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**SYNTHESIS OF SCIENTIFIC AND TECHNICAL INFORMATION,
PARTICULARLY WITH REGARD TO THE BENCHMARKS AND
INDICATORS USED TO MEASURE PROGRESS, AND AN
ASSESSMENT THEREOF, CONTAINED IN THE REPORTS
RECEIVED FROM COUNTRY PARTIES FOR CONSIDERATION
BY THE COMMITTEE ON SCIENCE AND TECHNOLOGY**

Note by the secretariat

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I. INTRODUCTION

1. The present synthesis report contains information on scientific and technical aspects of measures to combat desertification and to mitigate the effects of drought, such as the benchmarks and indicators used to measure progress, and an assessment of those benchmarks and indicators. This scientific and technical information could fall within the terms of reference of the Committee on Science and Technology, as defined in paragraphs 2, 3 and 4 of decision 15/COP.1. Recalling those terms of reference, the present report deals with common features and trends which may be distilled from the reports submitted by country Parties, and identifies lessons to be learnt regarding the procedures for the communication of information and review of implementation of the Convention and possible issues for further exploration.

A. Terms of reference

2. Pursuant to article 26 of the Convention, each Party shall communicate to the Conference of the Parties, through the Permanent Secretariat, reports on the measures which it has taken for the implementation of the Convention and the Conference of the Parties shall determine the timetable for submission and the format of such reports.

3. In accordance with paragraph 13 of decision 11/COP.1, the Conference of the Parties shall initiate review of the reports submitted by the Parties. This review shall alternate, from session to session, between affected African country Parties and affected country Parties of other regions. At its third session, held from 15 to 26 November 1999 in Recife, Brazil, 42 reports were submitted by affected African country Parties.

4. Accordingly, at its fourth session, from 11 to 22 December 2000, to be held in Bonn, Germany, the Conference will examine 125 reports submitted by country Parties and distributed as follows: Africa - 42 reports; Asia - 32 reports; Latin America and the Caribbean - 30 reports; developed countries - 10 reports; northern Mediterranean countries - 6 reports, including one regional report; and other affected country Parties - 5 reports.

5. Decision 11/COP.1 relating to procedures for the communication of information and review of implementation of the Convention defines the format and content of reports on national, joint, subregional and regional action programmes, as well as the format for the reports of developed country Parties and affected developed country Parties not preparing action programmes.

6. Paragraph 18 of decision 11/COP.1 and paragraph 4 of decision 6/COP.3, on the review process for reports, stipulate that reports by Parties, together with advice and information provided by the Committee on Science and Technology and the global mechanism consistent with their respective mandates and such other reports as the Conference of the Parties may call for, shall constitute the basis of the review of implementation by the Conference of the Parties.

B. Purpose of the present synthesis

7. In accordance with the mandate conferred under paragraph 18 of decision 11/COP.1 and paragraph 4 of decision 6/COP.3, the Permanent Secretariat, with a view to facilitating the

review of reports submitted by country Parties to the Convention, has prepared the present synthesis report on the basis of the reports received, and as mentioned in paragraph 3 above.

8. Summaries of the national reports may be found in the documents ICCD/COP(4)/4; ICCD/COP(4)/4/Add.1, sections A, B, C and D; ICCD/COP(4)/4/Add.2, sections A, B, C and D; ICCD/COP(4)/4/Add.3, sections A and B; ICCD/COP(4)/4/Add.4; ICCD/COP(3)/5; and ICCD/COP(3)/5/Add.1-5.

C. Common features and trends among Parties

9. Most of the affected country Parties identify causes of desertification in their national reports. These causes include both physical and human factors. Prominent among the physical factors are such features as climatic variation, wind and water erosion, salinization and others. The human factors include population growth, agricultural expansion and inappropriate agricultural practices, overgrazing, forest fires, extensive deforestation and others.

10. Most of the reports state that the affected country Parties have formulated policies, programmes and plans on desertification control. The United Nations Convention to Combat Desertification works as a catalyst, and is enabling - or has already enabled - many countries to focus or refocus their action programmes on desertification issues. Most of these programmes are still being formulated.

11. Most of the affected country Parties say in their reports that financial, technical, technological and capacity-building needs constitute their priority for the implementation of the Convention.

12. A number of joint projects and programmes are under way, demonstrating different forms of partnership which have been established among affected developing country Parties. Examples include the Asia-Africa meetings, held in 1997 in Beijing and 1998 in Niamey, and the Africa-Latin America and Caribbean meetings, held in Recife in 1998 and Bamako in February 2000, which resulted in South-South partnership agreements. Further examples of partnership may be seen in the thematic programmes which have been formulated or are being developed at the subregional and regional levels. Thus, in Africa seven thematic programmes have been identified; in Asia, six; and in Latin America and the Caribbean, nine.

- (i) The seven thematic programmes identified in Africa are the following:
 - (a) Agroforestry and soil conservation;
 - (b) Range management and development of feed crops;
 - (c) Integrated management of international watercourses, lakes and hydrographic basins;
 - (d) Environmental follow-up, remote sensing, cartography of natural resources and early-warning systems;

- (e) New and renewable energy sources, and environmentally friendly technologies;
- (f) Sustainable agricultural production systems;
- (g) Capacity-building and promotion of an enabling environment in the framework of regional action programmes.

The thematic programmes listed under (a), (b) and (c) above were launched in March 2000;

- (ii) The following thematic programmes are either under way or about to be initiated in Asia:
 - (a) Monitoring and evaluation of desertification, launched in Beijing in July 1999;
 - (b) Agroforestry and soil conservation in arid, semi-arid and subhumid dry regions, launched in Delhi in March 2000.

Programmes still to be launched cover the following areas:

- (c) Range management, including sand dune stabilization;
- (d) Water resource management for agricultural needs;
- (e) Capacity-building to address the impact of drought and to control desertification;
- (f) Assistance for the implementation of integrated local development initiatives;
- (iii) The following thematic programmes have been launched in Latin America and the Caribbean:
 - (a) Benchmarks and indicators project;
 - (b) Regional Information Network on Desertification and Drought (DESELAC).

The following are still in preparation:

- (c) Projects to enhance and validate traditional knowledge and local technologies;
- (d) National and regional education measures to combat desertification;

- (e) Creation of a system to manage investment in the Convention to Combat Desertification.

A framework for horizontal cooperation to combat desertification and to mitigate the effects of drought will be set in place in due course.

13. In annex IV countries and in the other affected country Parties, a number of scientific and technical activities have been conducted to implement the Convention. These relate, first, to the implementation of monitoring and early warning systems based on remote sensing and measuring networks based on meteorological stations and other stations set up for this purpose and, second, to the strengthening of scientific research at both national and international levels. The national action programmes clearly identify the following priorities: reclamation and rehabilitation of the worst-affected areas; assistance for the settlement of the populations of these areas, the reforestation of vulnerable areas and the protection of forests against fires; management and protection of catchment areas; erosion control; management of water resources and enhancement of farming practices.

14. In their regional action programme, the annex IV countries have identified seven priorities, as follows:

- (a) High-risk areas subject to desertification;
- (b) Common indicators to assess desertification;
- (c) Gathering and analysis of technical and scientific data;
- (d) Data and information exchange;
- (e) Involvement of civil society at all stages of the decision-making process in regional action programmes;
- (f) Traditional knowledge and practices;
- (g) Coordination and contacts with subregional and regional initiatives.

The regional action programmes are prepared around these priorities, with the involvement of national institutions in both financial and human-resource terms.

15. Most of the developed countries focus in their reports on technical and scientific cooperation activities in the area of desertification and land degradation, including through satellite observation, early-warning systems and geographic information systems. This technical and scientific cooperation with recipient countries is implemented, in most cases, through regional or subregional scientific institutions, scientific non-governmental organizations and international organizations, including those of the United Nations system, or with their assistance. It is clear from a large number of the reports that indirect support has been provided

for the implementation of the Convention through sustainable and integrated rural development activities, national environmental plans and other measures relating to natural resource management and sustainable development in general, as follows:

- (i) Certain reports mention support provided for scientific activities, such as catchment basin management; improvement of water supply systems and irrigation; land rehabilitation and conservation; forest management; grazing; training and education in disadvantaged rural areas; capacity-building for civil society, farmers and women; and general and specific support for rural credit and health;
- (ii) A number of developed country reports stress the need to create synergies among the conventions and other organizations dealing with environmental issues, such as the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, the Ad Hoc Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests. A coordination and cooperation programme should be set in place between the three conventions - on climate change, on biological diversity and desertification - with a view to avoiding overlaps and optimizing their programmes;
- (iii) In their reports, the developed country Parties to the Convention reaffirm their full support, in line with the recommendations of the Convention, for the drafting, elaboration and implementation of national action programmes, through a process of participation of all the actors involved, in particular women and local communities, of consultation, partnership agreements and an integrated, bottom-up approach. These reports also indicate that efforts to control desertification should be an integral part of the struggle against poverty, which is a priority of their cooperation policy. The reports also show, however, that the partnership agreements form part of general agreements.

D. Decision of the Conference of the Parties on the recommendation of the Committee on Science and Technology

16. In the context of scientific and technical cooperation under the Convention to Combat Desertification, at its previous sessions the Conference of the Parties has adopted scientific and technical decisions relating to traditional knowledge; to a survey and evaluation of existing networks, institutions, agencies and bodies; and to benchmarks and indicators.

17. With regard to benchmarks and indicators, at its first session the Conference of the Parties invited Governments to initiate testing the indicators identified in document A/AC.241/INF.4, as revised by document ICCD/COP(1)/CST/3/Add.1, and to report on their usefulness and the practicality of using them in their national reports.

18. At its second session, the Conference of the Parties endorsed the methodological framework proposed by the 10-member ad hoc panel which it had appointed at its first session to review the methodology contained in document ICCD/COP(1)/CST/3/Add.1, with a view to

defining impact indicators and determining how the methodology could be carried out and whether it could be recommended for use. The panel was assisted by an informal group comprising international and subregional organizations and individually appointed experts.

19. The Conference of the Parties invited Governments to initiate testing of the impact indicators and the practicality of using those indicators in national reporting. It also encouraged the Parties and the other countries in a position to provide assistance, as well as international organizations, to mobilize technical and financial support for the affected country Parties, and to initiate the testing of impact indicators, particularly at the national level (decision 16/COP.2).

II. AFRICA

Review of affected country reports on implementation of the Convention, including scientific and technical information on benchmarks and indicators used to measure progress and an assessment thereof

20. Generally speaking, the African countries have practically no information or available data at the national level, let alone benchmarks and indicators for desertification. Many of the national reports submitted to the Conference of the Parties at its third session state that the indicators had been developed in the framework of other environmental initiatives, such as national environmental action plans, state-of-the-environment reports and national conservation strategies. Most countries intend to develop specific indicators for desertification in the framework of their national action programmes.

21. In some cases, indicators have been established in the framework of food security early warning systems. These indicators could in the future provide supplementary information regarding desertification. Currently, however, most countries indicate that the lack of geographical information systems (GIS) and environmental information systems (EIS) available to their desertification focal points prevents them from adopting a systematic approach to development policies. While sectoral data are available, to different degrees, in the various technical ministries and in international organizations, the lack of coordination between these institutions and the shortage of qualified GIS/EIS staff pose further obstacles to the focal points in the preparation of their reports, particularly with regard to impact indicators. Their task is still further complicated by the absence of uniform standards and formats within these institutions.

22. Several reports stress the need for field studies and for pilot sites to be identified to supplement the desertification information and data provided by advanced technological systems, such as remote monitoring. According to some of those who collaborated on the preparation of the reports, there is an urgent need to develop indicators capable of being used at the community level and which are economically viable.

23. None of the reports provide any information regarding the Parties' implementation of decision 22/COP.1, inviting Governments to initiate the testing of the implementation indicators identified in document A/AC.241/INF.4, as revised by document ICCD/COP(1)/CST/3/Add.1

and decision 16/COP.2. In fact, only four countries - Cape Verde, Swaziland, the United Republic of Tanzania and Zambia - use indicators in their national reports to monitor the process of implementation of the Convention. None of the reports indicates why this approach has not been more broadly adopted. There appears to be no correlation between the use of implementation indicators in national reports and the status of the national action programmes.

24. The reports provide no information about any testing of impact indicators by Parties, as requested by the Conference of the Parties at its second session. Several countries identified a number of physical and socio-economic indicators in a list of proposed desertification indicators, currently being developed, which will be used in future activities conducted jointly with the national action programmes. To date, however, none of these indicators has been tested. In their national reports, several countries refer to their participation in pilot projects on indicators conducted by external organizations, including initiatives by the Sahara and Sahel Observatory (OSS), the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS) and the United Nations Commission on Sustainable Development. Be that as it may, none of the countries has yet tested any impact indicators at the national level.

III. ASIA

Review of affected country reports on implementation of the Convention, including scientific and technical information on benchmarks and indicators used to measure progress and an assessment thereof

25. The national reports submitted by Asian country Parties to the Conference of the Parties at its fourth session feature a number of current initiatives at the regional and national level, undertaken with a view to identifying benchmarks and indicators for desertification. None of these reports, however, has applied any of the implementation indicators identified in document A/AC.241/INF.4 adopted by the Conference of the Parties. Furthermore, the national reports provide no information, obtained with the use and assessment of impact indicators, on the status of implementation of the Convention to Combat Desertification at the national level. This would seem to suggest that none of the countries has initiated testing the use of the indicators, notwithstanding the recommendation by the Conference of the Parties at its first and second sessions.

26. Several countries state that work on indicators is being conducted in the framework of other environmental initiatives and international conventions. Not much specific information is provided, however, on desertification.

27. Although the national focal points have access to the environmental and geographic information systems (EIS/GIS) in use in various national institutions and regional organizations, their capacity to produce impact indicators and to harmonize the existing information systems is very limited. Several countries point to a scarcity of benchmarks on the management over time of desertification. Others note the lack of indicators suitable for use at the community level.

28. Even in those countries where work on indicators is most advanced, reports indicate that their application to desertification monitoring and assessment will not be operational for several more years.

29. China has been designated to host the Asian regional networks on desertification monitoring and assessment (TPN1). It has undertaken to provide training on the desertification monitoring and assessment criteria, which will necessitate external financial support.

IV. LATIN AMERICA AND THE CARIBBEAN

Review of affected country reports on implementation of the Convention, including scientific and technical information on benchmarks and indicators used to measure progress and an assessment thereof

30. In response to the decision referred to in paragraph 17 above, five countries from the region have jointly undertaken to identify a unified methodology to develop a group of selected biophysical and socio-economic indicators. This experiment will be extended throughout the region under a regional project on the selection of indicators and the development of methodologies to manage and assess desertification at the national level. Other initiatives, including a model indicator for arid lands, are being developed in the region. The indicators that have been identified relate to plant cover, forests, water quality, loss of biological diversity, land degradation, land-tenure systems, migrations and health.

31. While these initiatives are duly noted, it is also pointed out that only 38 per cent of the countries in the region are actively working to develop benchmarks and indicators on land degradation. The other countries in the region have not yet taken any steps in this direction.

V. AFFECTED COUNTRY PARTIES OF THE NORTHERN MEDITERRANEAN AND OTHER AFFECTED COUNTRY PARTIES

Review of affected country reports on implementation of the Convention, including scientific and technical information on benchmarks and indicators used to measure progress and an assessment thereof

32. Many of the focal points have no access either to specific information or databases on desertification, which are indispensable for national action programmes. The databases available in the various national and regional organizations employ different standards and formats and possibilities for coordination between them are therefore limited.

33. Although a number of impact and implementation indicators have been proposed in various national reports, none of them has actually been used to measure the status of implementation of the Convention to Combat Desertification. The reports contain no information to suggest that Parties are testing the indicators, as recommended by the Conference of the Parties at its first and second sessions.

VI. DEVELOPED COUNTRY PARTIES

Review of scientific and technical aspects of the developed country reports

34. Eleven developed countries have submitted reports which, in presentation and content, comply with the provisions of paragraph 10 (c) of decision 11/COP.1.
35. The developed countries have promoted consultative processes and partnership agreements through bilateral and multilateral cooperation and have provided financial assistance for the preparation and implementation of action programmes at all levels. Some have provided financial assistance throughout the Convention's negotiation process, right up to the implementation stage.
36. These contributions have been used to fund programmes or projects implemented under the Convention in the context of partnership agreements with Governments, associations, regional and national organizations, institutions and non-governmental organizations in a number of affected countries in Africa, Asia, and Latin America and the Caribbean.
37. These programmes and projects relate not only to aspects of institutional, political and capacity-building reforms, but also to the management of natural resources, water and soil conservation, agriculture, livestock, forestry and research activities. The developed countries' contributions are used, however, to fund national environmental plans or other general natural resource management and sustainable development plans and are not specifically targeted at desertification.

VII. POSSIBLE ISSUES TO BE TAKEN UP BY THE COMMITTEE ON SCIENCE AND TECHNOLOGY

A. Issues relating to the procedures for the communication of information and review of implementation of the Convention

38. A number of activities undertaken by Parties in the area of science and technology do not appear to have been adequately covered in their reports. The Committee on Science and Technology might wish to consider the procedure for the submission and the content of the reports, as defined in decision 11/COP.1 on the procedures for the communication of information and review of implementation. It might be a good idea for developed country Parties to be able to report in a more sustained manner on their scientific and technical activities.
39. When reviewing reports submitted by Parties, the Committee on Science and Technology, in accordance with its terms of reference, might wish to reflect on ways of utilizing these reports during its consideration of scientific and technical aspects.
40. The Committee on Science and Technology might also wish to reflect on a possible follow-up to any decision which the Conference of the Parties might take on the presentation and content of reports, to ensure that reports provide a better reflection of the scientific and technical activities undertaken by Parties.

41. The Committee on Science and Technology might also wish to consider submitting a recommendation to the Conference of the Parties regarding the implementation of its decisions on benchmarks and indicators. One possible approach might be to identify and to assist, in the different regions, a group of countries entrusted with undertaking the testing of impact indicators.

B. Other matters

42. The Committee on Science and Technology might also take up the issue of the appointment and operation of the ad hoc panels set up by the Conference of the Parties to provide it, through the Committee, with information and advice on specific issues regarding the state of the art in fields of science and technology relevant to combating desertification and mitigating the effects of drought. For this purpose, the Committee on Science and Technology should ensure that the experts constituting the ad hoc panels which it recommends to the Conference of the Parties have the necessary expertise and experience.

43. The Committee on Science and Technology might wish to examine the possibility of integrating such activities as those on traditional knowledge and on benchmarks and indicators in the thematic programmes at the subregional or regional levels and to placing more reliance on the decentralized structures of the thematic networks set up under the Convention annexes.

44. Given the importance of the review of the monitoring of desertification, the Committee on Science and Technology might also wish to ensure complementarity between the Millennium Assessment, the Land Degradation Assessment (LADA) and the environmental country profiles, which would help provide a better overall picture of the status of desertification.

45. Most conventions relating to environment and sustainable development have committees more or less analogous to the Committee on Science and Technology. Bearing in mind the terms of reference of these committees, the Conference of the Parties might wish to reflect on ways of enhancing the operation of the Committee on Science and Technology and its programme of work.
