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SEMI-ARID FOOD GRAIN RESEARCH AND DEVELOPMENT



AU-SAFGRAD

Strengthening the role of science and technology in combating desertification in Africa



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List of Acronyms and Abbreviations

AfDB	African Development Bank
AU	African Union
AUC	African Union Commission
CBOs	Community-Based organizations'
CIFOR	Centre for International Forestry Research
CILSS	Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel
CIMMYT	International maize & Wheat Improvement Centre
CIP	International Potato Center
CITA	International center for Tropical Agriculture
CoE	Center of Excellence
COMIFAC	Central African Forest Commission
COP	Conference of Parties
CSOs	Civil Society Organizations
CST	Committee of Science and Technology
CST	Committee of Science and Technology
DLDD	Desertification, land Degradation and Drought
DNI	Desert Net International
ELD	Economics of Land Degradation
FAO	Food and Agriculture Organisations of the United Nations
FARA	Forum for Agricultural Research in Africa
GEF	Global Environment Facility
GEO BON	Group on Earth Observations - Biodiversity Observation Network
GM	Global Mechanism

GPC	Global Policy Centre on Resilient Ecosystems and Desertification
HOSG	Heads of State and Government
ICARDA	International Center for Agricultural Research in the Dry Areas
ICRAF	World Agroforestry Centre
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IGAD	Intergovernmental Authority on Development
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
IPBES	Intergovernmental Panel for Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IRRI	International Rice Research Institute
ITPS	Intergovernmental Technical Panel on Soils
IWMI	International Water Management Institute
KMST	Knowledge Management, Science and Technology
LDN	Land Degradation Neutral
LDR	land degradation and restoration
MEAs	multilateral environmental agreements
NAPs	National Action Programmes
NEPAD	New Partnership for Africa's Development
NFPs	National Focal Points
NGOs	Non-Governmental Organizations
PRAIS	Performance Review and Assessment of the Implementation System
RAP	Regional Action Programme

RCU	Regional Coordination Unit
RECs	Regional Economic Communities
SADC	Southern African Development Community
SAFGRAD	Semi-Arid Food Grain Research and Development
SASSCAL	Sahara and Sahel Observatory (OSS);Southern African Science Service Centre for Climate Change and Adaptive Land Management
SDGs	Sustainable Development Goals
SLM	Sustainable Land Management
SPI	Science and Policy Interface
SRAPs	Sub-regional Action Programmes
STCs	Science and Technical Correspondents
TPNs	Thematic Programme Networks
UMA	Arab Maghreb Union
UNCCD	United Nation Convention to Combat Desertification
UNDDD	United Nations Decade for Deserts and the Fight Against Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	
WASCAL	West African Science Service Center on Climate Change and Adapted Land Use
WB	World Bank
WISP	World Initiative for Sustainable Pastoralism
WOCAT	World Overview of Conservation Approaches and Technologies
WOCAT	World Overview of Conservation Approaches and Technologies

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Foreword

Desertification has played a significant role in human history, contributing to the collapse of several large empires, as well as causing displacement and relocation of local populations. It is also the cause of most conflicts arising from natural resources use with attendant loss of lives and properties and large scale emigration.

Arable land is vital for Africa, both as a key asset for farmers and, together with vegetation, to help store carbon that would otherwise be emitted into the atmosphere and contribute to climate change. Two decades ago, the first “Earth Summit” in Rio 1992 gave birth to three conventions, including the UN Convention to Combat Desertification (UNCCD).

It must be borne in mind that combating desertification is a collective responsibility. Putting into account that the causes are cumulative and often unobserved the effects are loud and devastating. All hands must be on deck to stop this great scourge that seeks to consume entire population and the continent. Policy and decision makers at all levels, scientist, farmers, development planners, women, youths and children must all be involved.

At the continental level, the African Heads of State and Government (HOSG) in 2014, during the 22nd ordinary summit renewed their commitments to combating desertification. The HOSG pledge their commitments to implement the UNCCD protocol to address issues of land degradation, desertification, biodiversity loss and effects of drought so as to promote sustainable development on the Continent. The HOSG requested Africa Union Commission (AUC) to support Regional Economic Communities (RECs) and Member States in collaboration with Partners to review the Regional Action Programme to combat desertification in Africa and to align it to the UNCCD Ten Year Strategy with the view to support poverty reduction and environmental sustainability on the Continent.

The African Union-SAFGRAD as the African Union specialized Technical Office working in dry land areas prepared this study to be submitted to the African Union organs for having concrete recommendations for strengthening the role of science and technology in combating desertification in Africa.

Dr. Ahmed Elmekass
Coordinator, AU-SAFGRAD

Executive Summary

The Semi-Arid Food Grain Research and Development (SAFGRAD) Office of the African Union (AU) in Burkina Faso launched an investigation to determine how the STC's (Science and Technical Correspondents) and NFPs (National Focal Points) collaborate at national and sub-regional levels and how they can support the CST (Committee of Science and Technology) Bureau, a subsidiary body of the United Nations Convention to Combat Desertification (UNCCD).

The structures and goals of the UNCCD and its 10year (2008 – 2018) strategic plan are discussed in the document. The regional and sub-regional cooperation units that exist for the African region and the programmes implemented by the UNCCD Secretariat to assist the functioning of the Convention are mentioned. The roles and objectives of a some projects, programmes and networks that currently exist in the five sub-regions of Africa and conduct activities regarding Desertification, Land Degradation, and Drought (DLDD) are briefly discussed.

The functioning and aims of the Regional Economic Communities (RECs) and possible funding sources that support DLDD activities, including the major implementing agencies that monitor and assess DLDD work in Africa, are also briefly mentioned. Data were collected using a questionnaire that was e-mailed to STCs and NFPs of the 54 UNCCD Member States in Africa. Questionnaires were also e-mailed to scientists in Africa who attended the Intergovernmental Panel for Biodiversity and Ecosystem Services (IPBES) workshop in Pretoria (August 2015), who indicated that they are doing DLDD related activities for the UNCCD in their countries. A total of 19 e-mail responses (35%) were received. From the information received by the e-mail responses, another questionnaire was compiled and handed out at the African Regional Preparatory meeting for the UNCCD-COP 12 that held in Ankara, October 2015. The African Regional meeting was held in Pretoria during the first week of September 2015. A total of 27 questionnaires of the 47 countries that attended the meeting in Pretoria were completed (57.4%). However, some delegates responded by e-mail, as well as per questionnaire at the Pretoria meeting. In total, 37 countries therefore responded (68.5%).

Apart from the analysis by e-mail responses and the Pretoria meeting questionnaire, the methodology of this review was mostly carried out by a desk-top study. The study

revealed that there is the need to enhance the knowledge and capacities of delegates as well as to promote dialogue between STCs and NFPs at national, sub-regional and regional levels. Many delegates are also of the opinion that more funding is needed to strengthen the roles of science and technology in Africa and to attend more UNCCD-CST scientific conferences. Updating the National Action Programmes (NAPs) and Sub-regional Action Programmes (SRAPs) also needs urgent attention. All these recommendations could be achieved by establishing a Center of Excellence (CoE) for DLDD in each sub-region in Africa, having more and regular meetings among STCs and providing a better advisory structure regarding UNCCD matters in Africa.

1. Introduction

The African Union Heads of State and Government in their 22nd Ordinary Session in Africa (January 2014) adopted decision 492(XXII) on enhancing the implementation of the UNCCD in Africa. Therefore, AU-SAFGRAD office started an investigation on how to strengthen the role of the STCs (Science and Technical Correspondents) and their linkages with the NFPs (National Focal Points) and policy makers at different levels . Moreover to enhance their inputs in the UNCCD-CST (Committee of Science and Technology) for Africa. Data were collected using questionnaires that were given to STCs and NFPs of the 54 UNCCD Member States by email or handed out to them during the preparatory meeting for UNCCD-COP12. The outcome of the questionnaires is analyzed and discussed. The document represents an overview of the UNCCD and related supporting structures. Then, the results of the country responses are discussed. The conclusion and the proposed recommendations are also highlighted.

2. An overview of the UNCCD and related supporting structures

2.1 The Strategic ten year plan (2008 – 2018) of the UNCCD

The United Nations Convention to Combat Desertification (UNCCD) was established in 1994, just after the Rio Earth Summit in 1992. The Convention addresses specifically the arid, semi-arid and dry sub-humid areas, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found. The UNCCD is divided into 5 regions, i.e. Africa , Asia , Latin America and the Caribbean , North Mediterranean and Central and Eastern Europe. In the 10-Year Strategy of the UNCCD (2008-2018) that was adopted in 2007, Parties to the Convention further specified their goals, i.e. “to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability”. The Convention’s 195 parties work together to improve the living conditions for people in drylands, to maintain and restore land and soil productivity, and to mitigate the effects of drought. The UNCCD is particularly committed to a bottom-up approach, encouraging the participation of local people in combating desertification and land degradation. The UNCCD secretariat facilitates cooperation between developed and developing countries, particularly around knowledge and technology transfer for sustainable land management.

The UNCCD works closely with the other two Rio Conventions, i.e. the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC). At the eighth session of the UNCCD Conference of Parties (COP 8) in

Madrid, 2007, the 10-year strategic plan (The Strategy) and framework to enhance the implementation of the Convention (2008–2018) was adopted (Decision 3/COP.8). The Strategy emphasizes that all Parties should take into account the different obligations within the Convention, recognize their primary responsibilities and implement the strategies, according to their national priorities and in a spirit of international solidarity and partnership. The Strategy has three strategic objectives and five operational objectives which guide the actions of all UNCCD stakeholders and partners in the period 2008–2018.

Operational objective 3 of the Strategy focusses on “Science, technology and knowledge” and urges the UNCCD “to become a global authority on scientific and technical knowledge pertaining to desertification/land degradation and mitigation of the effects of drought”. The six outcomes of this operational objective include:

- (a) A national monitoring and vulnerability assessment on biophysical and socio-economic trends in affected countries should be carried out;
- (b) A baseline should be developed that is based on the most robust data available on biophysical and socioeconomic trends and the relevant scientific information must be harmonized;
- (c) Knowledge on biophysical and socio-economic factors and their interactions in affected areas should be improved to enable better decision-making;
- (d) Knowledge of the interactions between climate change adaptation, drought mitigation and restoration of degraded land in affected areas is to be improved to develop tools to assist decision-making;

- (e) Effective knowledge-sharing systems, including traditional knowledge, are in place at the global, regional, sub-regional and national levels to support policymakers and end users;
- (f) Science and technology networks and institutions relevant to desertification/land degradation and drought should engage and support the implementation of the UNCCD.

All 6 outcomes of operational objective 3, includes the work by the Committee on Science and Technology (CST). In order to fulfil this mandate, the CST shall be strengthened by e.g. the Science and Technology Correspondents (STCs) and the Roster of experts under the coordination of the National Focal Points (NFPs), assess, advise and support implementation on a comprehensive, objective, open and transparent basis. The latter shall be done regarding the scientific, technical and socio-economic information relevant to understanding the causes and impacts of desertification/land degradation, and shall inform UNCCD-COP decisions (COP - Conference of Parties).

2.2 National Focal Point (NFP)

Each Party to the UNCCD, as represented by National Government of the country, selects a representative to serve as the focal point for the Convention. This focal point is the official contact for UNCCD issues and related correspondence. The National Focal Points (NFPs) are the first and main point of contact for the Parties. The NFP appoints members to the CST and selects one STC and the Roster of experts.

2.3 The Committee on Science and Technology (CST)

The Committee on Science and Technology (CST) was established under Article 24 as a subsidiary body of the COP of the UNCCD and forms the CST Bureau, represented by one member of each of the five regions. Bureau of the CST is responsible for the follow-up of the work of the CST between sessions of the COP. The CST provides information and advice on scientific and technological matters relating to combating desertification and mitigating the effects of drought. The CST makes recommendations to the COP related to its various functions, which include research and review related to technology, facilitate and strengthen networking at the local, national and other levels. The CST is composed of government representatives competent in the relevant fields of expertise from each of the 5 regions identified by the UNCCD. The work programme of the CST was defined by COP 10, which also includes the (1) organization of UNCCD scientific conferences (three have already taken place in 2009, 2013 and 2015), (2) monitoring and assessment of the status and trends of desertification and land degradation to support policymakers and environmental managers and to identify national and global priorities for action. This includes the complex interactions among physical, biological, political, social, cultural and economic factors whereby the human-environment interactions are addressed related to DLDD, (3) giving International Scientific advice to all Parties, especially at regional level, (4) develop a comprehensive knowledge management system to address the various knowledge management tasks and needs under the Convention through a coherent, value driven and practical

knowledge management architecture and system that will enable new synergies, offer additional capacities, disseminate knowledge and scale up results, and (5) establish the Fellowship programme to support the development of political, legal and technical knowledge, skills and capacity relating to combating desertification and mitigating the effects of drought.

At COP 11 in Namibia, The Science and Policy Interface (SPI) was established with the goal to facilitate a two-way science-policy dialogue and ensure the delivery of policy-relevant information, knowledge and advice on desertification/land degradation and drought (DLDD),

The details of each of the 6 programmes of the CST are available from the home website of the UNCCD).

2.4 Science and Technology Correspondents (STC)

The STC must improve the efficiency and effectiveness of the Committee on Science and Technology (CST) and is selected under the coordination of the NFP. The responsibilities of the STC include, (1) enhancing relationships and networks with the scientific community at the local, national, regional and global level with the support of national focal points; (2) establishing a dialogue with scientists and technologists at the local, national, regional and global level, (3) measuring progress in the achievement of the strategic objectives of the Strategy and framework to enhance the implementation of the Convention and (4) help the NFPs with the reporting process to the UNCCD.

2.5 Roster of Experts

The Roster of independent Experts has been established in accordance with article 24, paragraph 2, of the Convention. It is maintained and managed by the UNCCD Secretariat. The purpose of the roster is to provide the COP with an up-to-date list of independent experts in the various fields of specialization relating to combating desertification and mitigating the effects of drought, from which members of ad hoc panels may be selected. The UNCCD secretariat is currently undertaking a validation process of Roster of Experts. National Focal Points are invited to confirm which of their experts currently in the roster are to remain as well as to nominate new experts. Unfortunately this process which should have been finished by the end of March 2014 is not completed. The roster is based on nominations received from Parties, taking into account the need for a multidisciplinary approach and broad geographical representation.

2.6 African regional cooperation

All African countries are members (Party states) to the UNCCD and most, although often outdated, have developed and submitted a National Action Programme (NAP). NAPs identify the countries inputs and objectives to address DLDD matters. It is estimated that nearly three-fourths of Africa is degraded to some degree which has serious consequences on agriculture and food production. Degradation results in severe poverty and difficult socio-economic conditions. Such circumstances are characteristic of many people in Africa, as most are dependent on the natural resources to make a living. DLDD and the mitigation thereof are

prerequisites to economic growth and social progress. People are often forced into internal and cross-border migrations, putting more strain on the environment and cause social and political tensions and conflicts.

The development, preparation and updating of the NAP is a dynamic and continuous process. The NAP should be based on a bottom-up approach whereby DLDD mitigation and resilience programmes are reviewed and adjusted by stakeholders, Non-Governmental Organizations' (NGOs), Community-Based organizations' (CBOs), local authorities and communities. The NAP must be integrated into the national strategies for sustainable development, e.g. the Poverty Reduction Strategy, and must be carried out through a consultative process between all stakeholders. Currently many African countries are preparing for the alignment of the NAP to the 10 year Strategy. The NAPs developed by each country should feed into the five Sub-Regional Action Programmes (SRAPs) and ultimately into the Regional Action Programme (RAP).

2.7 Regional Action programme (RAP)

The Regional Coordination Unit (RCU) in Tunisia supports the implementation of the RAP. The RAP composes of six thematic programme networks (TPNs), which includes (1) integrated water management, (2) agro-forestry and soil conservation, (3) the use of rangelands and fodder crops, (4) ecological monitoring and early warning systems (including remote sensing and mapping), (5) renewable energy sources and technologies, (6) sustainable agricultural farming systems. The RAPs and SRAPs provide a framework of coordinated actions among countries

and their key stakeholders which support the implementation of the NAPs.

2.8 Sub-regional Action Programme (SRAP)

As highlighted above, the Africa is divided into 5 sub-regions, each entrusted to develop a Sub-Regional Programme (SRAP) for the UNCCD. The 5 sub-regions are, the (1) Arab Maghreb Union (UMA) for the Northern Africa, (2) Permanent Inter-State Committee for Drought Control in the Sahel (CILSS) for West Africa, (3) Intergovernmental Authority on Development (IGAD) for East Africa, (4) Southern African Development Community (SADC) for Southern Africa, and (5) Central African Forest Commission (COMIFAC) for Central Africa. The SRAP seeks synergies with other regional objectives addressing similar problems and challenges, such as climate change, biodiversity loss and food security. SRAPs should align to the 10 year Strategy and improve their effectiveness in addressing DLDD.

The SRAPs for the sub-regions are:

a. Central Africa (COMIFAC)

The latest Central African SRAP that is published on the UNCCD website is from June 2007.

b. Northern Africa

The latest sub-regional action programme (SRAP) for the fight against desertification in the Maghreb region for North Africa (Algeria, Libya, Morocco, Mauritania and Tunisia) that is published on the UNCCD website is from August 1999.

c. Western Africa

The latest SRAP available for West African countries is from September 2013.

d. Eastern Africa (IGAD)

Intergovernmental Authority on Development (IGAD) who developed the East African SRAP, together with all the seven countries — Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan and Uganda latest SRAP that is on the UNCCD website is from June 1998.

e. Southern Africa (SADC)

The latest SRAP for SADC that is published on the UNCCD website is from July 1997. Apparently this SRAP will be updated in August 2015. The latest and updated SRAP for SADC should therefore be available before COP 12 in 2015.

2.9 Programmes by the UNCCCD

The UNCCD has launched several programmes to

NB: It was found that none of the SRAPs mentioned that policy makers will work with scientists in the different areas of DLDD for the UNCCD. The words “policy” occurred several times and that policy has to be established for different activities in the UNCCD framework, but the science-policy interface and how scientists can work together with policy makers was nowhere mentioned. This therefore seems to be a lack in all old and newly developed SRAPs for the UNCCD.

promote science and the collaboration between policy and other stakeholders in the UNCCD (also see Brahim, 2014). Most science and technology matters of the UNCCD is managed by the Knowledge Management, Science and Technology (KMST) unit at the UNCCD Secretariat. Programmes by the UNCCD include:

a. Land Degradation Neutral (LDN)

The objective of a Land Degradation Neutrality (LDN) is to maintain or improve the condition of the land resources. This can be achieved through the sustainable management of the soil, water and biodiversity in order to fully realize their economic, social and environmental benefits and the key dimensions of sustainable development. LDN also includes the restoration of degraded natural ecosystems that provide vital services to people and working landscapes. LDN was born out of the United Nations Conference on Sustainable Development (Rio+20) to strive and achieve a land-degradation-neutral world in the context of sustainable development. LDN forms part of the Sustainable Development Goals (SDGs), which include, to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and decrease biodiversity loss. Several countries in Africa are involved in the LDN projects. The five countries that pilot the LDN programme in Africa include Ethiopia, Algeria, Namibia, Chad and Senegal.

b. Ad hoc Advisory Group of Experts

AGTE followed an iterative, participatory and scien-

tific process for the refinement of the indicators that are used to measure progress made in the achievement of strategic objectives 1, 2 and 3 of the Convention (i.e. the progress indicators, formerly known as impact indicators). AGTE recommended the adoption of a monitoring and evaluation approach consisting of (1) six progress indicators common to all country Parties, (2) nationally/locally relevant indicators that could provide more detailed information on the level and characterization of land degradation that is specific to each context, (3) a conceptual framework for the integration of indicators. The recommended approach is based on a broader use of readily available global data sources. It attempts to link global level reporting with monitoring efforts undertaken at the national/local level and is open to both quantitative and qualitative information (i.e. narrative indicators drawn from local storylines and case studies). AGTE puts an emphasis on stakeholder participation.

c. Regional Thematic Programme Networks (TPNs)

As the global authority and normative reference on desertification, land degradation and drought (DLDD), the UNCCD promotes an enabling environment for policy responsiveness to existing policy gaps and ever evolving global challenges. Some of the policy barriers to address DLDD include the lack of information and data and the need for reform and implementation of science-based policy frameworks. The thematic priorities that are addressed include themes, such as biodiversity, climate change, food security forests, gender and water scarcity and drought.

TPNs are networks of institutions and agencies linked together via an institutional focal point. The TPNs have been established through regional endorsement directly or indirectly relating to a regional action programme. Regional, sub-regional and national focal institutions are expected to involve key actors at regional, sub-regional and national level in the respective affected countries. Cooperation with other networks working on related issues should be sought. However, it should be noted that whereas a number of TPNs are already in place, most of these networks have generally failed to meet their objectives and only some are active (ICCD/COP(10)/CST/6 and Brahimi, 2014).

d. UNCCD fellowship programme

The Committee on Science and Technology (CST) at its seventh session considered a draft proposal (ICCD/COP(7)/CST/INF.1) on the creation of a UNCCD fellowship programme. The Conference of the Parties, by its decision 15/COP.7, invited the Bureau of the CST to establish a need for such a programme taking into account national capacity self-assessment (NCSA) reports and existing fellowship programmes. A total of 152 institutions from developed country Parties were surveyed. Most countries have awareness-raising and training activities in order to seek their views on the establishment of a fellowship programme. The Bureau also considered the main conclusions and recommendations of 10 action plans developed under the NCSAs. The fellowship programme and NCSAs are funded by the Global Environment Facility (GEF) with the aim of assisting countries to assess their ca-

capacity for meeting their obligations under multilateral environmental agreements (MEAs), including the UNFCCC, CBD and UNCCD. The NCSA programme is unique in that it promotes synergy among the MEAs. Through the self-assessments, countries are expected to identify capacity gaps and formulate their own solutions to rectify these gaps.

e. The Land Degradation Assessment in Drylands (LADA)

The LADA project was carried out by the Food and Agriculture Organization (FAO) and funded by the GEF (Global Environment Facility). LADA developed tools and methods to assess the baseline condition of land degradation at global and national scale. These assessments are integrated with and supplemented by detailed local assessments focusing on root cause analysis of land degradation and local (traditional and adapted) technologies for sustainable land management (SLM). As a global outcome, the project has developed and validated with its partner countries a harmonized set of methodologies for the assessment of land use, land degradation and SLM practices at global, national, sub-national and local levels. Several international and regional organization were also partners, in particular, WOCAT (World Overview of Conservation Approaches and Technologies) which enabled the LADA project to generate a set of combined LADA-WOCAT tools and methods. The latter are increasingly being taken up by new countries at various scales. The GLADIS (Global Land Degradation Information Systems) and a LADA manual were developed, as well as several

awareness and training workshops held not only in the six countries where LADA was carried out, but also adjacent countries to cover the global spectrum.

f. Joint Liaison Group (JLG)

The secretariats of the UNFCCC, CBD and UNCCD established a Joint Liaison Group (JLG) in August 2001 in order to enhance coordination among the three conventions, and to explore options of further cooperation, including the possibility of a joint work plan. The JLG aims to collect and share information on the work programmes and operations of each Convention. Furthermore, its goal is to harness collaboration among the three secretariats and to review progress in the preparations for the joint workshop on synergy approaches.

g. UNCCD's Scientific Knowledge Brokering Portal.

The UNCCD established the Scientific Knowledge Brokering Portal (SKBP), which provides land managers and other global audiences with an interactive web-based map that illustrates SLM knowledge bases in the world. The UNCCD-SKBP knowledge base map depicts knowledge bases that have been reported as sources of SLM information by country Parties to the convention. Users can also search for knowledge bases based on specific criteria, namely, e.g. by country name or general thematic areas, covering the following topics, such as soil management, drought, crop management, deforestation, removal of natural vegetation, over-exploitation of vegetation, land

tenure, poverty, war/conflict, soil conservation, agronomy crops, grazing management, reforestation, water harvesting, soil erosion, biodiversity, water degradation, and climate change.

h. UNCCD-CSO

The UNCCD Civil Society Organizations (CSOs) panel plays a leading role in policy process and practice on the ground. CSOs are invaluable for partners to amplify the voices of vulnerable populations in policy process given their understanding of on-the-ground realities. CSOs build capacities, enable information exchange, establish new and innovative partnerships and represent the civil society in the UNCCD process. The CSO panel brings together representatives from different existing networks working in the fields of DLDD.

i. Performance Review and Assessment of the Implementation System (PRAIS)

The PRAIS project supports the UNCCD and its Parties in building capacity for effective monitoring and assessment of the progress made in achieving the poverty reduction and environmental sustainability which are objectives of the UNCCD and its 10-year Strategic Plan and Framework (2008 – 2018) to enhance the implementation of the Convention. Country Parties, Civil Societies, UN agencies, Intergovernmental Organisations, Non-Governmental Organisations and other stakeholders have to report to the UNCCD regarding the activities they undertake for the implementation of the Convention. The PRAIS portal is an

on-line reporting portal of the UNCCD, that collects and collates national, sub-regional and regional data for the production of objective, quantifiable and comparable performance indicators, tracking all the activities of the Convention, such as the financial flows, best practices of SLM, etc.

j. Science and Policy Interface (SPI)

At the 11th COP of the UNCCD and by decision 23/COP 11, the SPI was established to strengthen the dialogue between scientists and DLDD policy makers. The development of the SPI was one of the recommendations of AGSA (Ad Hoc Working Group on Scientific Advice) which was implemented by the UNCCD Secretariat and had the challenge to design a new mechanism for science-policy communication based on the best available scientific evidence. The mandate of the SPI includes to, (1) establish the approach to deliver each task assigned to it by the CST, (2) analyse, synthesize and translate relevant scientific findings and recommendations from DLDD-related scientific conferences, including upcoming UNCCD scientific conferences, the roster of independent experts, as well as from relevant stakeholders and networks into proposals to be considered by the CST for the consideration of the COP, (3) interact with existing multiple scientific mechanisms, in particular the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), Intergovernmental Panel on Climate Change (IPCC) and Intergovernmental Technical Panel on Soils (ITPS) and other new and existing scientific networks and platforms; and (4) assist the Bureau of the CST in organizing

the UNCCD scientific conferences and assessing their results.

One of the key topics of the UNCCD is that policy makers have difficulty in creating regulations and support policies that stop land degradation. Policy makers understand that by addressing land degradation and restoring the flow of ecosystem services of the land, it will lead to increased food security and poverty alleviation and ultimately support human well-being. Policy makers however lack the scientific foundation to link land degradation issues into policy. The SPI was therefore formed to identify these needs to integrate scientific knowledge into the policy making process and create mechanisms to address challenges of biodiversity loss, food security, poverty alleviation and the sustainable use of the land. The SPI consists of a body of globally renowned experts of DLDD, political scientists and members of the CST bureau. The SPI will identify breakthroughs to prevent land degradation and restore degraded land that are aligned with research programmes and policy needs. The objectives of the SPI includes, amongst others, to create cooperative opportunities between scientific bodies, such as the IPBES. IPBES has 18 deliverables of which one deliverable (3bi) includes a plan to undertake an assessment of land degradation and restoration (LDR) that coincides with objective three of SPI. See further information about IPBES below. The progress made by the SPI regarding the thematic assessment of LDR by the IPBES will be reported on at COP 12 in October 2015. The latter will include the (i) background, (ii) activities of the SPI, and (iii) analysis of the collaboration between

the SPI and IPBES. Three of the most important objectives of the SPI that will be reported on at COP 12 in 2015 include: (1) How the other Rio conventions bring the scientific evidence for the contribution of SLM and management to climate change adaptation/mitigation and how biodiversity and ecosystem services are safeguarded, (2) Increase the effectiveness of the UNCCD scientific conferences in delivering policy relevant information, knowledge and recommendations and (3) Ensure that the thematic assessment on land degradation and restoration (LDR) conducted by the IPBES is of relevance to the UNCCD and its Parties.

k. United Nations Decade for Deserts and the Fight Against Desertification (UNDDD)

The UNDDD is running from January 2010 to December 2020. UNDDD builds on the International Year of Deserts and the Fight Against Desertification (IYDD) from 2006 that was incorporated by the UN General Assembly. The main aim of UNDDD is to promote the actions that will protect the drylands and secure the long-term ability of drylands to provide value for humanity's well-being. This includes projects such as the finding of suitable crops or indigenous food that can be used in the dryland systems to eradicate poverty and accelerate the rehabilitation in degraded lands. UNDDD is spearheaded by many UN agencies, such as DPI (Department of Public Information), IFAD, UNCCD, UNDP and UNEP (see below for details).

I. Regional Coordination Unit (RCU)

The RCUs of the UNCCD secretariat actively sup-

ports the CST in facilitating networking with scientists and institutions and works with the institutional national focal points. The RCUs ensures that relevant information on activities under the UNCCD at the regional, sub-regional and national levels, such as outcomes of sessions of the COP and subsidiary bodies, is distributed to the concerned country Parties, including academics, institutions and networks. The RCUs work is reflected through science and technology correspondents.

3. Networks and International projects/ programmes in Africa

Many networks, as well as National and International projects and programmes exist in Africa. The aims of the projects differ and address various aspects of DLDD, as well as capacity building, poverty alleviation and SLM activities. The projects and/or programmes are carried out by various organisations in Africa and supported by local or international organisations.

The information and aims of some projects/ programmes and networks that are mentioned below available at their specific home websites. For further detail of each of the networks and/or programmes please consult their individual websites.

(Africa Asia Drought Risk Management Peer Assistance Network (AADP); African Union Commission (AUC) ; Africans Union's Semi-Arid Food Grain Research and Development (AU-SAFGRAD) ; New Partnership for Africa's Development (NEPAD-NPCA) ; TerrAfrica; Community Based Resilience Analysis (CoBRA); International Center for Tropical Agricul-

ture(CITA); International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)|International Livestock Research Institute (ILRI);International Center for Agricultural Research in the Dry Areas (ICARDA);International Water Management Institute (IWMI); International Institute of Tropical Agriculture (IITA) ; World Agroforestry Center ICRAF); International Food Policy Research Institute (IFPRI); International maize & Wheat Improvement Center(CIMMYT);Centre for International Forestry Research (CIFOR) ; International Potato Centre(CIP); International Rice Research Institute(IRRI); “Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel” (CILSS);DesertNet International (DNI);Economics of Land Degradation (ELD);Forum for Agricultural Research in Africa (FARA);Food and Agriculture Organisations of the United Nations (FAO);Group on Earth Observations - Biodiversity Observation Network (GEO BON) ;Global Policy Centre on Resilient Ecosystems and Desertification (GPC); Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES);International Fund for Agricultural Development (IFAD);Sahara and Sahel Observatory (OSS);Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL) ;Sustainable Development Goals (SDG); West African Science Service Center on Climate Change and Adapted Land Use (WASCAL);World Initiative for Sustainable Pastoralism (WISP); World Overview of Conservation Approaches and Technologies (WOCAT); African Regional Economic Communities (RECs)...
.etc

4. Funding sources

The main funding sources include :Global Mechanism (GM);The Global Environment Facility (the GEF);The World Bank (WB);The African Development Bank (AfDB); and Others

5. Implementing agencies

The four largest implementing agencies regarding DLDD matters in Africa include United Nations Environment Programme(UNEP),UN Development Programme(UNDP), International Union for the Conservation of Nature(IUCN) and Food and Agriculture Organization(FAO).

6. Methodology followed for this study

The review for this consultancy was mainly a desktop, including the following:

- a. Literature review from reports and websites.
- b. Review of documents received or published by the UNCCD Secretariat.
- c. Contact with the UNCCD library for possible documents/reports regarding the study.
- d. Internet web search of many projects, organisations and networks in Africa that do DLDD or relevant type of research and development.
- e. Collaboration with the UNCCD Secretariat in Bonn, regarding contacts, reports, etc.
- f. (by e-mail) sent to all STCs and NFPs in the 54 countries of Africa that are part of the UNCCD
- g. Close collaboration between AU-SAFGRAD on a

continuous basis.

- h. Interviews and discussions with scientists and policy makers at meetings and conferences i. Letters send by e-mail to at least 15 scientists in Africa that were met at the IPBES meeting in Pretoria, 3-7 August 2015 (Annexure III).
- j. A questionnaire was given to all country delegates that attended the African Regional preparatory meeting to UNCCD - COP 12 that was held in Pretoria in the week of 1-4 September 2015.
- k. Responses by NFPs and/or STCs and scientists that were answered by e-mail as well as the questionnaire that was handed out at the African Regional meeting that was held in Pretoria (1-4 September 2015) as preparation for the UNCCD-COP 12.
- l. Conclusions and recommendations were made from all internet web searches and responses.

7. Results from country responses

As mentioned, a questionnaire was also given to UNCCD member delegates that represented their country at the African Regional Preparatory meeting for UNCCD-COP 12 in Pretoria (1-4 September 2015). A total of 27 questionnaires of the 47 countries that attended the African Regional meeting in Pretoria were completed, but only 19 of 54 countries (35%) responded per e-mail. The total of response by e-mail and from the questionnaire answered at the African Regional meeting is therefore 46. However, some delegates from the countries responded by e-mail, as well as by answering the questionnaire at the Regional meeting. This means that the person that completed

the questions send out by e-mail and the person that completed the questionnaire in Pretoria who represented their country at the African regional meeting, were not the same. Some countries therefore responded twice. In total, 37 countries therefore responded, which is 68.5%. This high response by country delegates proves that the countries in the African Region representing the UNCCD are very positive regarding the role of science and technology for combating desertification in their area.

The NFPs and/or STC that responded by e-mail or country delegates attending the African Regional meeting in Pretoria (1-4 September 2015) for the five sub-regions in the African Region included the following. Country delegates that only completed the questionnaire during the Pretoria meeting, are marked by a “P”.

- Benin
- Botswana
- Burkina Faso
- Burundi
- Cameroon (P)
- Central African Republic (P)
- Congo
- Cote d’Ivoire (P)
- Egypt
- Equatorial Guinea (P)
- Eritrea
- Ethiopia
- Gabon (P)
- Gambia

- Ghana
- Guinea-Bissau (P)
- Kenya
- Lesotho (P)
- Libya
- Malawi (P)
- Mali (P)
- Mozambique (P)
- Namibia
- Niger (P)
- Nigeria
- Republic of South Sudan
- Sao Tome et Principe (P)
- Seychelles (P)
- Somalia (P)
- South Africa
- Swaziland (P)
- Tanzania (P)
- Togo
- Tunisia
- Uganda
- Zambia
- Zimbabwe (P)

The answers and responses from the questions sent per e-mail were used to develop the questionnaire that was given to the delegates at the African Regional meeting in Pretoria. The responses by delegates after the Pretoria meeting are discussed later, but did not differ much from the responses by e-mail. The questions and responses that were received by STCs

and/or NFPs per e-mail are as follows:

7.1 Question 1

STC & NFP: What are the priorities on land degradation and desertification in your country and how are you addressing them?

a. Priorities regarding question 1 identified at country level include:

- Loss of soil fertility because of continuous mining of the soil from repeated cultivation and monocropping without concomitant fertility replenishment measures.
- Increased soil erosion of top soil due to a lack of vegetative cover in the agricultural and pasture lands; siltation of low lying areas.
- Deforestation because of lack of alternative energy sources for household use.
- Degradation of natural pasture and rangelands because of overstocking and drought.
- Increased population pressure.
- Increased conflicts for natural resources, especially in the dry lands.
- Misuse of pesticides and awareness about Stockholm Convention on Persistent Organic Pollutants (POPs).
- Production of a best practices guides for the use of different natural resources and combating land degradation.

- Inadequate awareness of DLDD and sustainable land and water management (SLWM) technologies and low adoption of SLWM technologies.
- Inadequate capacity to address land degradation and desertification problems.
- Lack in improving household welfare (e.g. livelihoods, food security, higher income; diversification)
- Lack in building sectorial collaboration and synergies regarding SLM.
- Lack in policy/regulation formulation on sustainable land and water resources management and lack in preparing strategic- and development plans over short- and long-term;
- Lack of capacity to develop and enhance institutional and human resources capacity.
- Lack in awareness by general public about policies/regulations and how to strengthen the relationship among extension/development agents, researchers and farmers.

b. Measures taken to address the problem:

- Production of good/best practice guides.
- The various strategies and policies developed to respond to donors' and the international community's efforts towards combating desertification and land degradation cover the main priorities.
- Better cropping systems approaches, moisture conservation and water harvesting measures, and integrated soil fertility methods including use of organic amendments and inorganic fertilizers.

- Improved soil, water and land management methods e.g. contour ploughing and terracing are used to prevent erosion and conserve soil; Rehabilitation of degraded areas.
- Nation-wide re-forestation programs by mobilizing urban and rural populations.
- Policy formulation to guide human activities & enforcement of the regulations and legislations; Implement policies and projects, such as Participatory Forest Management (PFM), Environmental Management Project (GEMP), Integrated Drylands Development Programme (IDDP) and the establishment of a National Coordinating Committee to Combat Desertification (NCCD) (Ghana); National Guidance and Oversight Board (NGOB) (Togo); SLM Strategic Investment Framework (Uganda), National Platform for Sustainable Land Management (NPSLM) and Strategic Framework for Investment in Sustainable Land Management (SFI/SLM) (both Burkina Faso), Médenine Institute for Arid Regions (IAR) (Tunisia);
- Establish Platforms and committees that bring together the key sectors and role players e.g. The Inter-Ministerial Cooperation Framework promoting country platforms for effective stakeholder participation, particularly CSOs and NGOs; Implementation of the NAP for the UNCCD at all levels and according to strategies and priority actions, including SLM programmes at all levels; development of the National Coordinating Body (South Africa), etc.
- Implement population control measures.
- Enhance rural land tenure security.

- Inclusion of land degradation and desertification concepts in school curricula starting from kindergarten to university levels; Establishment of “green clubs” in schools and religious places.
- Development of institutional and human resources capacity.
- Develop and distribute affordable and efficient cost-effective alternative sources of household energy.
- Assessment and Mapping of Desertification Sensitivity in agro- ecological zones.

7.2 Question 2

STC: Briefly describe your relationship and support to the NFP in your country. Please highlight the main constraints.

NFP: How functional is the NFP for the UNCCD in your country and how does the STC support you?

- Kenya, Ghana, Sudan, Ghana, Togo, Eritrea, Uganda, Burkina Faso, Congo Brazzaville and Namibia: All countries express similar ideas, i.e. the STC and NFP relationship is cordial, transparent, UNCCD business oriented both at the global national levels and highly consultative with mutual respect. Both are involved in e.g. establishment of the Sustainable Land and Water Resources Management (SLWM) Platform, the organization of land degradation awareness and workshops involving relevant stakeholders, development of interventions programs, such as Climate Smart Agric Program; working together with partners like Terrafrica, NEPAD, COMESA, AU, WB, GEF to ad-

dress land degradation and desertification issues, organization of Annual World Desertification Day activities at the national level, preparation of the NAP and alignment of the NAP to the Strategy, the organization national workshops, distribution of scientific and technical information, develop training and information programs at the community level, coordinating experts of different disciplines to prepare information, education and communication (IEC) materials on issues related to land degradation and desertification and control measures, collect and update data on sustainable land and water management and create awareness at the national and community level on the NAP implementation.

- The NFP serves as an interface between the UNCCD and the country. It is the first resource person in the land degradation theme. The focal point seeks and collates the required information relating to land degradation control and provides it to anyone that needs it.
- The STC is involved in all activities of the Convention. To the extent possible, it provides available scientific and research information.
- Often the STCs and NFPs go together to COPs and CST conferences.

Main constraints and recommendations include:

- Limited funding to expand the awareness activities and also to attend some of the capacity building trainings outside the country and even participate in meetings like the CRIC and COPs;
- Time allocation for the support to NFP; STC's and NFPs.

- STCs and NFPs do not always plan activities together, as the STC is a scientist and the NFP is at Government and policy level. Although certain structures, platforms and committees are in place, there is a limited feedback framework for the recommendations made by STCs and NFPs, as they work at different levels and organisations.
- Rapid turn-over of NFPs and STCs (4 NFPs and 3 STCs in five years) in one country.
- STCs are often at academic and/or research institutions and do not have enough time for UNCCD work.
- Poor communication with the other partners by STCs.
- Translate documents that are only in English to French for French speaking countries in Africa.
- The STC is only responsive only on an ad hoc basis. It needs to acquire more visibility given that it is under the umbrella of different ministries/ organisations.

7.3 Question 3

STC & NFP: Which of the three UNCCD scientific conferences have you as the STC or NFP of your country attended and did you make any inputs at the CST meetings? If not, what were the obstacles for not attending the UNCCD scientific conferences or making inputs?

Responses by countries

- Attendance to UNCCD-CST conferences differ due to the rules and regulations by each country, made by policy makers.

- STCs also make inputs to other committees, workshops, surveys and contact groups at STC, CST and COPs, e.g. the UNCCD Scientific and Technical Committee and drafting of the questionnaire for the collection of existing indicators in countries (STC for Burkina Faso)
- New STC's and NFPs are appointed who do not have the time or capacity to attend.
- Countries that do attend, e.g. Kenya, Uganda, Burundi, Togo, Eritrea, Burkina Faso and South Africa make good inputs when attending.
- Some countries were not invited, e.g. Gambia, Sudan, Congo (NFP).
- Financial constraints, e.g. Ghana, Ethiopia, in 2015.

7.4 Question 4

STC: How do you as the STC in your country,

- a. promote research and dissemination of research findings;
- b. add value to desertification and desertification control research, and
- c. facilitate and promote linkages and dialogue between science and development and policy?

NFP: How functional is your role as NFP regarding,

- a. promoting research and dissemination of research findings;
- b. add value to desertification and desertification control research in our country, and

c. facilitate and promote linkages and dialogue between science, development and policy at national scale?

The responses

- Most countries' responded was that there are very little linkages and dialogue.
- One country (Burkina Faso) however stated the STC was involved at forums for dialogue among the various players: policy makers, researchers, financial partners, NGOs and farmers' organizations.
- Burkina Faso has also adopted a National Policy for Scientific and Technological Research (NP/STR) as an operational response to the political will for conducting scientific research. The policy is being implemented using the strategic plan (2015-2024) of the National Center for Scientific and Technological Research
- Most research data and results get disseminated through scientific journals and at scientific conferences, due to the obligations that scientists have to their organisations.
- STCs do research in a particular field of interest and promote that type of research and outputs at post-graduate level. STCs are therefore involved in curricula formulation, etc.
- Eritrea is the first country in the region to submit the updated NAP document to UNCCD Sec.

The recommendations

- Priorities and gaps should be identified and types

of research recommended.

- It will be important to try and obtain funding from sponsors for initiatives, e.g. awareness raising and outreach programmes, etc.
- Participation in the NAP process (development and implementation) should be improved and forums created to develop and distribute initiatives to all stakeholders.
- Establish units for certain initiatives, e.g. indigenous and local knowledge.
- Research activities should be better targeted at policy makers, stakeholders and populations of affected communities.
- Involve different media, e.g. workshops during field days, demonstration days, radio programs, TV, field days
- STCs should do regular updating and reporting to NFP about activities of the UNCCD and vice versa.
- NFP and STC should complement each other with common goals and objectives, e.g. scrutinizing and prioritizing project proposals, involve different platforms and ministries, enhance awareness, concentrate on causes and effects of land degradation and desertification, hold training sessions, organise national events and determine who should attend.

7.5 Question 5

STC & NFP: What are the national Policies/initiatives to promote the role of science and technology in combating desertification in your respective country.

The responses

- Some countries launched plans, policies and long-term strategies (e.g. Vision 2030 by Kenya) that promote the role of science and technology in desertification control and SLM and recognize economic, political and social advancement in UNCCD matters.
- Most of the above mentioned initiatives are in the water, energy, mining, forest, education, agricultural, livestock and fisheries sectors.
- Countries that have, or are in the process of NAP alignment, give policy direction in the use of Science and Technology in combating desertification.

The recommendations

- Need support for funding.
- Enhance the contribution of the NFP in the pursuit of the objective of the UNCCD.
- Build the capacities of the STCs and NFPs, especially newly appointed ones.
- Offer opportunity to better understand the functions and develop the necessary skills to efficiently implement the objectives of the UNCCD.
- Liaise with other research institutions, academia and other relevant state institutions on continuous basis to foster cross-sectoral planning among the various sectors and communities for prudent land resource management.
- Pilot on the ground, research findings at demonstrations and conduct awareness creation using community fora, print and electronic media.

- Build capacity in project proposal writing to seek international and local funding to implement the NAP
- Increase the collaboration between STCs and develop a forum for the STCs to in Africa to interact regularly.
- Establish channels of communication at the Africa Region level for the STCs to share experiences that will inform / make an input into the CST.

7.6 Question 6

STC: Do you have any recommendations how to enhance or strengthen your contribution as the STC to the NFP and possible CST?

NFP: Do you have any recommendations how you would enhance and/or strengthen your contribution as the NFP to the UNCCD?

The responses

- All programs and projects dealing with land degradation and desertification issues should be financed by UN agencies via the NFP to UNCCD of the country. This includes data collection, dissemination of data and results, preparation of the national report and contributions to PRAIS, etc.
- Encourage NFP to allocate resources (physical office, human, financial and equipment) to facilitate operations of the STC.
- Encourage regular meetings like quarterly meetings between the NFP and STC to share various issues regarding UNCCD matters.

- Involve the STC in all meetings under the UNCCD (COPs, CRIC) that are normally attended by the NFPs, so that the STC can understand and contribute on the topical issues under discussion and encourage synergetic relationships.
- Clear definition of roles of STC and NFP needed.
- Involve NFPs and STCs in policy writing and action plans and programmes.
- Include the concept of desertification in the early education, scholarships and expanding of environmental studies in higher education studies and other cultural activities.
- Material and financial resources should be made available for facilitating consultations among the various specialists working in universities and research institutes on the various aspects of desertification.
- UNCCD Secretariat should develop a database so that member countries can retrieve ideas from activities to combat desertification, i.e. Indigenous and local knowledge initiatives, etc.
- UNCCD Sec should update the database about NFPs and STC's regularly.
- The role and administrative, as well as decision-making powers of the STC and NFP should be strengthened.

8. Responses from questionnaire after African Regional meeting

8.1 Priorities of Land Degradation (LD) at country level

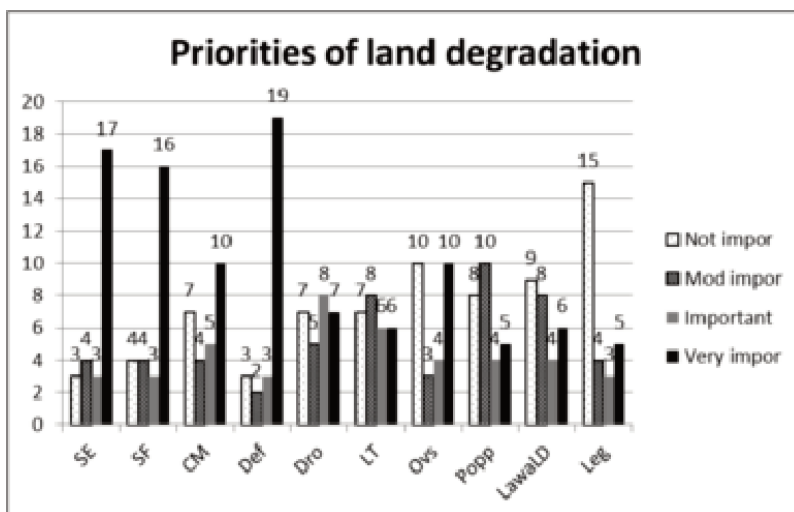


Figure 1. The priorities of land degradation in the countries. The 10 priorities of land degradation that were asked are as follows: Soil erosion (SE); Loss of soil fertility (SF); Improper cultivation methods (CM); Deforestation (Def); Drought (Dro); Land tenure (LT); Overstocking (Ovs); Increased population pressure (Popp); Lack in awareness about LD (LawaLD); Lack in policy/legislation to prevent LD (Leg). The number of responses per country as indicated by the bars, is as follows - not important, moderately important; Important; and very important.

Results

It is important to consider that the country responses differ according to the sub-region where the country occurs in Africa. For example 19 countries indicated that “deforestation” is a mostly leading to land degradation in their country, but this will only be applicable in countries where a lot of forests exist, e.g. in the Central African sub-region.

Interesting that most countries indicated that “soil erosion”, “soil fertility” and “deforestation” are the main causes of land

degradation, which could be due to overstocking and population increase, especially during periods of drought. “Legislation” seems to be not important, meaning perhaps that there is enough legislation in their country regarding the priorities that lead to land degradation. If these legislations are however enforced, remains a question?

8.2 Relationship between STC and NFP at country level

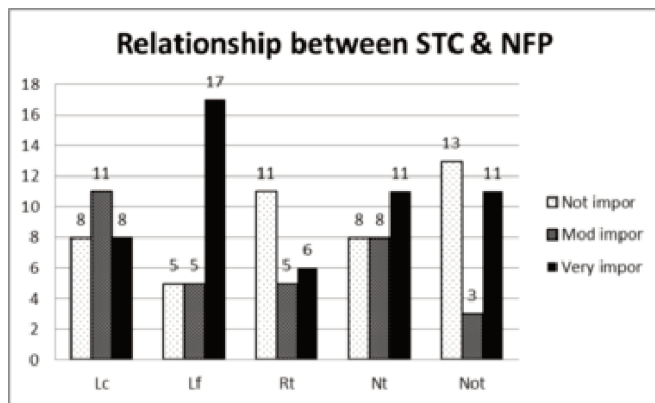


Figure 2. The relationship between STCs and NFPs per country. The 5 indicators identified explaining the relationship between STC and NFPs are as follows: Lack in communication (Lc); Lack in funding (Lf); Rapid turnover of STCs/NFPs (Rt); No time (Nt); Not in same institution/organization (Not). The number of responses per country as indicated by the bars, is as follows: not important, moderately important and very important.

Results

A lack in funding seems to be the most important aspect why there is not a sound relationship between the STCs and NFPs in each country. The lack in communication, rapid turnover between the STCs and NFPs, as well as that both these bodies are not in the same institution seems to be moderately or not important at all.

8.3 Inputs by NFP/STC to CST (Committee of Science and Technology) of UNCCD

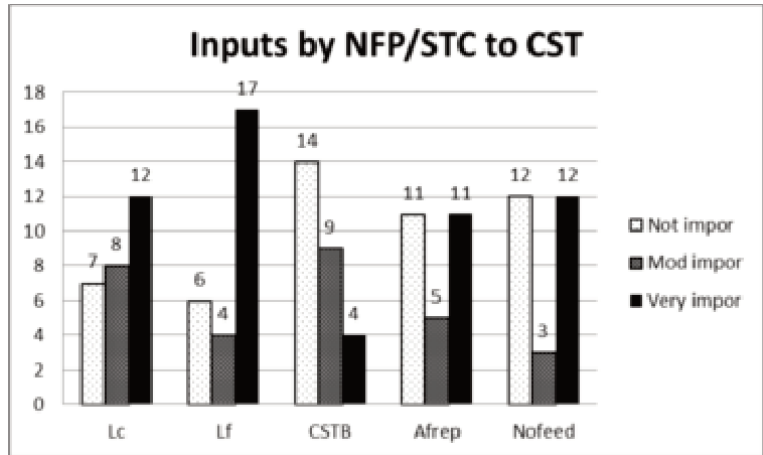


Figure 3. The reasons why the inputs by NFPs or STCs to the CST may be important or not. The 5 indicators identified are: lack in communication (Lc); lack in funding (Lf); do not know who the CST Bureau is (CSTB); do not know who the African representative in CST Bureau is (Afrep); no feedback from CST Bureau (No feed). The number of responses per country as indicated by the bars, is as follows: not important, moderately important and very important.

Results

A lack in funding, no communication and that there is no feedback by the CST seems to be the most important aspects why there is not a high input by NFPs or STCs to the CST. It is interesting that 14 of the 47 countries that answered the questionnaire said it is not important to know who the CST Bureau is and 11 do not know who the African representative in the CST Bureau is.

8.4 UNCCD-CST scientific conferences attended by STC/NFP

Results

Nine (9) country delegates did not answer the question. Eleven (11) indicated that they attended only one (1) UNCCD-CST scientific conference, while two (2) countries attended two (2) conferences and only five (5) countries attended all three the UNCCD-CST scientific conference. From Figure 4 it is evident that most countries thought that a lack in funding was the main reason why they did not attend the UNCCD-CST scientific conferences, but that the other factors, i.e. not invited, no time, not interested and due to country rules or regulations was less important for not attending the scientific conferences.

This answer is very strange that “funding” was the main reason for not attending the CST- special session for scientific conferences. The UNCCD Secretariat pays for all the travel expenses and they give a considerable amount as a daily subsistence allowance (DSA) which can be used to pay for the accommodation for each STC attending the scientific conference as organised by a special session of the UNCCD-CST. It is therefore uncertain why so few STCs did not attend all three the CST conferences and why so many were not invited or only attended one conference

8.5 Functioning of the science-policy interface regarding DLDD at country level

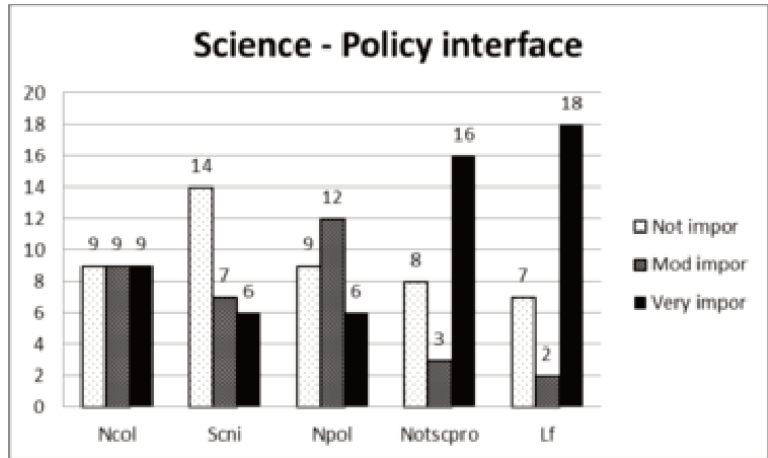


Figure 5. The functioning of the science-policy interface in the countries. The 5 indicators identified are: No collaboration between science and policy (Ncol); scientists not interested in policy and vice versa (Scni); not enough policy regarding DLDD (Npol); not enough scientific projects regarding DLDD (Notspro); lack in funding (Lf). The number of responses per country as indicated by the bars, is as follows: not important, moderately important and very important.

Results

Not sure if the persons understood the question correctly? It was therefore difficult to make an analysis of the answers given in figure 5. Evident however is, that a lack of funding is the main cause for the poor science-policy interface in the countries of which the persons answered the question. It is also very important to have enough scientific projects regarding DLDD in the countries. If interpreted correctly, it is not very encouraging that persons from countries that attended the African Regional meeting seem that it is not important that scientists have a good knowledge of the policies in the country and that it is not important for the policy makers to be interested in the science.

8.6 National Policies/initiatives to promote the role of science and technology in combating desertification at country level

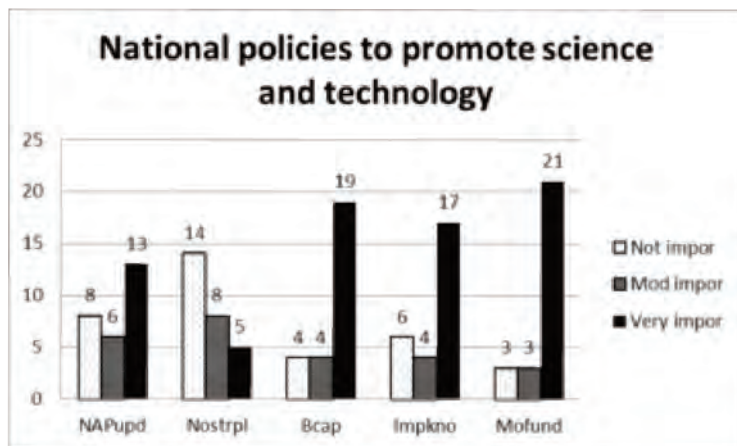


Figure 6. National policies to promote science and technologies in the countries. The 5 indicators identified are: NAP has to be updated (NAPUpd); no strategic plan (Nostrpl); build capacity of NFP and/or STC (Bcap); improve knowledge about objectives of UNCCD (Impkno); more funding needed (Mofund). The number of responses per country as indicated by the bars, is as follows: not important, moderately important and very important.

Results

From figure 6 most countries seem that it is very important to update the national Action Programme (NAP, that the capacity building for the NFPs and STCs has to be improved and that their knowledge about the UNCCD has to be increased. As previously, most countries need more funding to improve and implement the national policies about science and technology in their country. It however seems that there is a good strategic plan for addressing science and technology in the countries. Unsure however is if this plan is implemented or not?

8.7 Recommendations to strengthen the role of science and technology and to enhance contributions to CST

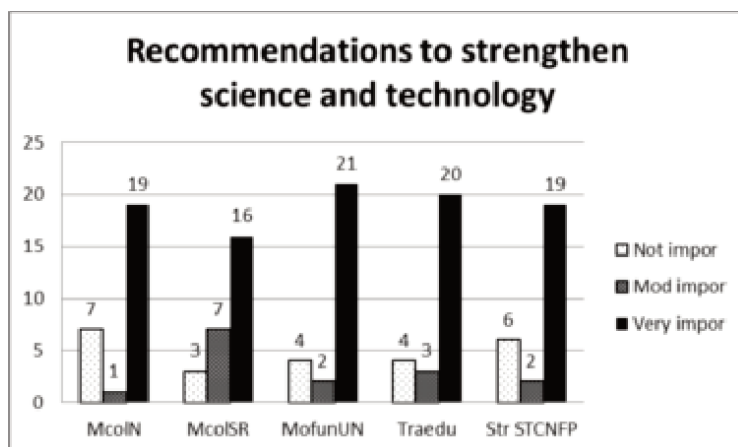


Figure 7. Recommendations to strengthen science and technology in the countries in the African region. The 5 indicators identified are: More collaboration at national level (McolN); more collaboration at sub-regional level (McolSR); more funding from UN agencies (MofunUN); increase DLDD in education and training (Traedu); and the role and administrative, as well as decision-making powers of the STC and NFP should be strengthened the UNCCD system (StrSTCNFP). The number of responses per country as indicated by the bars, is as follows: not important, moderately important and very important.

Results

From figure 7 it seems that all the aspects mentioned are very important and need attention if the science and technology has to be strengthened in the countries of the African region.

8.8 Use of National/International network(s) at country level

From the answers by the delegates who answered this question it is clear that many networks are used by especially the scientists in the countries. The networks used depend on the sub-region where the country is situated, as well as the funding source and the language predominantly spoken in the country. It is however uncertain how many times each of the networks mentioned were used? Some of the networks that were mentioned the most were by the UNCCD, FAO, UNDP and UNEP. Others included NEPAD, OSS, IFAD, SADC, COMIFAC, CILLS, WOCAT, IUCN and Terr Africa.

8.9 The most important funding agency/cies of national Project (s)

As for the previous question, many funding sources were mentioned by the delegates. Again, it is uncertain how much each of the funding agencies contribute to projects related to DLDD projects, for how long the funding is available and how sustainable the funding sources are over the long-term. Additionally it is unsure if the delegates that answered the question are really aware which agencies fund their projects, as many named the implementing agencies, such as UNEP (5) and UNDP (8) , and not from where the implementing agency receives the funding? The GEF was however mentioned as the main funding agency for DLDD projects (15). Other organisations that contribute financially to DLDD projects of the UNCCD, include the FAO (5), OSS (2), World Bank, European Union (EU), IFAD, African Development Bank and the National Governments (5) themselves.

9. Centers of Excellence

The establishment of the Platforms for Centers of Excellence (CoEs) is fully described by AU SAFGRAD (2014)*. Centers of Excellence are physical or virtual entities of research which concentrate existing capacity and resources to enable researchers to collaborate across disciplines and institutions on long-term projects that are locally relevant and internationally competitive. The CoEs must have be the “status symbol” of the institution or organisation at national, sub-regional and regional levels. The host institutions where the CoEs is located, must have existing capacity and resources to enable researchers to collaborate across disciplines and institutions on long-term projects. The Department of Science and Technology (DST) and the National Research Foundation (NRF) in South Africa developed a CoE Programme Framework for the establishment and management of CoEs. According to the NRF and DST in South Africa, the key performance areas of CoEs are, (1) Produce research/knowledge of national strategic importance, (2) contribute to education and training (human capital development, including indigenous knowledge, (3) contribute to information brokerage, (4) promote networking between scientists and policy makers, (5) render a service to the sub-region and at national level regarding their needs and strategies, (6) promote of collaborative and develop interdisciplinary research, (8) develop a creative research training environment that is internationally competitive, e.g. getting scientists and students (e.g. post graduate and post-docs) from the sub-region, region or international organisations to collaborate in the team at the CoEs, (9) strive for the highest standards of quality, be international competitive and produce high quality science; and (10) diffuse knowledge to all possible stakeholders where needed.

*AU SAFGRAD. Report on the implementation of African Union Decision 492 (XXII). Strengthening the implementation of the United Nations Convention to Combat Desertification in Africa

The CoEs should therefore have a clear multi- and/or trans-disciplinary focus, which is identified by all stakeholders in the countries of the sub-region and which is part of the overall accepted strategic plan of the UNCCD. The focus and strategic plan should be linked to national priorities with international research impact. The CoEs must consist of constituent sub-areas and include aspects that are relevant and according to the strategic plan.

The strategic plan of the CoEs should be internationally reviewed and accepted and include substantial research outputs that will preferably lead into policy making. More than 75% of the research income should come from external sources (e.g. scientists that work in the CoEs that are seconded by other international organisations for a certain time or research tasks to be performed). External organisations should be encouraged to sponsor the equipment that will be used in the research programme of the CoEs. The resource allocation of the grant allocated to the CoEs by National and International stakeholders should be reasonable and cover all activities mentioned in the strategic plan. The grant allocated should come to the Centre and not individual scientists or a group of scientists within the Center. Pooled budgets of the CoEs can be used in the development of younger, inexperienced scientists or to pay for additional expenses as approved by the Director. Overall there should be the potential for a high return on investment.

The outputs of the research and development plan should be according to the needs and requirements of the specific country and sub-region. Scientific and/or policy outputs should be presented at different national and international forums (e.g. conferences, workshops, etc). The research and training environment that is internationally competitive should be systematically developed over time and form part of the short-, medium- and long-term goals of the strategic plan.

The head of the CoEs should be an internationally renowned scientist and a full-time staff member of the Center. He/she should hold the title of 'Director'. An assistant leader and with support staff where necessary must be in place. All participating team members (except for the supporting staff) should be expert scientists in their field of interest and be part of the strategic plan and research and/or policy programmes by the CoEs. The team members should have a very good track record as scrutinized by international reviewers. The team members must be active in research and lead individual research projects within the theme and goals of the Center. Almost all participating members should have a doctoral qualification or their research projects should lead to a PhD qualification. All members in the CoEs should be working as a team towards a common goal. More experienced and established scientists can for example be used as mentors for younger, upcoming and less experienced scientists to help in their career development. The CoEs can have one or more scientists working in other countries and/or sub-regions but form part of the CoEs team.

The application of a CoEs should be reviewed by international experts that have knowledge of the strategic plan and goals of the Center. Annual reporting of the outputs and achievements of the CoEs is required. A five year cycle of international and national review should be implemented.

10. General Discussions and Conclusion

From the review and answers send by e-mail, it is evident that there are many programmes offered by the UNCCD and that the UNCCD has a clear Strategy (10 year Strategy) with guidelines and goals (see Section 1). It is also evident that the UNCCD Secretariat has a good structure with committees and experts in place, especially at the Head Quarters (HQ) of the UNCCD in Bonn. This review also shows that there are many projects, programmes, networks, including economic units (only some of them mentioned in this report) that are involved in DLDD type of activities and that form part of the UNCCD. How the linkages of the programmes at country or even the sub-regional level contribute to the science-policy interface (SPI) is however unknown. These linkages will become clear when the work and reports by the SPI will be presented at the UNCCD-COPs (COP 12 & 13). To stimulate the interface between science and policy and to promote science and technology at sub-regional and regional level, as well as address the contributions and objectives by the three Rio Conventions (UNFCCC, CBD and UNCCD), the UNCCD established the SPI committee. The United Nations also developed IPBES, which promotes the collaboration between experts of various disciplines, especially land degradation biodiversity and climate change in the different countries and regions. Various meetings have been held by the SPI committee and IPBES, which address activities of how to strengthen the science-policy interface and bring country parties in the regions together to share their information and dataset. More funding and projects that are based on scientific knowledge, parameters and protocols is however needed (Figure 5).

Although much scientific evidence exists regarding the problems and challenges of DLDD, it is not certain to what extend this scientific data and information are used in policy

making and the promotion of science and technology collaboration? It seems that one of the main problems for not sharing information between the sub-regions, is the language barrier between French- and English- speaking countries. It is however important to consider that most scientific knowledge that is published and internationally distributed is available in English. This includes booklets, brochures, information guidelines of best bet practices of how to combat land degradation and desertification, as well as newsletters and websites of the research and development institutions and organisations.

Regarding the responses about the “priorities on land degradation and desertification” that were received by the countries, it is clear that most of the priorities are similar, but depend on the specific country and sub-region (Figure 1). For example in the Central African sub-region, problems of land degradation include aspects of deforestation and the use of pesticides, whereas rangeland management, livestock production and degradation caused by cultivation and overstocking, seems to be of higher importance in the other, more arid- and semi-arid sub-regions of the African region. Other, more general priorities that were identified by all countries in the different sub-regions include aspects such as soil erosion (which is the displacement of soil from one point to the other – mostly downstream), the loss in soil fertility (mostly due to over cultivation and lack of funds to buy organic and inorganic fertilizers), drought, as well as the) increase in population growth and pressure (Figure 1). The latter leads to conflicts and socio-economic problems, and alack in awareness and capacity building regarding DLDD matters.

Mixed results were obtained by delegates via e-mail and the questions completed during the African Regional meeting in Pretoria in September 2015 regarding the collaboration between NFPs and STCs. Although there seems to be some

interactions between scientists, (representing the STCs), the poor collaboration between policy makers (mostly representing the country NFPs) and other stakeholders (e.g. CSOs and NGOs) that were identified by the responding countries per e-mail, included aspects such as that the NFPs and STCs are in different departments and/or organisations and little time and effort is spend to bring these two parties together to discuss and plan important UNCCD matters. This however seems not to be important if the results from the questionnaire that was completed during the African Regional meeting in Pretoria (1-4 September 2015) are analyzed (Figure 2). Other aspects that were identified by persons that completed the questions by e-mail regarding the poor collaboration between NFPs and STCs, include a lack of funding and awareness of the work and role of the NFPs at policy level and STCs at scientific level, the rapid turn-over of NFPs and STCs (one country mentioned that there were 4 NFPs and 3 STCs within five years) (this however seems to be not important if results from the African Regional meeting are analyzed), STCs are too busy with their own work and involved in specific projects and only respond on an ad-hoc basis, and NFPs and STCs should rather plan activities together regarding DLDD matters and develop strategies to monitor and report the impacts and priorities of combatting land degradation. Many countries have strategies and plans in place to overcome these constraints, but they are unfortunately not always used and/or implemented. Only if sound communication and collaboration between the STCs and NFPs exists at country level, interactions at sub-regional and regional scale will be enhanced. A lack in funding to stimulate this collaboration and communication seems to be the main problem in most countries in Africa (Figure 2). Some countries even stated by e-mail, that “some of the policy barriers to addressing DLDD include the lack of information and data, and that there is a need for a

reform and implementation of science-based policy frameworks” and “a lack exists in policy/regulation formulation on sustainable land and water resources management”, as well as “a lack exists in preparing strategic- and development plans over short- and long-term”. It is however important that many countries realize that they must update their NAP and that more capacity building has to take place between STCs and NFPs. More funding is however urgently needed for these activities (Figure 6).

It is important to know that decision-makers need baseline information and expertise, not only regarding the legislation, strategies and policies in their country at national level, but also regarding scientific and technology data and information (Figures 6 & 7). In countries where funds and skilled manpower are scarce, most people depend directly on natural resources for their livelihoods and therefore require good science and technology based policy frameworks for decision making. Funding, improvement about UNCCD activities and capacity building is urgently needed for better decision making (Figures 6 & 7). Equally, policy makers need information about development opportunities, impact of social and economic goals (e.g. employment, food security and export), as well as information about the impacts leading to land degradation, i.e. whether the land use is sustainable due to certain land tenure principles and if the land which serves as the natural resource will progressively be degraded. The latter information is best provided by scientists, including CSOs and NGOs.

Desertification and land degradation data and information, often based on Indigenous and Local Knowledge (ILK) are unique, both in the way it is collected, accessed and interpreted. The management and interpretation of scientific data, including ILK, is fundamental to combating desertification. Scientists ensure quality and consistency by taking

a methodical, interdisciplinary, global, and team-based approach to data management. It is often difficult to collect data about the impacts that lead to land degradation over the long-term (e.g. climate change), as most projects are only funded and supported over the short-term. It is however important that information is gathered by scientists over the long-term and that the data is communicated properly to policy makers by different platforms. The collaboration of scientists that investigate similar problems and impacts leading to land degradation should be promoted at sub-regional scale (Figure 7). The latter will stimulate data-exchange which is one of the key outputs by scientific organisations. Only good and reliable scientific should be used in education and training systems (Figure 7). The challenge however lies with the policy structures and if these data outputs by scientists are considered in their strategies, plans and policy making? As identified by the country delegates, the role of the administration, as well as the decision making powers of the STCs and NFPs should be strengthened in the UNCCD system (Figure 7). If the latter challenge is addressed, more inputs could be expected to the CST and regional and the CST Bureau at global level (Figure 3). Only a few countries have indicated that there is currently some relationship between the NFPs and STCs with the CST and that they are aware of who the African representative in the CST Bureau is, but that more funding is needed to strengthen this relationship (Figure 3).

The UNCCD had three scientific conferences from 2009 – 2015 presented at special sessions of the CST. The attendance of the conferences by STCs and NFPs is poor and the reasons differ. It seems that many countries (9) were not invited to these conferences (See results of 8.4). The latter may be due to the outdated information that the UNCCD Secretariat has of the STCs and NFPs representatives of

each country or due to the rules and regulations imposed by the national governments and Ministries responsible for the UNCCD at country level. Country Parties should therefore inform the UNCCD Secretariat of any changes regarding their STCs or if the address or the appointed STC has changed. The database of the STC and NFPs has to be constantly updated by the UNCCD Secretariat. Only two countries from Africa attended two conferences and only five countries attended all three conferences. As mentioned above (Section 8.4), it is strange that delegates that completed the questionnaire at the African Regional meeting mentioned that funding seems to be a problem of why countries did not attend the scientific conferences (Figure 4). This should not be a problem, as the UNCCD Secretariat pays for all the travel expenses and they give a considerable amount as a daily subsistence allowance (DSA) from which the accommodation expenses can be paid. Countries should therefore not worry about a lack in funding and this should not be an excuse for not attending the CST special session scientific conferences. It is also strange that STCs and NFPs make very little inputs and do not participate enough at the scientific conferences if they do attend. This could be due to the specific style or theme of the conference. Again, there are mixed results regarding the answers received via e-mail and per questionnaire that was completed during the African Regional meeting.

According to the answers received via e-mail, another problem mentioned of why countries did not attend the scientific conferences include, that the STCs and NFPs did not have the time or capacity to attend. This is different to the answers obtained by the questionnaire from the African Regional meeting, where it was stated that these problems were not of importance (Figure 4).

It is a pity that only 16 Member States from the African region attended the last CST conference in Cancun, Mexico during March 2015. This resulted in a lack of participation by African States at the conference and a lack of coordination at regional level. Due to the few African Member States that participated and the tight schedule of some members (e.g. CST Bureau member for Africa), the regular African Regional meeting also did not take place at the last scientific conference. This has a very negative effect on the whole African region regarding their inputs in the CST. The fact that an African Regional meeting to prepare for the UNCCD-COP 12 in October 2015 as was organized by South Africa in Pretoria from 1 - 4 September 2015, is a very encouraging, as it brought many African countries together. A common position for the African region about the different aspects that will be discussed at the UNCCD-COP 12 could be made.

Questions 2 and 4 that were asked via e-mail, are related (Sections 7.2 and 7.4). As per the responses for question 2, only a few countries indicated that there are some “linkages and dialogue between the STCs and NFPs at national scale” (Question 4). Although Burkina Faso has indicated that the collaboration between the STCs and NFPs and other stakeholders, such as policy makers, scientists, funding agencies, NGOs and the farming community, is active and according to the newly developed Strategic plan (2014 – 2017) with specific goals and activities that stimulate collaboration between the East-, West- and Central African sub-regions, most countries stated that the linkages were mostly around certain projects and/or programmes carried out at national and country scale. This also depends on the funding agencies for DLDD projects and networks between countries and sub-regions that were identified at the African Regional meeting (Sections 8.8 & 8.9). Scientists mostly publish data through

scientific journals due to the regulations set by their organisation (e.g. scientists in academia are asked to publish their scientific findings in scientific journals with high impact factors). Such results are often not available or understood by policy makers, technicians or people at grass roots level in the rural communities, especially if the outputs are in a language they cannot read or understand. Scientists also often do research related to their particular field of interest (e.g. soil science or impact of pesticides or grazing, etc.) which do not address the wider goals of the UNCCD. These gaps should however be filled by all the experts that form part of the Roster of Experts programme of the UNCCD. The UNCCD Secretariat is however struggling to get member Parties, especially from the African region, to update their list of scientists and policy makers that form the Roster of Experts for their specific country. The UNCCD Member States in Africa are also very slow in updating their NAPs, especially seeing that the 10 Year Strategy of the UNCCD will come to an end in 2018. Member States are therefore unsure if the newly developed/adapted/updated country NAPs will still be relevant and functional after 2018. This aspect will be discussed at the UNCCD-COP 12 in Ankara during October 2015.

Other recommendation that were mentioned by countries that responded via e-mail of how to facilitate and promote the linkages and dialogue between NFPs and STCs and how to disseminate research findings, include, that both the NFPs and STCs (1) should identify gaps that need to be researched at country and possible sub-regional scale, (2) should try and obtain funding for certain projects/programmes regarding DLDD matters, (3) be involved in the establishment of certain units that address goals and initiatives of the UNCCD (e.g. local and indigenous knowledge), (4) be involved in media reports, (5) collaborate in the scru-

tinizing and prioritizing of project proposals submitted that address certain DLDD and other UNCCD related matters (e.g. awareness raising campaigns, organisation of national and sub-regional events, policy plans, etc), and (6) both should meet more regularly and not only at UNCCD- CST conferences or at UNCCD-COPs.

As for the NAPs that need to be updated urgently at country level the SRAPS at sub-regional level are also often very outdated. Some countries also mentioned that there needs to be more feedback by the CST Bureau to the countries (Figure 3). One country mentioned via e-mail that no policy exists that is aimed at promoting the role of science and technology in desertification control. It is also strange that not one of the current SRAPS analyzed, mentions the importance of enhancing the science-policy interface. In fact, the word “science” or “research” could not be found in any of the SRAPS. However, the word “policy” was mentioned a few times in all the SRAPS, but only that “policies should be created for all different sectors and information”. Only a few countries have updated their policies and plans and have long-term strategies in place that address DLDD matters within the region that promote the science-policy interface and promoting science and technology.

Apart from the funding that has to be increased, recommendations of how to strengthen the role of science and technology in the national policies/initiatives include that, (1) the capacities of both STCs and NFPs should be enhanced, and that (2) both should be better informed about the UNCCD’s objectives, programmes, functions and strategies (Figure 6). The answers for this question were very similar regarding the responses received via e-mail and via the questionnaire completed at the African Regional meeting in Pretoria. STC’s, scientific experts and NFPs should also (3) liaise better with other scientific and government institutions

/organizations and ministries, especially at sub-regional level. If the latter is in place, it will create more opportunities for capacity building and support to the CST representative of Africa in the UNCCD-CST Bureau. One of the most important recommendations made by countries via e-mail is that “channels of communication at the Africa Region level for the STCs should be established”, in order to share experiences about strategies to combat land degradation and desertification. This will also contribute and enhance the inputs into the CST Bureau.

Collaboration and better communication can also be established by the establishment of new or the revival of existing Centers of Excellence (CoEs) in the sub-regions of Africa. CoEs can promote the work by scientists in an integrated way, including organisations and funding mechanisms. Better and more relevant knowledge will also be produced by Universities, National Research Institutes, and international research organisations involved in the CoEs. Knowledge generated can be fed into the NAPS and SRAPS, thereby ensuring that it is integrated into national policies. It will be important that all science, technical and policy activities and collaborations between parties are according to the strategies and agendas of the donor communities, as they can have a huge impact in making sure the right information is permeated through the system.

Countries that responded to the questions send by the letters via e-mail to both the STCs and NFPs made many recommendations. Many of them are mentioned above. Some of the recommendations that were not mentioned before, include (1) that concepts about DLDD should already be included in early education and training programmes e.g. curricula of schools (Figure 7), (2) the role and administrative, as well as decision-making powers of the STC and NFP in the UNCCD system should be strengthened by the UNCCD

system at national and sub-regional scale so that more and better assistance can be provided to the CST representative in the CST Bureau (Figures 3 & 6) , and (3) the UNCCD should develop a database according to the goals and objectives of the UNCCD and include outcomes and results of DLDD projects and activities (e.g. the role and how local and indigenous knowledge inputs can be used in combating desertification, etc).

11. Recommendations

An integrated approach to combating land degradation and desertification is required in order to extend the awareness about DLDD and build greater capacity amongst stakeholders within the African countries for the UNCCD. Although the UNCCD Secretariat has a good structure and Strategy, with many programmes and initiatives in place, relevant to all Party Member States of the Convention at international and regional levels, it seems that the implementation of the UNCCD Strategy, especially at the science and technology level is lacking at national and sub-regional levels in Africa. Most projects and programmes are carried out by inputs representing several disciplines only at country (national) level and that the existing networks and funding sources should also be enhanced at sub-regional level, to stimulate cross-country participation and dialogue between scientists, technicians and policy makers. Only very few STCs, NFPs and scientists that responded, mentioned that they are part of some network in their sub-region and that the scientific inputs seldom form part of the policy making. This is also evident in the outdated NAPs and SRAPs. These limitations were also identified by the UNCCD, which lead to the implementation of the committee for the Science-Policy Interface (SPI). The main objective of the SPI is to enhance the collaboration and dialogue between scientists and policy at all levels.

During the application and executing of projects and programmes funded by national and international organisations, it will also be important to adhere to the objectives and specifications expected by the funding and implementing organisations. This will ensure that the impacts of the

funded projects and initiatives regarding the combating of land degradation and desertification is improved and carried out effectively.

STCs and NFPs at national level must be urged to participate more actively in the updating of the NAPs and SRAPs, as this will not only stimulate collaboration, but also enhance the interaction between stakeholders that dispose of knowledge regarding combatting desertification (e.g. scientists, poverty stricken communities with local and indigenous knowledge, natural resource users, managers and policy makers). The following recommendations are made to strengthening the role of science and technology in combating land degradation and desertification in Africa:

- a. Promote the collaboration between STCs, other scientists and/or policy makers that are part of the Roster of experts for the UNCCD;
- b. Arrange regular meetings (at least once every two years) for especially STC at sub-regional and regional level;
- c. The NFPs should have more information and understanding about the roles and relationship with the STCs and policy makers at national level;
- d. The Regional Coordination Unit (RCU) should be more active and promote the collaboration and dialogue of the STCs and scientists in all sub-regions;
- e. Monitor and evaluate the scientific activities and initiatives, and how they form part of the policy plans that are specified in the NAPs and SRAPs more regularly and adjust where necessary. This includes the economic valuation of certain inputs and activities;
- f. Improve the awareness and capacity building of all stakeholders, especially the NFPs and STCs, about the goals and objectives of the UNCCD and make sure that all

information and technical material of how to combat desertification is made available to all people, especially at grass roots level. The latter also includes all learning and training institutions at national level;

- g. Make sure that the resources (funding and other) that encourage and facilitate all SLM and policy interventions to combat desertification and are used effectively;
- h. STCs and NFPs representing their member States at UNCCD-CST Scientific conferences should first discuss important matters at sub-regional and regional level at meeting and workshops, before making statements and give inputs during plenary sessions at UNCCD-CST and UNCCD-COP meetings individually. This entails that the members and representatives of the African region should have a “common position” at the UNCCD-CST and UNCCD-COP meetings;
- i. Develop a new or revive at least one Center of Excellence (CoEs) per sub-region in Africa, which will stimulate the exchange of scientific data and enhance the collaboration between scientists and policy makers. CoEs can also create new and revive old networks between scientists in the sub-region, and make sure that all scientists in the sub-region are aware of DLDD related projects in their region, e.g. OSS in West- and North Africa. Although the selection and establishment of CoEs has to go through a rigorous evaluation and review process to fulfill the demands as stipulated above;,,
- j. Although as many funding sources as possible should be found through the proper and prescribed requirements, it is proposed that the AUC, RECs, MS and development partners should facilitate and provide necessary funding sources for strengthening the role of science and technology in combating desertification in Africa).

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