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The 10-year strategic plan and framework to enhance the implementation of the Convention (2008–2018) –
Committee on Science and Technology
Advice on how best to measure progress on strategic objectives 1, 2 and 3 of the 10-year strategic plan and
framework to enhance the implementation of the Convention (2008–2018)

**Advice on how best to measure progress on strategic objectives
1, 2 and 3 of the 10-year strategic plan and framework to enhance the
implementation of the Convention (2008–2018)**

Note by the secretariat

Summary

In decision 3/COP 8, the Conference of the Parties (COP) requested the Committee on Science and Technology (CST) to provide advice on how best to measure progress on strategic objectives 1, 2 and 3 of the 10-year strategic plan and framework to enhance the implementation of the Convention (The Strategy).

In response, CST developed and implemented a consultative process to identify and recommend a minimum set of impact indicators that could be used both by affected country Parties and globally to measure achievement of the three strategic objectives. The process comprised: (a) an in-depth review of the literature and a global consultation of affected Parties on currently utilized impact indicators; (b) a consultation of all the actors in the five regional annexes on methodologies, baselines and capacity-building needs; and (c) a study on the availability of data at United Nations agencies and intergovernmental organizations.

Following in-depth analyses of the outputs of the various studies, a minimum set of 11 impact indicators was identified. The selected indicators are measurable, reliable, specific, applicable at the national and the global levels and cost-effective; and they respond to the special circumstances and needs of developing countries, and the availability of existing data.

In order to ensure that the indicators are useful to and used by Parties, they are accompanied by recommendations on: pragmatic baselines, feasible targets, realistic tracking frequencies, the data and information required and the potential sources for such data and information as well as an assessment of the capacity-building needs of Parties to ensure effective utilization of the indicators.

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ABBREVIATIONS

BII	Biodiversity Intactness Index
CBD	Convention on Biological Diversity
COP	Conference of the Parties
CRIC	Committee for the Review of the Implementation of the Convention
CST	Committee on Science and Technology
DLDD	desertification/land degradation and drought
GIS	Geographical Information System
GM	Global Mechanism
HDI	Human Development Index
IGO	intergovernmental organization
NFP	national focal points
NPP	net primary productivity
STC	science and technology correspondents
SLM	sustainable land management
SPSS	Statistical Package for Social Sciences
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme

I. Background and context

1. The United Nations Convention to Combat Desertification (UNCCD) was adopted on 17 June 1994 and entered into force on 26 December 1996. Ever since then efforts have continually been made by Parties to: (a) further understand the extent and severity of desertification, land degradation and drought (DLDD) at the national, subregional and regional levels; (b) develop and implement strategies and prioritize activities to combat DLDD in a participatory manner that involves multiple stakeholders, including State agencies, civil society organizations, scientific partners, regional and subregional institutions and international cooperation partners; and (c) monitor the implementation of such activities and their outputs. The latter task has involved the active participation of the Committee for the Review of the Implementation of the Convention (CRIC).

2. After well over a decade of implementation of the Convention, all Parties by common accord decided to put a deserved emphasis on the impact of the implementation of the strategies and activities detailed in national action programmes (NAPs), subregional action programmes (SRAPs) and regional action programmes (RAPs) on affected populations and their ecosystems as well as the benefits accrued to the global community in general. This consensus led to the development of a 10-year strategic plan and framework to enhance the implementation of the Convention (2008-2018) (The Strategy), which was adopted at the eighth session of the Conference of the Parties (COP) in Madrid in 2007. In The Strategy Parties adopted a results-based management approach, outlining four strategic objectives and five operational objectives, as well as corresponding impact and performance indicators to measure progress.

The Conference of the Parties assignment to the Committee on Science and Technology

3. In decision 3/COP.8, the Committee on Science and Technology (CST) was requested to advise the ninth session of the COP (COP 9), through CRIC, on how best to measure progress on the achievement of strategic objectives 1, 2 and 3 of The Strategy, based inter alia on the deliberations and outcomes of its ninth session.

4. CST advised that the best way to measure such progress would be by the use of impact indicators. However, the CST noted that a number of conditions must be met in order for such impact indicators to be both useful and usable by the Parties:

- (a) There should not be too many, to avoid overwhelming the users;
- (b) They should be specific, that is, linked and linkable to activities carried out to combat desertification;
- (c) They should be linked to baselines and targets to truly measure progress;
- (d) They should be measurable (quantitatively) or lend themselves to qualitative assessment;
- (e) They should build on existing knowledge and not reinvent the wheel, to ensure that the capacity for use is available or easily acquired.

5. The CST Bureau therefore developed a process and implemented a set of activities to identify a minimum set of indicators that meet these and other important criteria. A detailed description of this process is attached at annex 1 to this document. This report contains the outcomes of the process: the recommended minimum set of impact indicators, a short discussion of their relevance to UNCCD and recommendations for their use.

II. Minimum set of impact indicators

6. On the basis of an in-depth analysis of the outputs of the various studies described in the annex, peer consultations and the input of the CST Bureau, to which a draft and the final report were presented, a minimum set of impact indicators was recommended to be used by Parties.

7. The first 4 of the 11 indicators focus on measurements of well-being of the affected population (water availability per capita in affected areas, the proportion of population in affected areas living above the poverty line, the Human Development Index (HDI) and childhood malnutrition and/or food consumption/calorie intake per capita in affected areas). A further four indicators focus on the status of the ecosystems (level of land degradation, plant and animal biodiversity, the aridity index and the level of carbon stocks above and below ground), while the last three combine elements of both (change in land use, land cover status and land under sustainable land management).

A. Water availability per capita in affected areas

8. **Purpose:** To monitor improved access to water sources in affected populations.

9. **Relevance to UNCCD:** Land degradation affects the quantity and quality of fresh water supplies. Drought and desertification are associated with lower water levels in rivers, lakes and aquifers. The Convention text refers frequently to water scarcity and it is expected that the projected intensification of water scarcity as a result of climate change will cause greater stresses in drylands.

B. Change in land use

10. **Purpose:** To highlight changes in the productive or protective uses of the land resource.

11. **Relevance to UNCCD:** Information on land-use change is critical for integrated and sustainable land-use planning and as an indicator of economic change. Changes in arable and permanent cropland and wooded areas provide important information about a country's endowment of agricultural and forest resources, from both an economic and an environmental perspective. Economically, changes in land use will result in changes in the volume of produce available and influence employment opportunities. Unsustainable land use is an important factor in erosion and desertification and may pose a threat to ecosystems, leading to natural habitat loss and landscape changes.

C. Proportion of population in affected areas living above the poverty line

12. **Purpose:** Poverty is the defining characteristic of underdevelopment. National poverty rates are one of the core measures of living standards, and they draw attention exclusively to the poorest. National estimates are based on population-weighted subgroup estimates derived from household surveys.

13. **Relevance to UNCCD:** Measures of poverty are highly significant in assessing the impact of actions against desertification due to the centrality of poverty as a root cause, and at the same time a consequence, of land degradation and desertification.¹ Income is strongly dependent on ecosystem services in the affected areas, and these in turn can affect the level of poverty. Several determinants of human well-being are also directly dependent on ecosystem services.²

D. Childhood malnutrition and/or food consumption/calorie intake per capita in affected areas

14. **Purpose:** The purpose of this indicator is to measure long-term nutritional imbalances and malnutrition resulting in undernutrition (assessed by levels of underweight and stunting) and overweight.

15. **Relevance to UNCCD:** Health and development are intimately interconnected. Meeting the primary healthcare needs and the nutritional requirements of children is fundamental to the achievement of sustainable development. Nutritional status is the best global indicator of well-being in children and of the availability of ecosystem services.

E. Human Development Index

16. **Purpose:** The HDI is an attempt to measure the status of and changes in the well-being of populations. The HDI is a compilation of achievements in three dimensions of human development: a long and healthy life, access to knowledge and combined gross enrolment in primary, secondary and tertiary education; and gross domestic product (GDP) per capita in purchasing power parity US\$, respectively. The index is constructed from indicators that are available globally using a methodology that is simple and transparent.

17. **Relevance to UNCCD:** While the concept of human development is much broader than any single composite index can measure, the HDI offers a powerful alternative to GDP per capita as a summary measure of human well-being. The HDI provides data on the status of and trends in a country as a whole, but in many cases it should be possible to provide this data for affected areas. If so, this would be an effective surrogate for the impact of efforts to combat the effects of desertification on the livelihood of peoples.

¹ M. Snel, and A. Bot, "Some suggested indicators for land degradation assessment of drylands", draft paper.

² A.K. Duraiappah and M. Roy, "Poverty and Ecosystems: Prototype assessment and reporting method, Kenya case study", International Institute for Sustainable Development, July 2007, p. 3, available at <www.iisd.org>.

F. Level of land degradation

18. **Purpose:** The indicator will measure the extent and severity of land degradation at the national level. It also measures the implementation of agreements and programmes to address the causes of land degradation and to reclaim degraded lands.

19. **Relevance to UNCCD:** UNCCD is mandated to address land degradation and drought. An assessment of the degree of land degradation provides an indicator of the progress on restoring ecosystem services. Land degradation is an impediment to sustainable development in general, and to sustainable agriculture in particular. Land degradation and soil loss threaten the livelihood of millions of people and future food security, with implications for water resources and the conservation of biodiversity.

G. Plant and animal biodiversity

20. **Purpose:** The Biodiversity Intactness Index (BII) was designed to fulfil the requirements set out by the Convention on Biological Diversity (CBD), which stipulates that an indicator of biodiversity change should be scientifically sound, be sensitive to changes at policy-relevant spatial and temporal scales, allow for comparison with a baseline situation and policy target, be usable in models for future projections and be amenable to aggregation and disaggregation at the ecosystem, national and international levels.³ In addition CBD requires that the index be easy to understand and use, broadly accepted and measurable with sufficient accuracy at affordable cost.⁴ The purpose of BII is to help fulfil the goal of the signatories of CBD: to “achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level”.⁵

21. **Relevance to UNCCD:** Knowledge of plant and animal biodiversity is a basic input into UNCCD, which helps to determine the baseline for identifying changes, induced by pressure on land use, to natural ecosystems and biodiversity status. There are direct and indirect relationships between the state of natural resources (soil, vegetation, water and ecosystems), biological diversity at species level (animal, plant and microbial species), biological diversity at ecosystem level (habitats, interactions and functions) and the management of those resources. Changes in biodiversity are the result of land degradation and unsustainable land management. Management practices affect the capacity of land users to conserve and sustain resources and provide goods and ecological services.

³ R.J. Scholes and R. Biggs, “A biodiversity intactness index”, *Nature*, vol. 434 (March 2005), pp. 45–49; R. Biggs, B. Reyers and R.J. Scholes, “A biodiversity intactness score for South Africa”, *South African Journal of Science*, vol. 102 (August 2006), pp. 277–283.

⁴ Biggs, Reyers and Scholes, *ibid.*

⁵ G.M. Mace, “An index of intactness”, *Nature*, vol. 434 (March 2005), pp. 32-33, available at <www.scidev.net/uploads/File//pdf/nature/434032a.pdf>.

H. The aridity index

22. **Purpose:** To contribute to UNCCD core indicators S-4 and S-5 (see table below) by classifying desertification-prone areas and monitoring land degradation in terms of long-term loss of ecosystem primary productivity.

23. **Relevance to UNCCD:** UNCCD refers not only to desertification, but also to the effects of land degradation and drought. The aridity index allows the definition of intervals of climatic water deficiency and excess within a specific time period. This is a base indicator for characterizing sensitive and desertification-affected areas, and for the construction of indicators associated with land degradation and productivity.⁶

I. Land cover status

24. **Purpose:** To contribute to UNCCD core indicators S-4 and S-5 by providing two integrated indicators suited to monitoring land degradation in terms of the long-term loss of ecosystem primary productivity and taking into account the effects of rainfall on net primary productivity (NPP).

25. **Relevance to UNCCD:** The Global Assessment of Land Degradation and Improvement (GLADA) uses remote sensing to identify degrading areas and areas where degradation has been arrested or reversed. The indicators of land cover status are specifically targeted to meet the UNCCD demand for quantitative assessment at the global scale. The proposed indicators are NPP and rainfall use efficiency.

J. The level of carbon stocks above and below ground

26. **Purpose:** To encourage countries to take note of their carbon stocks and to record changes in above- and below-ground stocks as a global benefit.

27. **Relevance to UNCCD:** Among the purposes of UNCCD are to reduce land degradation and to combat drought. A measure of success in this regard is the increase in carbon stocks held both above and below ground. Carbon sequestration has global significance to climate change. It is likely that the United Nations Framework Convention on Climate Change (UNFCCC) will require carbon stock measurement by its Parties and it now appears possible to provide adequate estimates.

⁶ “Aridity is a natural environmental condition that describes climate extremities particularly referring to water scarcity. It is a determinant of ecosystem characteristics affecting soil health capacity. Soil moisture influences the distribution and growth pattern of vegetation, soil microbial activity, soil erosion, wind erosion, nutrient movements and other soil properties. A part of the land degradation assessment procedure that will provide understanding on developing strategies and approaches to mitigate/combat land degradation in drylands” LADA, technical report 2, biophysical indicator toolbox, (pressure/state), April 2007.

K. Land under sustainable land management

28. **Purpose:** Land under sustainable land management (SLM) is an important surrogate for a number of global benefits. SLM affects albedo, evapo-transpiration, vegetation cover and carbon sequestration, all of which have climate change implications. SLM seeks to harmonize the complementary but often conflicting goals of agricultural production and environmental protection. The aim must be an agreed trade-off at the farm and community level and at the international level. The central question is not how to preserve nature in a pristine state but how to coexist with nature in order to maintain the functions of the land resources for the benefit of society in a sustainable manner.⁷

29. **Relevance to UNCCD:** SLM affects vegetation cover and composition, which are globally important for biodiversity. SLM also reduces soil erosion and stream and lake sedimentation, which affect water retention and the regional hydrologic balance. SLM is thus an effective measure of a number of global benefits.

III. Recommendations

30. On the basis of the above, this chapter makes recommendations on: (a) the minimum set of impact indicators; (b) baseline and indicator tracking frequencies and targets; (c) data and information acquisition; and (d) capacity-building requirements.

A. The minimum set of impact indicators

31. Following in-depth analyses of the outputs of the various studies, a minimum set of 11 impact indicators has been identified and is recommended for use. The selected indicators are measurable, reliable, specific, applicable at the national, regional and global levels and cost-effective; and they respond to the special circumstances and needs of developing countries, and the availability of existing data. The indicators are presented in the table below, which links them to both the core indicators and the strategic objectives of The Strategy and shows their suitability for use at the national and/or the global level.

⁷ The World Bank, World Development Report 1990, 2000–2001, and 2006 editions.

Recommended set of impact indicators in relation to the strategic objectives and the core indicators

Recommended set of impact indicators		
	National level	Global level
Objective 1: To improve the living conditions of affected populations		
<p>Core indicator S-1: Decrease in the number of people negatively impacted by the process of desertification/land degradation and drought</p> <p>Core indicator S-2: Increase in the proportion of households living above the poverty line in affected areas.</p> <p>Core indicator S-3: Reduction in the proportion of the population below the minimum level of dietary energy consumption in affected areas.</p>	<ul style="list-style-type: none"> • I. Water availability per capita in affected areas • II. Change in land use • III. Proportion of the population in affected areas living above the poverty line • IV. Childhood malnutrition and/or food consumption/ calorie intake per capita in affected areas 	<ul style="list-style-type: none"> • I. Water availability per capita in affected areas • III. Proportion of population in affected areas living above the poverty line • V. The Human Development Index as defined by UNDP
Objective 2: To improve the condition of ecosystems		
<p>Core indicator S-4: Reduction in the total area affected by desertification/land degradation and drought</p> <p>Core indicator S-5: Increases in net primary productivity in affected areas.</p>	<ul style="list-style-type: none"> • II. Change in land use • VI. Level of land degradation (including salinization, water and wind erosion, etc.) • VII. Plant and animal biodiversity • VIII. The aridity index 	<ul style="list-style-type: none"> • IX. Land cover status
Objective 3: To generate global benefits through effective implementation of UNCCD		
<p>Core indicator S-6: Increases in carbon stocks (soil and plant biomass) in affected areas.</p> <p>Core indicator S-7: Areas of forest, agricultural and aquaculture ecosystems under sustainable management</p>	<ul style="list-style-type: none"> • VII. Plant and animal biodiversity • X. Carbon stocks above and below ground • XI. Land under SLM 	<ul style="list-style-type: none"> • III. Proportion of the population in affected areas living above the poverty line • XI. Land under SLM

B. Baseline and indicator tracking frequency and targets

1. Baseline

32. Baselines are important but need to be set with caution in order to ensure their usefulness as a control point. A number of baselines associated with the recommended indicators are already being used by the Parties. It is recommended that:

- (a) Parties should continue to use such baselines;

(b) Where there is a need for new baselines, these should be selected pragmatically: first, not too far back in time, to ensure reliability and accuracy; and, second, to be in tune with the 10-year lifespan of The Strategy. It is suggested that new baselines should be set within the period 2000 to 2009.

2. Indicator tracking frequency

33. The tracking frequency must be in conformity with the reporting guidelines currently being developed by CRIC, and should take account of the response sensitivity of the components of the biological systems targeted for measurement (e.g. regeneration of degraded land, forest cover etc.).

34. Given that The Strategy has a 10-year lifespan, and that the first reporting cycle is scheduled for 2012, it is recommended that the indicator tracking frequency should be four years or more, depending on the response sensitivity of the system.

3. Targets

35. Parties are the only entities that can accurately estimate human capacity, financial and other resources as well as the levels and quality of local and global policy support at their disposal. These factors will influence the setting of reasonable and achievable targets.

36. It is recommended that Parties be requested to set targets that they will strive to meet and for which they will be accountable. Targets should, as far as possible, be quantifiable in such terms as percentages, proportions, land areas, tonnes of carbon sequestered, number of species, budget allocation, and so on.

C. Data and information acquisition

37. As is reported in the regional studies (see annex), some of the required data and information exist in various countries. A strategy must be developed, however, to ensure unfettered access to the information and an effective sharing of the knowledge.

1. Request direct assistance from key United Nations agencies and intergovernmental organizations

38. Three United Nations agencies (the United Nations Development Programme, the United Nations Environment Programme and the Food and Agriculture Organization of the United Nations) maintain records on the majority of the required information. Once the list of indicators is finalized, the COP could request assistance from these organizations in generating information for the first national reporting period.

2. Create a repository for UNCCD-relevant information

39. The COP may consider coordinating and organizing the currently disparate efforts through a single website or database. This site would at first simply provide links to databases containing relevant information. Over time, however, the site could be enhanced to become an

accessible, searchable repository for current and archived information relevant to the achievement of UNCCD objectives at the national, regional and global levels. The site would be improved over time as data and information generated from the reporting process feed into the repository, strengthening and deepening the amount of information available. This would create an organic learning loop for planning, activity and reporting housed in a single site.

D. Required capacity-building

40. The list of capacity-building that will be needed for effective use of the various indicators is a long one (See table A.4 below).

41. Following a call made by the Parties at the seventh session of CRIC, the secretariat initiated in collaboration with the United Nations Environment Programme (UNEP) and the Global Environment Facility a capacity-building partnership for monitoring and assessing the implementation of The Strategy and the Convention, starting in 2010 with a performance review according to proposals laid out in document ICCD/CRIC(8)/4. It is to be noted that the approach to capacity building adopted by this partnership will enable Parties to provide scientifically credible information on impact indicators, performance indicators and other related information pertaining to measuring investment flows and reporting on best practices. Although focusing on servicing Parties for capacity-building for UNCCD implementation, the partnership will attempt, to the extent possible, to include overlapping observation requirements from the other Rio conventions in order to promote synergistic implementation and reporting, thereby reducing the reporting burden at the national level.

IV. Concluding remarks

42. CST has taken steps to provide advice to the COP on how best to measure progress on strategic objectives 1, 2 and 3 of The Strategy by identifying a minimum set of impact indicators, complete with the required data and information, and the potential sources; appropriate methodologies for compilation; and the required capacity-building to ensure effective utilization by partners.

43. It should be noted that CST has recommended a minimum but not an exclusive set of indicators.

44. Parties should be encouraged to use this minimum set to allow for some measure of comparison and to facilitate exchanges and sharing of information, data and technology. Parties with the capacity to do so are encouraged to use other indicators as long as these fit into the underlying logic of measuring the impact of activities carried out within the ambit of the UNCCD on affected populations, their ecosystems and the global community at large through the generation of global benefits.

45. The work is not yet complete and a number of issues need to be tackled after COP 9 and during the intersessional period to ensure that the indicators can be used effectively for the first reporting cycle in 2012:

(a) The UNCCD 1st Scientific Conference in September 2009 will tackle issues regarding the biophysical and socio-economic monitoring and assessment of desertification and land degradation. Some of the outputs from the Scientific Conference could be used to refine the advice on how best to measure progress on strategic objectives 1, 2 and 3 and to consolidate the minimum set of indicators;

(b) The strategies and approaches required to address capacity-building, access to data and information and some level of methodology harmonization need to be developed in order to ensure the implementation of related recommendations made in this report;

(c) The COP may wish to provide guidance on the proposals made in this report and consider inviting Parties and other interested organizations with the capacity to do so to make available the necessary funding for required capacity-building in affected countries.

Annex**The process and activities undertaken to select the minimum set of impact indicators****A. Framework document**

1. As a first step towards carrying out the assignment of the Conference of the Parties (COP), a framework document, “Elements for provision of advice on how best to measure progress on strategic objectives 1, 2 and 3 of the 10-year strategic plan and framework to enhance the implementation of the Convention (The Strategy)”, was prepared by the secretariat, and presented and discussed at the first special session of the Committee on Science and Technology (CST S-1), held in Istanbul in November 2008. The document highlighted the procedures and methodologies, based on the use of impact indicators, to be put in place in order to optimally measure progress on the achievement of the three strategic objectives in question. It also noted that the value of any indicator strongly depends on the quality of data and information collected and processed, and hence the need for CST to work towards some form of harmonization or standardization of methodologies for the collection and processing of the data and information required to measure impact indicators. Finally, the paper noted that, although information and data exist that could be used as a proxy by developing country Parties, it might be important to consider a medium- to longer-term capacity-building initiative to ensure the future autonomy of the Parties in measuring the indicators.

2. The document together with the outputs of the CST deliberations provided inputs for the preparation of an in-session document (ICCD/CST(S-1)/5/Add.1), which outlined the concrete steps to be taken and activities to be carried out for the selection of a minimum set of impact indicators that are coherent with the seven core indicators related to strategic objectives 1, 2 and 3 as outlined in The Strategy, and a rapid capacity needs assessment of affected Parties for effective utilization of the indicators.

3. Three sets of studies were carried out to achieve the selection of a minimum set of impact indicators and identify the short- to medium-term capacity-building needs of the Parties: (a) global consultations of affected Parties on currently utilized impact indicators of relevance to the three strategic objectives; (b) regional consultations on methodologies for collecting and using the required data as well as capacity-building needs to ensure an effective utilization of the identified minimum set of impact indicators; and (c) identification of United Nations agencies and intergovernmental organizations (IGOs) that have the existing information and data required to effectively use the identified minimum set of indicators on either a default or a complementary basis.

B. Global consultations of affected Parties on currently utilized impact indicators of relevance to the three strategic objectives

4. The objective of these consultations was to select a minimum set of impact indicators that takes into account and builds on, but is not bound by, the seven core indicators described in The Strategy for measuring progress on the achievement of strategic objectives 1, 2 and 3.

5. Two instruments were used to address this objective:

(a) An in-depth review of the literature on indicators currently being used by other conventions, agencies and regional institutions, or being developed by such organizations as the Food and Agriculture Organization of the United Nations (FAO), the Global Environment Facility, the World Bank, the Sahara and Sahel Observatory and so on;

(b) A set of questionnaires on impact indicators already in use by affected country Parties administered through their national focal points (NFPs) and science and technology correspondents (STCs). The questionnaire was structured in such a way as to get, for each core indicator, a list of related impact indicators in use at the country level and an estimate of their degree of measurability, reliability, simplicity, applicability and cost-effectiveness. An analysis and summary of the responses received resulted in the identification of the most common indicators used by the affected Parties.

Some outputs

6. Some interesting and relevant indicators, for which data and methodologies are available, were obtained from the literature:

(a) Land cover measured as fractions of cropland, forest, rangeland, urban areas, and so on;

(b) A land productivity “greenness” measure to reflect land productivity trends;

(c) Rural income broken down into:

(i) the fraction of population living on less than US\$ 1 per day, as a measure that is globally used and accepted;

(ii) income per capita distribution.

(d) Net primary productivity trends determined by normalized difference vegetation index (NDVI) analysis through remote sensing and corrected for climatic influences such as rainfall use efficiency;

(e) Carbon stock changes related to land use and land-use change.

7. A summary of the feedback received from the questionnaires is provided in table A.1 below. A total of 54 responses were received from the 173 sets of questionnaires, a response rate of 31 per cent. The data in the table give a good indication of the large number of indicators that are being used in the countries and emphasize the need for a minimum set of common indicators to allow for some measure of comparability.

Table A.1
Analysis of the feedback received

Language	Number of returned questionnaires	Number of indicators in use	Breakdown of indicators per strategic objective (SO)		
			SO.1	SO.2	SO.3
English	32	1016	368	324	305
French	8	158	61	52	45
Spanish	11	198	88	7	53
Arabic	1	21	10	3	8
Russian	2	51	10	16	16
Total	54				

Rate of return (54/173) = 31 %

8. The table shows the large numbers of disparate indicators currently in use in affected country Parties. What is not shown in this summary table, but was obvious from the raw data, is that countries in the same region or subregion and with similar socio-economic and even ecological conditions are not using similar indicators to measure the impact of activities carried out to combat desertification. For example, five of the reporting francophone countries are all members of various regional bodies and have carried out collaborative programmes designed to identify indicators and benchmarks, and to harmonize and share methodologies and data, but similar indicators were not reported. The same observation holds true for the reporting Latin American countries.

9. The large number of indicators reported suggests that CST is right to recommend that a minimum set of impact indicators be identified and recommended for use by all affected country Parties, if only to ensure effective tracking of progress and promote knowledge and information exchange within and across regions.

10. It should be noted that, despite the large number and diverse range of indicators used, some common trends were observed.

11. On the basis of the review and the consultations via the questionnaires, as well as a preliminary series of analyses and syntheses, a first set of 13 indicators was selected covering the three strategic objectives, guided by the criteria of measurability, reliability, simplicity, applicability at the national and the global levels, cost-effectiveness, the special circumstances and needs of developing countries and the availability of existing data. This first set, shown in table A.2 below, was used for the set of regional consultations described below and then further refined into the minimum set of 11 impact indicators.

Table A.2
First set of identified impact indicators

Strategic objectives (SO)	Associated indicators
SO1: To improve living conditions of affected populations	SO1.1 Proportion of population living above the poverty line
	SO1.2 Childhood malnutrition and/or food consumption/calorie intake per capita
	SO1.3 Changes in the productivity of land use
	SO1.4 Proportion of population with water stress
SO2: To improve the conditions of the ecosystems	SO2.1 Land-use change
	SO2.2 Level of land degradation (including salinization, wind and water erosion, etc.)
	SO2.3 Plant and animal biodiversity
	SO2.4 Aridity index/water use efficiency
SO3: To generate global benefits through effective implementation of the Convention	SO3.1 Land under sustainable land management
	SO3.2 Afforestation/regeneration areas
	SO3.3 Recurrent drought in affected areas
	SO3.4 Level of government policies on sustainable land management
	SO3.5 Carbon stocks

C. Regional consultations on methodologies for collecting and using the required data as well as capacity-building needs to ensure effective utilization of the identified minimum set of impact indicators

12. Regional consultations were carried out in all five regional annexes, grouped as follows:

- Africa
- Asia
- Latin America and the Caribbean
- Eastern Europe Group/Western Europe and Others Group.

13. The objectives of the consultation, which ensured widespread regional participation and input into the exercise, were:

(a) To document and review the methodologies currently being used in the region for collecting, analysing and monitoring the data and information needed for the recommended minimum set of indicators;

(b) To analyse and recommend required training and capacity-building activities to ensure future autonomy in affected countries for the collection, analysis and monitoring of the data and information required to effectively use the indicators;

(c) To review existing baselines used in conjunction with the strategic indicators by affected Parties in the region, and recommend suitable ones that could be used as defaults on a region-wide basis;

(d) To make recommendations on a harmonized process and the methodologies required to implement the minimum set of indicators.

14. The consultation was carried out by the administration of questionnaires to country Parties in the various regions, with the active participation of the NFPs, the STCs, the CST Bureau members from each region, and the regional coordination functions, where they exist.

Some outputs

15. All regional teams addressed the four objectives. Although slightly different approaches were used to analyse the questionnaires it is possible to summarize the outputs of the regional consultation under the following headings:

- (a) Current level of use of indicators in the suggested minimum set;
- (b) Methodologies and baselines;
- (c) Capacity-building needs;
- (d) Some regional differences.

Current level of use of minimum set of indicators

16. Table A.3 summarizes the current level of utilization of the various indicators in the minimum set.

Table A.3
Current level of utilization of the minimum set of indicators

High (Used by over 50% of Parties)	Medium (Used by 30–50% of Parties)	Low (Used by 6–20% of Parties)
SO1.1 Proportion of population living above the poverty line	SO1.3: Changes in the productivity of land use	SO1.4: Population with water stress
SO1.2: Childhood malnutrition and/or food consumption per capita	SO2.1: Land-use change	SO2.3: Plant and animal biodiversity
SO2.2: Level of land degradation	SO2.4: Aridity index/water use efficiency	SO3.3: Recurrent drought in affected areas
SO3.2: Afforestation/regeneration areas	SO3.1: Land under SLM	SO3.4: Level of government policies on SLM
	SO3.5: Carbon stocks	

Methodologies and baselines

17. Similar units of measurement and similar methodologies are used across the regions in conjunction with the utilization of the four most highly used indicators. Very little harmonization or standardization will therefore be required for these indicators, and most countries would be in a position to start or continue using them without much delay caused by a lack of either capacity or data. Nonetheless, substantial differences in methodologies exist for other indicators which must be urgently addressed. The baseline years and monitoring frequencies associated with the various indicators varied significantly within and across the regions.

Capacity-building needs

18. A synthesis of the identified capacity-building needs is set out in table A.4.

Table A.4

A summary of regional capacity needs assessment outputs

Human resource capacity development	Institutional capacities	Financial needs	Research needs
Specialized training in:	Strengthen national coordinating units to:	Financial support for procurement of:	Additional research in areas such as:
(a) Remote sensing techniques (b) Carbon stocks assessment (c) Statistical analyses for data processing (d) Software use (SPSS, CSPro) (e) GIS, spatial analysis, surveying and monitoring techniques plant and animal taxonomy (f) Specialized data collection including ground truthing	(a) Establish regulatory and technical frameworks and spatial data infrastructures (b) Update data collection and methodologies (c) Increase awareness of relevance of monitoring and assessing impact	(a) Software and equipment such as: UNFCCC software on greenhouse gas inventories focused on land use, land-use change and forestry (b) Licence costs for software and training costs (c) Ancillary cartography, satellite images, aerial photographs (d) Stocktaking material (e.g. hardware) (e) Other equipment	(a) Sustainable land management (b) Biodiversity assessment (c) Carbon accounting (d) Impacts of land degradation/ desertification on human health and the environment

Some regional differences

19. As expected, a comparative analysis of the regional reports revealed some regional differences which should be taken into account as the process is further developed and the minimum set of indicators is refined and used. These differences revolve around the following issues:

(a) Methodological approaches to data collection and use: steps should be taken subsequently towards harmonization and uniformity to ensure some level of comparability across regions;

(b) Data and information availability varied across the regions: one reason often cited for not using a number of the indicators in the minimum set was a lack of information and data. Further analyses will be required, once agreement is reached on the minimum set of indicators, to identify the repositories of the required data and information in order to encourage and facilitate interregional exchanges of information, data and knowledge;

(c) Appropriateness and relevance of some indicators. Some indicators were found to be extremely relevant by some regions. For example the Latin America Group recommended that, given the importance of forests to the region and the usefulness of forest cover as an indicator of sustainable development, a special effort should be made to monitor SO3.2 (afforestation and regeneration of areas). The Eastern Europe/Western Europe and Others Group, on the other hand, found some of the indicators less appropriate, either because the condition monitored does not exist or is limited to urban areas (proportion of population living above the poverty line) or because the indicator was not specific to desertification (access to safe water, or childhood malnutrition).

20. The differences and comments received were considered during the final stages of the selection of the recommended minimum set of indicators and should be kept in mind for future refinements.

D. Identification of United Nations agencies and intergovernmental organizations that have the information and data required to effectively use the identified minimum set of indicators either on a default or complementary basis

21. The objectives of this study were:

(a) To identify the relevant United Nations agencies and IGOs that collect, analyse and monitor data that could be used for UNCCD reporting purposes in particular with regard to strategic objectives 1, 2 and 3;

(b) To produce an outline of the data and information related to the minimum set of indicators for strategic objectives 1, 2 and 3 available at such international organizations that could be used on a default basis by countries for the first reporting process;

(c) To suggest possible scenarios and mechanisms for sharing such information and data in order to temporarily compensate for the lack of data at the national, subregional and regional levels.

22. The objectives were addressed by a rapid review of all United Nations agencies and IGOs that collect and manage information related to all the 13 success indicators for the 3 strategic objectives.

23. Many United Nations agencies and IGOs are able to provide information relevant to the indicators. Although this information is generally free for public use, it is often scattered among a wide array of sources. Finding this information even on public websites often requires a significant amount of detailed research. This presents a major challenge and time commitment for reporters and indicator evaluators. Moreover, complete reliance by national level reporters on access to the information and data available on United Nations agency and IGO websites is likely to result in reporting gaps, unless it is facilitated significantly.

24. The study also highlights points which need to be factored into future decisions and activities with regard to the provision of the required information and data from such global public sources: (a) no single IGO or United Nations agency actively maintains a complete set of the relevant data for measurement of the indicators; (b) since the strength of the data and frequency of collection differ to some extent by topic, region and country, accurate comparisons may be difficult; (c) traditional issues, such as nutrition, are employed for a variety of policy reasons over long periods and have strong data sets, but accessing esoteric data such as “sustainable forest cover” and newer concepts such as carbon stocks may pose challenges to most practitioners; and (d) nearly all the available data are provided free of charge, although those already packaged for use in information media such as CDs may have to be purchased.
