology developed based on specific existing knowledge to provide information. No broad assessment of status or availability	At local, pilot level to date; can be integrated into overall B&I initiative	Opportunities exist	Could have application to policy if appropriately communicated
Glossary	Many glossaries exist but are too specific for use by UNCCD	Existing glossaries are used by subject specialists and scientists	A specific glossary would help to harmonize and disseminate information and scientific knowledge	Policy support opportunities exist if glossary contains understandable knowledge for identified end users; currently terminology is sometimes misused

Networking	Numerous networks exist with relation to combating desertification; none directly support national coordinating centres	Impact of networks is limited if not of specific interest (e.g. CST)	Opportunities exist to support prevention and mitigation through decisions of CST	Could have implications for CST as do other networks for specific users
Benchmarks and indicators	Confusion on concepts; no unified understanding; no unified methodology because approach not holistic; many attempts to use B&I but practical results are scarce	Extensively reviewed but few examples of application, mainly implementation indicators used in formulation and application of NAPs, SRAPs and RAPs	The development of a common B&I system could serve as an effective tool for combating desertification and mitigating the effects of drought	If generated using a participatory approach addressing needs of stakeholders and demands of decision makers, B&I would have major impact on policy formulation at all levels
LAC overview	Seven years of collaborative programmes in LAC in development of desertification monitoring systems involving cost effective field evaluation using indicators	Important to apply not only at central level but also at local level through functional systems contributing to wider network	Opportunities exist to support prevention and mitigation	Opportunity has been explored to effectively support policy through monitoring, use of indicators and modeling
Early warning systems	EWSs occur globally but no operational DEWSs	Impacts occur at the technical level but rarely at the implementation level	Opportunities exist for resource users and managers to apply results of DEWSs	Policy implications could be great in parallel with those of Drought Early Warning Systems

Annex I

AGENDA OF THE MEETING

Monday, 2 June 2003

09.00-10.00	Registration of the participants
10.00-10.10	Opening of the meeting by the Chairperson of the Group of Experts
10.10-10.15	Adoption of the agenda
10.15-11.00	**Task 1.1: Assessment of desertification on the global, regional and national levels (Coordinator: Takeuchi)** *1.1.1 To evaluate and structure the methodology for assessment of desertification across the scales (global, national, regional and local level)* (interim report for COP 6 to be reviewed during this meeting)
11.15-12.30	Task 1.1 (continued) - 1.1.1 (continued)
14.00-16.00	Task 1.1 (continued) - *1.1.2 To review criteria and basis on which desertification assessment is evaluated* (interim report for COP 6 to be reviewed during this meeting)
16.15-18.00	Task 1.1 (continued) - 1.1.2 (continued)

Tuesday, 3 June 2003

09.00-10.30	**Task 1.2: To help in providing an updated World Atlas of Desertification (Coordinator: Vermes)** (Preliminary progress report with financial needs to be submitted to COP 6)
10.45-12.30	Task 1.2 (continued)
14.00-16.00	**Task 1.3: To assist in providing a science plan for land degradation research (Coordinator: Folorunso)** *1.3.1 Review and prioritize current research activities* (to be finalized in 2003)
16.15-18.00	Task 1.3 (continued)

Wednesday, 4 June 2003

09.00-10.30	**Tasks 3 and 1.6: Poverty and land degradation: an assessment methodology (Coordinators: Leon and Ornas)**
10.45-12.30	**Task 1.4: To help in developing a web-based glossary of terms relevant for desertification (Coordinator: Debicki)** (draft terms of references for the glossary by March 2003 to be discussed at this meeting, web-based glossary operational by May 2003, report to COP 6 on progress in developing a web-based glossary)
14.00-16.00	**Task 1.5: To reinforce a mechanism for an interactive and thematic data/metadata network (Coordinator: Sciortino**) (to write a report before COP 6, Internet-based archive of scientific documents collected by the Group of Experts operational by March 2003)
16.15-18.00	Task 1.5 (continued) (draft terms of reference for a network for information system on desertification, report to COP 6)

Thursday, 5 June 2003

09.00-10.30	**Task 1.6: To assist in developing a common benchmark and indicators system for monitoring and evaluation of desertification (Coordinator: Abraham)** (to evaluate existing indicators)
10.45-12.30	**Task 1.6 bis: Case study: Regional diagnosis for LAC on indicators and monitoring systems (Coordinator: Santibanez)** (to be finalized until the end of 2003)
14.00-16.00	**Task 1.8: Short-term early warning systems (Coordinator: Castillo)**
16.15-18.00	Task 1.8 (continued) (results by October 2003)

Friday, 6 June 2003

09.00-10.30	General discussion on the outcome of the second meeting; planning of the next meeting; representation and tasks of the Group of Experts at COP 6
10.45-12.30	Report of the second meeting
14.00-18.00	Adoption of the conclusions and recommendations of the meeting

Saturday, 7 June 2003

09.00-12.00	Finalization and submission of final annex papers
12.00-12.30	Closing ceremony

Annex II

[ENGLISH/FRENCH/ITALIAN/SPANISH ONLY]

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