

# THE MONITORING AND EVALUATION OF NATIONAL ACTION PROGRAMMES TO COMBAT DESERTIFICATION



OSS

OBSERVATOIRE DU SAHARA ET DU SAHEL



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## PREFACE

The monitoring and evaluation (M&E) mechanisms for National (NAP), Sub-Regional (SRAP) and Regional (RAP) Action Programmes, as recommended by the United Nations Convention to Combat Desertification (UN-CCD), were established in response to the need to capitalise efforts made by countries stricken with desertification and their partners in combating this scourge.

M&E mechanisms are viewed as decision-support tools that, thanks to their focus on positive and negative trends in the state and productivity of natural resources and the pressure levied on them, are able to give direction to and hence optimise the impacts of actions to combat desertification (CD). These actions must be designed to ensure gradual inclusion of desertification control measures in the national socio-and economic development strategies, measures that must become a prerequisite for all development projects and be given a preventive rather than an exclusively remedial role.

After becoming part of the development activities, desertification control measures need to be given a more visible place in the stricken countries' NAP/CCD and decision-making processes. This brings up the basic issue of the legitimacy, role and capacity for action of the National Coordinating Body (NCB) that the countries have established following a recommendation from the CCD Conference of Parties.

When the Convention was adopted (1994), OSS, its member countries, sub-regional organisations and development partners, launched efforts to define and identify CCD process implementation indicators, and then impact indicators of actions to combat desertification. This led to the conceptualisation of NAP/CD monitoring-evaluation comprising three vital aspects: the extent of application of the principles advocated by the CCD (monitoring-evaluation of CCD implementation), the degree of scientific and technical control of the phenomenon itself (monitoring-evaluation of the biophysical and socio-economic dimension of desertification) and monitoring-evaluation of NAP/CD impacts.

After the international community adopted the concept (5th Conference of Parties, Geneva, October 2001), OSS and a few of its members, who were the most advanced in implementing their NAP/CD, started a test phase to define and establish these mechanisms. This report presents and analyses the results of test phase experiences in Morocco, Niger, Tunisia, CILSS and UMA thus providing OSS members with approaches and procedures that can be adapted to their own national and/or sub-regional situations.

We hope that this analysis will be of use to the Scientific and Technical Committee (STC) of the CCD Conference of Parties that is studying indicators and benchmarks at the international level. We are convinced that the introduction of these mechanisms will not only stimulate CCD implementation in the stricken country Parties, but will also

inspire synergy between the conventions stemming from the Rio process, since they provide useful data and information for national environmental observation and monitoring mechanisms which, in time, will be turned into infrastructure for environmental data that can generate environmental information of use in making decisions.

We will only be able to harness knowledge on natural resources and ensure their sustainable exploitation if we strengthen data collection, processing and analysis using harmonised, well documented methodologies, shared by all the actors involved in the exploitation, management and protection of these resources, which are still the main, if it is not the only source of livelihood for the majority of people in Africa.

By providing assistance to its member states and organisations in implementing the Multilateral Environmental Agreements (MEA) through its programmes on the environment and on the management of shared water resources, OSS actions specifically target the aforementioned aspects of harnessing information for decision-making.

OSS was able to carry out this work thanks to support from its development partners and member states. Special mention and gratitude are due to GTZ/BMZ ("Support to CCD Implementation in Africa" programme), and to French, Italian and Swiss development cooperation services (support for OSS operating costs and the ROSELT/OSS programme).

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OSS Executive Secretary

**Youba SOKONA**



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## ACRONYMS AND ABBREVIATIONS

AGHYMET	Centre régional d'agro-hydro-météorologie, CILSS specialised institution
CCD	United Nations Convention to Combat Desertification
CD	Combating Desertification
CILSS	Comité Permanent Inter-Ministériel de Lutte Contre la Sécheresse au Sahel / Permanent Interstate Committee for Drought Control in the Sahel
CNEDD	Environmental National Council for Sustainable Development / Conseil National de l'Environnement pour le Développement Durable
COP	Conference of Parties
CRDA	Commissariats Régionaux au Développement Agricole
CREDD	Conseils Régionaux de l'Environnement pour un Développement Durable
CRTS	Centre Royal de Télédétection Spatiale
CSFD	Comité Scientifique Français de la Désertification
DGACTA	Direction Générale de l'Aménagement et de la Conservation des Terres Agricoles
DIS/SCID	Desertification Information System / Système de Circulation de l'Information sur la Désertification
DIS-SEI	Systèmes de circulation de l'Information sur la Désertification et de Suivi de l'Environnement sur Internet (Desertification information and environmental monitoring system on the Internet)
DRDA	Direction Régionale de Développement Agricole
DRDC	Direction Régionale pour le Développement Communautaire
DRE	Directions Régionales de l'Environnement
DRRA	Direction Régionale des Ressources Animales
DSE	Dispositif de Suivi Environnemental
DSS / SSD	Decadal Sector Strategies / Stratégies Sectorielles Décennales
FAO	United Nations Food and Agriculture Organisation
GIS	Geographic Information System
GRULAC	Latin American and Caribbean group of countries
HCEFLCD	Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification
IADP / PDAI	Integrated agricultural development projects / Projets de développement agricole intégrés
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority on Development
INSAH	Institut du Sahel
IRA	Institut des Régions Arides
IRD / PDRI	Integrated rural development projects / Projets de développement rural intégrés
LAP	Local Action Programme

LDA / AAD	Local Development Action / Actions d'Aménagement et de Développement
LEIS	Local Environmental Information System
MARH	Ministère de l'Agriculture et des Ressources Hydrauliques
MDG	Millennium Development Goals
MEDD	Ministère de l'Environnement et du Développement Durable
NAP/CD	National Action Programme to Combat Desertification
NAP/CD - NRM	National action programme on combating desertification and on natural resources management
NCB	National Coordinating Body
NCCD	National Committee to Combat Desertification
NDVI	Normalised Difference Vegetation Index
NRM	Natural Resources Management
OECD	Organisation for Economic Cooperation and Development
OEP	Office de l'Élevage et des Pâturages
OSS	Sahara and Sahel Observatory / Observatoire du Sahara et du Sahel
OZADD	Observatoire des Zones Arides pour le Développement Durable
PNO	Plan National Oléicole
PQD	Quinquennial Development Plans / Plans Quinquennaux de Développement
PRIPAN	NAP Institution Strengthening Project / Projet renforcement institutionnel du PAN
PRSP	Poverty Reduction Strategy Paper
PSRI	Pressure-State-Response-Impact
RAP	Regional Action Programme
ROSELT	Long Term Ecological Observatories Monitoring Network / Réseau d'Observatoires de Surveillance Ecologique à Long Terme
SAU	Useful agricultural land / Surface agricole utile
SD / DD	Sustainable Development / Développement Durable
SDPP / SPPD	Stratégies, Programmes et Projets de Développement / Strategies, Development Programmes and Projects
SMAP	Short and Medium-Term Priority Environmental Action Programme, Euro-Mediterranean Partnership / Programme aire à Court et Moyen Termes pour l'Environnement, Partenariat Euro-Méditerranéen
TWG	Technical Working Group
UMA	Union du Maghreb Arabe
UNDP	United Nations Development Programme
UNESCO	United Nation Educational, Scientific and Cultural Organisation
UNITAR	United Nations Institute for Training and Research
WSC / CES	Water and Soil Conservation / Conservation des Eaux et du Sol

# I- INTRODUCTION

## I.1- THE CCD AND MONITORING-EVALUATION

One of the innovations of the United Nations Convention to Combat Desertification is its requirement to regularly monitor the evolution of desertification and the various desertification alleviation programmes, projects and actions. Monitoring is a tool to facilitate investment decisions and the identification of corrections and improvements to implementation actions, thereby increasing efficiency and effectiveness. The national action programmes, set out in the Convention and designed by the countries to serve as a reference for all actions to combat desertification and mitigate the effects of drought, should include a monitoring-evaluation system. Active partnerships have been established between the stricken countries and the countries of the North, and the resources required for the NAPs have been secured to enable all the stakeholders (local communities, civil society, public and technical services) to contribute to combating desertification.

These activities made it important for the countries to establish national facilities and instruments for measuring efforts deployed in desertification control activities. The signatory countries participated in international think tanks to reach full agreement on the definition of indicators to add to the list of overall indicators prepared by international agencies and governments to monitor progress in adopting and implementing the concept of sustainable development.

Various articles in the Convention explain the measures required to assess the effectiveness of its implementation and invite the countries to produce information and indicators that can be used to report on the national action programmes regularly. The CCD clearly expresses this idea in the following articles:

Article 10.2. "National action programmes ... require regular review of, and progress reports on, their implementation".

Article 16. "The Parties support and further develop bilateral and multilateral programmes and projects aimed at defining, conducting, assessing and financing the collection, analysis and exchange of data and information, including, inter alia, integrated sets of physical, biological, social and economic indicators".

Article 22. "The conference of the Parties...shall...regularly review the implementation of the Convention".

Article 9. of the Africa annex: "The national coordinating body shall establish pertinent, quantifiable and readily verifiable indicators to ensure the assessment and evaluation of national action programmes".



## **I.2- AN ENABLING INTERNATIONAL CONTEXT FOR MONITORING-EVALUATION**

The importance of NAP monitoring-evaluation can be traced back to an international scene marked by some forty years of uneven results with desertification control programmes and projects that were unable to curb the phenomenon and that suffered from paucity of financial resources and dwindling official development aid. Hence the need to assess the impact of investments. Following the adoption of Agenda 21, an offshoot of the 1992 Rio summit, international organisations started producing various conceptual documents on environmental indicators.

On the basis of Agenda 21, the United Nations Commission on Sustainable Development prepared a set of indicators to enable governments to evaluate or take stock of progress in sustainable development. Its scientific committee on environment worked diligently on non-numeric indicators, especially on the use of maps and the Geographic Information Systems (GIS).

The World Bank, through its Land Quality Indicators programme, contributed significantly to international reflection by organising workshops on the definition of indicators.

The concept of Natural Resources Management (NRM), developed in the early 1990s, focused the attention of several United Nations institutions on the problem of environmental indicators; indicators on evaluating the participatory approach in implementing field projects and their impacts, for instance, have already been used by IFAD and FAO at the local and sub-national levels.

The OECD commissioned a number of studies on approaches that could be used to measure performance in environmental management and has proposed indicators to facilitate the preparation of national reports on the state of the environment. For OECD, indicators are to be produced from popular models, such as the "Pressure, State, Response" framework that considers the environment to be changing as a result of pressure exerted by human activity. This model subsumes that positive changes can be brought about in the environment by providing answers that can modulate this pressure.

Alongside the international initiatives, OSS, from the start, sought relevant information in Africa that could serve to calculate indicators. Its Long Term Ecological Observatories Monitoring Network (ROSELT), launched in 1995, is devoted to characterising and monitoring the evolution of natural and cultivated ecosystems by exploring the relations between human activities and environmental change.

During this same period, CILSS, via INSAH and AGRHYMET, two of its specialised institutions, developed a system of indicators to monitor the environment and natural resources management programmes.

### **I.3- WORK CONDUCTED BY OSS, CILSS AND UMA THROUGH STC/CCD**

OSS sought to capitalise its work on indicators at the worldwide and African levels by offering the international community and especially the countries of Africa a monitoring-evaluation system that was adapted to their CCD-related NAPs.

In 1995, the UN-CCD's International Negotiating Committee proposed that OSS set up a working group on indicators. This group was composed of several international institutions (UNESCO, Club du Sahel, CCD Secretariat, etc.) and African sub-regional organisations (CILSS, UMA, IGAD) and some African countries.

The contributions by OSS and CILSS (45) to this group led to the establishment of a grid of CCD implementation process monitoring indicators that was sent to several partners and then was officially adopted by the First Conference of Parties (Rome, 1997). This indicators grid was improved by adding information on experiences in certain countries whose experience with the process was more advanced, e.g. Mali. The grid was tested in Niger and Burkina Faso and then applied in other countries and regions of the world.

The process indicators grid is an evolving document for assessing quality-related criteria used in preparing and implementing NAPs, in keeping with the commitments of the CCD signatory states. It has served as the starting point for a manual and a preliminary outline for national reports that are presented regularly to the CCD bodies. This grid also makes it easier to compare and analyse the national reports and measure progress achieved at the global level.

When the Conference of Parties invited qualified countries and organisations to test the process indicators, continue working on NAP impact indicators and then establish monitoring-evaluation systems, OSS, CILSS and UMA, together with their partners, organised a series of workshops: Eschborn in 1998, Dakar during the Second Conference of Parties in 1998, Paris in 1999, Recife during the Third Conference of Parties, in order to capitalise its successful work with impact indicators and to launch a regional project on the methodology for designing NAP impact indicators and for establishing national monitoring-evaluation systems.

This regional group (stemming from the workshops) then decided to move on to the international scene and exchange experiences with other regions of the world. Hence, an international workshop was held in Ouagadougou in 2001 for countries of Africa, Latin America, Asia and Europe. This workshop was a high point in international cooperation and led to a proposal for a monitoring-evaluation concept (46) that was adopted through decision 11/CoP5.

This report presents and analyses the aforementioned work and downstream efforts to show how, in various participating countries, a general well-analysed concept could be used in conceptualising the countries' needs, biophysical situations and institutional / cultural contexts.

In Chapter I, Aboubacar Issa recalls some basic definitions and explains certain vital notions of indicators and benchmarks. The monitoring-evaluation concept developed by the international group is also presented in this chapter.

With international recognition for the concept and support from its development partners, as of 2001 OSS starting working with some of its member states in formulating implementation projects.

Some African countries obtained funding through bilateral and multilateral aid:

- Tunisia received support from Italy in defining its national NAP monitoring-evaluation system, which was later adapted to the Moroccan national context through a project funded by the European Commission.

In Chapter II, Ali Mhiri explains the methodological approach used to define the conceptual bases of monitoring-evaluation in the national action programme to combat desertification and the tools required for implementation. The approach and tools were tested at the national level in Tunisia as part of a Tuniso-Italian project to "support the implementation of the NAP/CD monitoring-evaluation system". Its uptake at the national level in Morocco is presented in the following chapter by Mohamed Wakrim, who shows how the state services in charge of natural resources management reached a consensus on capitalising existing data.

- The European Commission funded the project for establishing the monitoring-evaluation systems for action programmes in Morocco and Tunisia and, at the UMA sub-regional level, funded the information dissemination aspects.

In Chapter V, Mohamed Sahbi Hajje and Nabil Ben Khatra give details on the methodology developed in Tunisia at the sub-national level. This is the level at which the regio-

nal branches of the ministère de l'Agriculture et des Ressources hydrauliques carries out its land planning and development actions to combat desertification. The mechanism they developed is an important tool for dialogue between the national level, where sectoral strategies and their action programmes are defined, and the sub-regional level, where these programmes are carried out. Interaction between these two levels should make it possible to include preventive measures in the development programme designing phase of the combat against desertification and thus ensure that this environmental dimension is truly integrated into the countries' socio-economic development plans.

- Niger received financial support from UNDP, the NAP institution strengthening project (NAPISP), Italian development cooperation, and it received technical support from OSS and CILSS in establishing its monitoring-evaluation tool.

In Chapter IV, Hassen Saley and Aboubacar Issa present the Niger experience, which is based on the optimisation of results from major projects in the field over the last fifteen years.

The technical ministries concerned with rural development were involved and made information worked over by the studies and programmes department available to the project.

Existing information systems were also used extensively to further dialogue between the local, sub-regional and nations levels in their efforts to design a desertification control management dashboard.

Since 1997, GTZ has been working together with OSS on the conceptualisation of indicators and the establishment of NAP monitoring-evaluation systems. Capacity building through training has also been an important element in GTZ support for OSS actions. The results have been: greater awareness of the CCD by the main national actors, faster introduction of national monitoring-evaluation systems, and upskilling. The early modules are constantly being readapted to meet the changing needs of the stakeholders. A virtual training platform capitalises the results of sessions organised in OSS member states, and in other regions of the world, especially Latin America where GRULAC has shown interest in OSS' experience. This platform, which can be accessed through the OSS website or at the following address: <http://geooss.oss.org.tn/plateforme/index.php>, is intended to host dialogue and information exchanges between interested trainers and actors.

The last chapter of this document, written by Aboubacar Issa and Ali Mhiri, evaluates the various experiences and proposes lines of thought that countries can use in their efforts to implement the CCD.

## CHAPTER I

# OBJECTIVE, CONCEPT, IMPLEMENTATION STAGES, STAKES AND CONSTRAINTS

Aboubacar ISSA



## I- OBJECTIVES OF MONITORING-EVALUATION

The United Nations Convention to Combat Desertification (CCD) was the fruit of long debate and negotiations at the first earth summit (Rio, 1992), the summit which sanctified the concept of sustainable development based on reconciling socio-economic development with protection of natural resources in countries affected or threatened by desertification.

In the affected regions, recognising the unarguable cause and effect relationship between growing impoverishment and natural resources degradation, on the one hand, and tens of years of poor or inconclusive results obtained from sectoral and practical technical policies, strategies and programmes/projects to combat desertification on the other, the stricken countries and their partners decided to rethink the tenets of the fight against this scourge so as to be able to relieve the impoverished people and protect their natural resource base. With this in mind, CCD advocates a new approach to the development of stricken and threatened regions where the combat against desertification, at all levels of decision-making, is becoming an integral part of strategies and programmes designed to improve living conditions. This means that combating desertification is seen as a requirement for ensuring the sustainability of the development process and is becoming a fundamental aspect of plans for natural resources management and exploitation.

This concept of sustainable development and the need to improve the desertification control activities underpin an obligation to make all desertification control activities generate results and, consequently, the need to monitor the evolution of the impacts of desertification control actions regularly, in time and in space, to evaluate the outcome and to help decision-makers consider potential corrective measures that may increase effectiveness. This new task requires the right tools, and the monitoring and evaluating of results recorded at all levels: local, sub-national, national, regional and international.

For countless years, rural communities have monitored and evaluated the state of natural resources whilst, at the same, drawing on them. Indeed, in former times, rural peoples continuously monitored and evaluated the state of the environment and its natural resources and their capacity to satisfy the peoples' basic needs. And, at the community level, people took the right decisions for protecting the ecosystem, fashioning their way of living to fulfil this goal. There are numerous examples of farming and pastoral strategies based on well reasoned and managed use of the rangelands and the farmed areas in the arid and semi-arid regions. It was only when natural resources



management fell to the State that the objectives and methods of monitoring-evaluation were altered, and were restricted to the technical and financial monitoring-evaluation of programmes, projects and/or actions designed and implemented by the government either directly or indirectly. Evaluations of short- medium- and long-term effects are seldom made; at best they are made as part of short-term assignments.

After the adoption of the CCD, monitoring-evaluation became a permanent task, a procedure that could not be dissociated from the countries' CCD implementation process, and was considered in the national socio-economic development plans. The Convention to Combat Desertification is an innovation, since it embeds the combat against desertification in a long-term concerted strategy in which monitoring-evaluation is the main tool for planning and supporting decisions related to the economic, social and environmental dimensions of sustainable development. This strategy was adopted in the NAP/CDs that the countries have pledged to design and turn into a tool for implementing the CCD. It is a programme that identifies and ranks desertification as a phenomenon found throughout a stricken zone of a given country and describes a long-term method for warding off various aspects of desertification, that includes social practices, sectoral, environmental, and agricultural policies, and rural development.

## II- CONCEPT AND CONTENTS OF MONITORING-EVALUATION

The concept of monitoring-evaluation of desertification control efforts stems from reasons underpinning the ultimate goal of the CCD, namely, the urgent need to reconcile the people in stricken areas with their environment and the resources that provide them with a large part, if not all of their livelihood. This requires the preparation and application of projects to combat desertification that focus just as heavily on the causes as on the consequences.

The conceptual approach to monitoring-evaluation, that OSS (46) developed, guided by CCD principles, seeks to respond to three basic questions:

- What progress has been made in a given country in implementing the CCD and in carrying out its NAP/CD, in abidance with its commitment and the fact that it ratified the Convention?
- What is the state of desertification in each of the countries affected and how has it evolved?

- How well have projects, programmes and actions to combat desertification been able to control land degradation and improve the living conditions of the resident populations?

Three types of monitoring-evaluation have been used to respond to these questions, namely:

#### - Monitoring-evaluation of CCD and NAP/CD implementation

This entails the monitoring of the action programme implementation process to assess the quality and speed required for the process, according to the CCD, and to report, especially to the Conference of Parties. The selected monitoring-evaluation indicators should make it possible to assess the individual country's progress in completing the various phases of the process at different levels and the extent to which the players have met their commitments in formulating and implementing the action programmes. They provide information on the implementation of CCD's innovative principles at the national level: promotion of the participatory approach, implementation of the consultation and coordination mechanisms, development of an integrated approach to identifying actions and measures to combat desertification, improvement of the legal and institutional framework, partnership agreements, etc.<sup>1</sup> These indicators are also used in continuous guidance and adjustment of the national NAP implementation process.

#### - Desertification monitoring-evaluation

Desertification monitoring essentially entails ecological observation and surveillance focused on changes in the state, functioning and dynamics of the earth<sup>2</sup>, whether man-made or natural, whether triggered by the NAP or by some other strategic framework for intervention. Scientific research and specialised institutions are generally responsible for monitoring desertification. The main purpose, supported by relevant indicators, is to better understand and evaluate desertification phenomena and their interactions, the effects of drought and the many forms of pressures exerted on natural resources. This type of monitoring is usually carried out as part of long-term research projects and requires ecological surveillance by specific observatories.

Furthermore, this monitoring-evaluation should make it possible to identify appropriate solutions regarding exploitation methods for natural resources and the fulfilment of the population's needs by using the all-actor participatory approach, and to identify preventive actions thanks to the identification of risks in the priority intervention zones, preventive methods, etc. using the prospective approach.

#### - Impact monitoring-evaluation

This monitoring-evaluation focuses on the expected results of desertification control actions and covers the full range of activities, i.e. collection, processing and dissemination of information on biophysical and socio-economic changes resulting from the im-

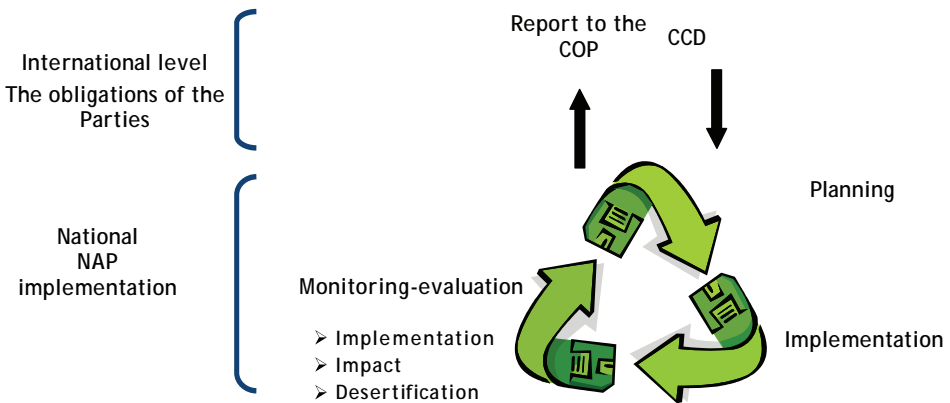
<sup>1</sup> Cf. OSS, CILSS, 1998: Guide d'utilisation de la grille d'indicateurs de mise en œuvre de la CCD (User's guide to CCD implementation indicators grid)

<sup>2</sup> According to article 1 of CCD, the word lands "means the terrestrial bio-productive system that comprises soils, vegetation, other biota and the ecological and hydrological processes that operate within the system".

plementation of action programmes to combat desertification, and thus must recognise the complex time-space dimensions of impact. The observed impacts are often the result of several factors superimposed on the effects of desertification control actions. This explains the need to hone results by analysing the context of the population-environment interface that reflects pressure exerted on resources at a given spatio-temporal scale and the reason for selecting certain indicators that accommodate the specific characteristics of each desertification situation.

These three forms of monitoring-evaluation are not independent. Quite the contrary. Even when responding to special expectations at various levels of decision-making, they form a whole, an iterative system for monitoring-evaluation of the CCD implementation cycle, as can be seen in Figure 1.

*Figure 1 - Monitoring-evaluation in the NAP and CCD implementation cycle (46)*



Ultimately, the different forms of monitoring-evaluation described above need to be incorporated into a single national mechanism for NAP monitoring-evaluation and should be turned into a decision-support tool, i.e. a management chart or a dashboard that keeps the decision-makers informed about the state of desertification in the area and possible measures for improving the performance of the NAP/CD.

From this vantage point, by integrating information systems at the national level, NAP monitoring-evaluation fulfils two vital functions:

**Institutional integration at the level** of the National Coordinating Body (NCB) by developing a framework within which environmental and socio-economic information users and producers enjoy new exchange relations and share information derived from NAP evaluations using negotiated procedures accepted by all.

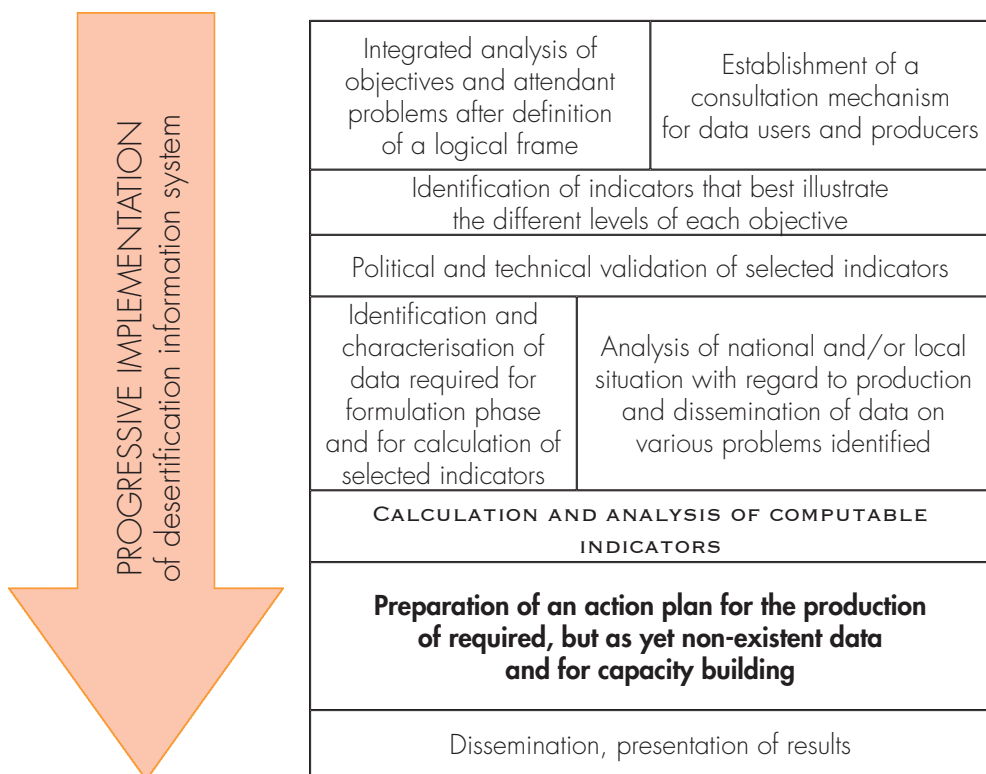
**Enhancing knowledge and regular updating of information** on the intricate details of the desertification problem, information which the afflicted countries greatly need to make their intervention policies more rational. Similarly, NAP/CD monitoring-evaluation can provide an opportunity to make very useful syntheses for preparing national reports on activities to curb desertification and in communications to bodies representing the two other United Nations conventions (Climate Change and Biodiversity).

### III- IMPLEMENTATION STAGES

The informal group called the "Ottawa Group", that the CCD Secretariat set up after the First Conference of Parties and that includes OSS, has proposed a methodological approach for designing CCD impact indicators. After the approach was adopted by the Second Conference of Parties, OSS, in an attempt to adapt it to the African context, simplified it and turned it into a methodology for establishing a NAP monitoring-evaluation system and for working out impact indicators.

OSS, CILSS and UMA together with six African countries tested the approach and included it in the NAP implementation cycle (46). Experience has shown that the first step should be to make an inventory and evaluation of the existing data, information systems, and environmental observation facilities. It also seems important to build up a desertification information system (DIS) during the monitoring-evaluation system installation phases.

The following table gives the various steps decided upon by the African countries that tested the methodology during a regional project on NAP indicators run by OSS.



These eight steps to produce a monitoring-evaluation and desertification information system cover two vital components of the system:

- **the organisation of the involved institutions:** the aim is to mobilise, involve and give responsibility to all the information and data users and producers of the project to build up the aforementioned system on the basis of rules and exchange procedures and to share available information of use in various types of monitoring referred to above;
- **the technical component:** the aim is to identify useable information and to compute indicators that are important to the NAP objectives and the problems of desertification.

Considering the constraints observed in the test countries, a certain degree of flexibility must be shown when linking the steps described above. Experiences in these countries brought out unavoidable difficulties in process implementation and the need to accommodate the national situations by constantly readjusting the approach.

## IV- CHALLENGES AND CONSTRAINTS IN NAP MONITORING-EVALUATION

Having the CCD consider monitoring-evaluation as a tool for guiding action programmes and getting it adopted as a planning and integration tool for combating desertification in the countries' socio-economic development plans involves many great challenges. It is in the utmost interest of all decision-makers at all levels to live up to these challenges:

- **at the local level**, monitoring-evaluation strengthens the role of local populations in designing, implementing and assessing desertification control actions and hence will automatically improve the level of attention given to their priority needs. Seen from the other side, the participation of these populations at all levels will ensure their acceptance of responsibility and the outcomes of these actions. Hitherto they were part of the problems, henceforth they are part of the solutions;

- **at the national level**, monitoring-evaluation, as defined by the CCD, will make the countries' efforts and investments in containing desertification significantly more profitable and thus put the development process on the road to sustainability. Furthermore, countries that honour commitments accepted when adopting this tool and use it efficiently will be strengthening their partnership with the CCD Secretariat, the NAP/CD funding mechanisms, and their development partners;

- **at the international level**, ultimately, the generalisation of NAP/CD monitoring-evaluation will improve descriptions of the state of the environment and the major ecosystems of the planet, emphasising their relations with development, poverty, and the growing social rift in the different ecoregions. International cooperation will contribute more to the diagnostic of the planet's environments and the major ecological equilibriums, priorities will be established more rationally, and resources required for sustainable development in the stricken regions will be awarded more equitably.

The stakes are high and daunting. The challenge must be envisaged as an evolving process, as part of the long term. Numerous constraints, different in nature, hold back progress in moving up the aforementioned steps to install national NAP/CD monitoring-evaluation systems. The experience acquired by OSS and its member states and partners can be used to describe and profile the main constraints encountered in certain countries afflicted by desertification.

- The gap between the political determination asserted when the Convention was being ratified and the commitment by institutions responsible for combating desertification to adopting and implementing monitoring-evaluation, as defined by the CCD.

In each of the countries, CCD ratification was followed by strong political engagement as reflected, *inter alia*, by faster NAP elaboration and the inclusion of the monitoring-evaluation component as a priority. But certain countries did not allocate sufficient resources to establish the mechanisms and tools required for this new task. The subsequent slow pace of activity is often linked to shortcomings in the NCB functioning and the fear felt by certain of its members, who represent the institutions in charge of natural resources management and development, that monitoring-evaluation may have been designed as a tool for controlling, ergo sanctioning the persons carrying out the actions because of the results they obtain. Creating the right awareness among the various actors and changing their perception of monitoring-evaluation will take quite some time. Furthermore, the tendency to create more institutions specialised in monitoring-evaluation may be holding back in-depth efforts to establish efficient, viable monitoring-evaluation systems that can be used as a routine in the daily practices of all development and desertification control personnel. Monitoring-evaluation, a tool that guarantees good governance, should be adopted and practiced by all institutions, first of all to improve their own performance and then to pass on results and data to the NCBs that are responsible for incorporating sectoral evaluations and preparing dashboards for the national decision-makers.

- Insufficient means and human skills to carry out the new task of monitoring-evaluation

Lack of national-level skills in NAP monitoring-evaluation come second in the list of reasons that prevent accelerated capitalisation of methodological experiences and available results. This is reflected in the relative lack of regular collection, standardisation and characterisation of sectoral information and the networking of this information, all of which is needed for the creation of a national information dissemination system. In conclusion, substantial efforts are needed now, and for some time to come, in order to establish national NAP/CD monitoring-evaluation systems. This does not only mean focusing on methodology and the construction of models adapted to various contexts but also, and foremost, sensitising and building up the capacities of the existing national institutions so that they can envision the combat against desertification beyond their sectoral perception and recognise that monitoring-evaluation, thanks to its outputs, contributes to improving natural resources management and making development more sustainable.

## CHAPTER II

# FORMALISATION OF CONCEPTUAL ACHIEVEMENTS AND METHODOLOGICAL DEVELOPMENT IN ELABORATING CD MONITORING- EVALUATION TOOLS AT THE NATIONAL LEVEL

Ali MHIRI





## I- INTRODUCTION

As a constant partner to its member states in the CCD implementation process, OSS has capitalised its experience in this field in order to assist and involve these countries, through joint projects, with the countries and partner organisations and to design and establish the appropriate national desertification control monitoring-evaluation facilities.

Considering the conceptual achievements described in the preceding chapter (60, 45, 46) and the challenges in assisting the member states to incorporate them in the design and implementation of their national system for the monitoring-evaluation of natural resources management and desertification control, OSS, together with its partner countries, is striving to develop a rational approach to the creation of the tools required for monitoring-evaluation.

Chapter II has adopted this perspective and, first and foremost seeks to formalise various concepts for monitoring and evaluating the combat against desertification and, thereupon, on the basis of the formalised concepts, seeks to develop a methodology for staking out the itinerary, steps and tools for monitoring and evaluating desertification and the impacts of the combat against desertification at the national level. (47).

## II- BASIS OF CONCEPT FOR NRM AND CD MONITORING-EVALUATION MECHANISM

Regular monitoring-evaluation requires two distinct, successive, complementary activities:

- the first activity entails continuous, regularly-paced ascertainment of the environmental and socio-economic situation in the desertification-stricken zones in order to draw up a diagnostic of the evolving trends of the situation. In this case, the brief is to make a qualitative and quantitative description of changes in the state of the degrading natural resources and the socio-economic conditions of the populations that derive all or part of their livelihood from these resources. Relevant descriptors called "indicators" are used for this monitoring work.
- the second activity entails an evaluation of the tendency for the situation to change, as compared to a state of reference. This evaluation is often carried out in a more or less simplified manner but is significant as input for dashboards that must be appropriate for each decision level.

Monitoring-evaluation is done for a variety of users. The main ones are decision-makers, planners and resident populations with different levels of responsibility, ergo requiring different spatio-temporal scales. This is set out in the CCD and the reports to its Conference of Parties, which makes a distinction between several levels of analysis, from the global level for desertification problematics with planet-wide long- and very long-term stakes, via intermediary levels, to the local level for degradation of natural resources in a villagelands area (terroir) that is the fulcrum for community and governmental decisions for the short and medium term.

To avoid a proliferation of approaches and allow national efforts to converge onto a single methodological platform for formulating national monitoring-evaluation systems, it is essential to define common, underlying bases.

The bases are to be drawn from the CCD, CoP recommendations and the experiences of OSS and its member states. They are observed during the conceptualisation and elaboration phases for the monitoring-evaluation tools and are presented in the logical sequence below:

- the combat against desertification is composed of a set of actions, of various types, targeted to preventing or remedying natural resources degradation and its impact on the local populations;
- in a desertification control programme/project, actions are identified on the basis of underlying causal hypotheses that attribute determined effects to them. For the NAP, the general underlying hypothesis is that combating desertification contributes to improving a) control over the causes of natural resources degradation, b) preservation of natural resources, and c) living conditions for the local populations;
- monitoring-evaluation, thus, requires knowledge and accommodation of the causal structure of the National Action Programme to Combat Desertification, in other words, the cascade of effects (physical, biological, socio-economic) expected from actions undertaken, allthwhile giving due importance to the interactions among the effects caused by exogenous changes;
- monitoring and evaluating desertification control measures entails factual observation of the real effects of a programme or project to combat desertification and to evaluate them in relation to the expected hypothetical effects. Evaluations should be carried out, inter alia, in relation to the targeted objectives of each project/programme to combat desertification;

- monitoring-evaluation work should not only precede and accompany the implementation phase of all programmes/projects to combat desertification, but should be continued on a long-term basis, after the project;
- monitoring-evaluation for natural resources management and desertification control measures should, in time, cover all of the national territory affected by desertification and should integrate all decision levels and all of natural resources management.

### **III- FORMALISATION OF THE DESERTIFICATION PROBLEMATIC, THE COMBAT AGAINST DESERTIFICATION AND THE MONITORING-EVALUATION ITINERARY**

The monitoring-evaluation approach to changes of state in the territory should make it possible to respond to two questions concerning a desertification-stricken territory and a desertification control project:

- how to identify the monitoring-evaluation of desertification-stricken territory and a desertification control project, ion indicators that are most appropriate, given the territory's current situation and the decision-makers' expectations;
- after the indicators have been identified and documented, how to move on from monitoring to evaluation.

The approach used in responding to these two questions was based on deductive reasoning, starting with the final product expected, i.e. the dashboard. From there, the approach was driven by three keywords:

- the desertifying territory/system;
- the functioning of the system;
- the quality and sense of change in the state of the system.

The system (ecosystem, agrosystem, etc.) affected by desertification is defined by:

- all its threatened characteristics (composition, structure, etc.);
- its operating method, which provides information on all the mechanisms, processes

and phenomena that govern changes in the natural or artificialised state;

- the quality of the change which provides information on the progressive or regressive tendency of the state of the system.

This analysis shows that before elaborating the dashboard, information must be available on:

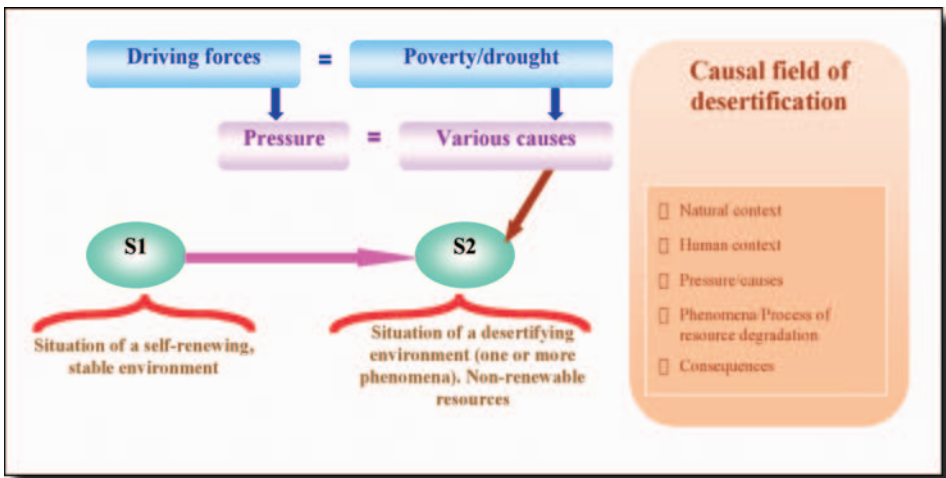
- the characteristics of the system’s components;
- the mode of its natural or artificialised functioning;
- the expected results or risks in planned actions to combat desertification.

To understand the functioning of a desertifying system or a system being restored, consider the concept of:

- the causality field of desertification;
- the causality field of the programme/project to combat desertification.

The causality field of desertification is defined through the frame and the determinants of the regressive dynamics of the natural resources/ecosystems:

Figure 2 - causality field of desertification



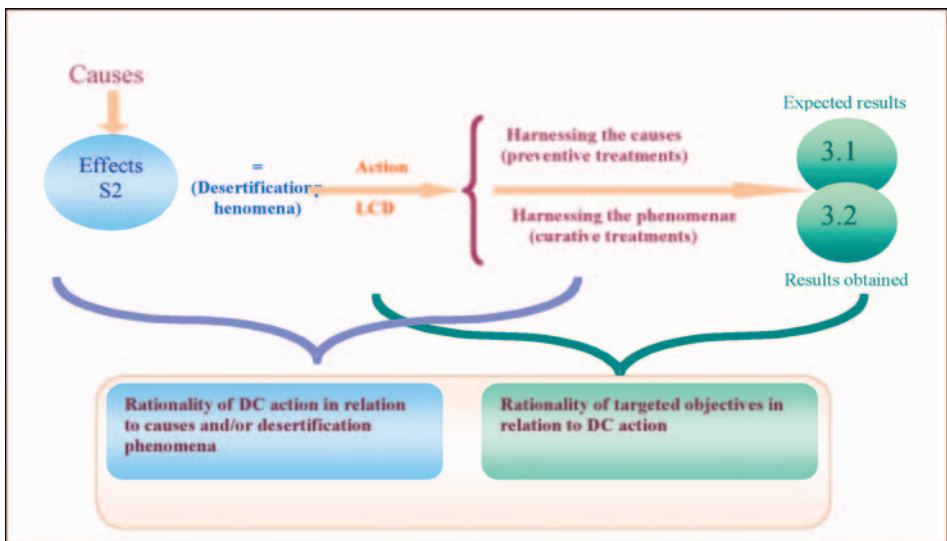
- the frame is defined by the natural conditions of the system which confer productivity, fragility, resilience, on the one hand, and the resident population's socio-economic conditions, on the other;
- the determinants of regressive dynamics are expressed through anthropic pressure, triggered and aggravated by poverty and drought, and reflected in natural resources exploitation practices and the population's survival behaviour. These practices, thus, are the causes of desertification. Each cause engenders at least one negative effect on at least one resource (soil, vegetation, population, etc.). Causes are often compounded and thus produce effects that are more or less complex.

These effects are expressed through desertification processes and phenomena:

- the phenomena are the visible, perceivable, more or less measurable symptoms of desertification (water erosion, wind erosion, degradation of plant formation, population impoverishment);
- the processes are the physical, chemical, biological and economic mechanisms, and/or their interactions, that provoke desertification phenomena.

The causality field for an action/project to combat desertification is defined through the rationality of underlying hypotheses that buttress desertification control actions, actions that are reflected in goals targeted in the treatment of the causes or the phenomena of desertification, or both at once.

Figure 3 - causality field in combating desertification



The global objective of effectively combating desertification should be based on a thorough understanding of the causality field of this scourge in order to develop an action strategy that can be broken down into two modes, that can be adopted separately or together:

- a **direct mode**:

- seeking to treat the causes of desertification through preventive measures (preventive treatment): this includes all actions aimed at eliminating, or at least reducing anthropic pressure on threatened resources by adopting exploitation practices and managerial methods that are compatible with the resources' capacity for reproduction and development;

- treating desertification phenomena (curative treatments): this includes all the techniques for controlling resource degradation. In this situation, as long as the causes have not been brought under control, the effects of the treatment will be ephemeral.

in some situations, preventive measures are carried out alongside and in conjunction with treatments of the desertification phenomena.

- an **indirect mode**:

this entails all measures that affect the driving forces through various types of legal, financial and social companion measures (financial aid for households, distribution of fertiliser, provision of seed, etc).

In any case, the effectiveness of an action to combat desertification is determined in advance by the degree of rationality used in selecting the mode of treatment, in other words, the accuracy of the underlying hypothesis upon which the choice is based.

Furthermore, the monitoring-evaluation itinerary is composed of the totality of steps undertaken, starting with the analysis of the desertification problem in question and culminating in an evaluation of the evolving tendency of the state of the site and/or the impact of actions carried out on the population.

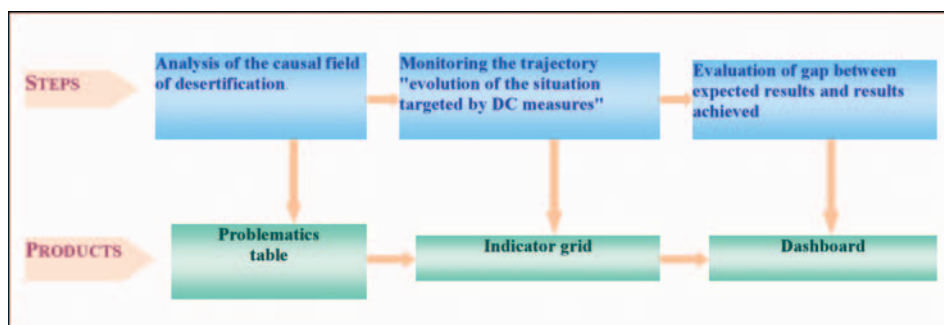
Actually identifying this itinerary is tantamount to formulating the approach to be used for monitoring-evaluation.

The itinerary is staked out by three main landmarks that correspond to three steps (Figure 4):

- the first step: investigation and characterisation of the desertification problem, with all dimensions defined. This leads to the preparation of a foundation on which the monitoring-evaluation system is to be built. This foundation involves permanent questioning, and is the **problematics table**;

- the second step: monitoring and documenting descriptors of the trajectory of the desertification situation as it evolves towards an expected situation. These descriptors are grouped in an **indicator grid**;
- the third step: performance evaluation of actions to combat desertification. Performance means the degree of conformity (or estrangements) of results obtained in relation to a reference situation, either past or targeted. This step makes it possible to produce a **dashboard**.

*Figure 4 - steps and products in the desertification control monitoring-evaluation itinerary*



## IV- CONCEPTUAL PLAN AND ORGANISATION OF NATIONAL MONITORING-EVALUATION MECHANISM

The establishment of a national NAP/DC monitoring-evaluation mechanism and the analysis of its impacts is a long-term endeavour involving all stakeholders at all decision levels. It starts with a consensual conceptual phase, adapted to the countries' conditions, that requires complete respect for the realities of the institutions, their operating methods, their available means and skills, as well as the interests and strategies of the rural populations who are directly concerned by the combat against desertification. The outcome must be a practical monitoring-evaluation mechanism that fulfils these various expectations.



A mechanism means a system defined in terms of the function assigned to it, its components and its operating parts.

Its function is to collect, process, summarise and analyse all available data and information and to calculate indicators on the state of natural resources and on the combat against desertification and then submit them to the appropriate decision-making authorities in order to assist them in taking the right decisions for sustainable natural resources management.

These components are:

- the institutional partnership framework that must be established among all the public and private institutions and organisations of producers and users of data, information and indicators on combating desertification;
- the information database produced regularly by the partners, that can be used to calculate indicators.

The operating mechanisms are rooted in:

- methods on data and information collection, desertification problem analysis, and the calculation and interpretation of indicators;
- an information and indicators dissemination mechanism.

Thanks to strong mobilisation, and assignment of responsibility to the representatives of the producers and users of data and information on natural resources management and the combat against desertification at the national and sub-national levels, a master plan can be designed for a realistic, evolving national monitoring-evaluation mechanism that will be flexible enough to gradually bring in new actors in the combat against desertification at all levels, with due respect for the following principles:

- the mechanism must involve all the actors in natural resources management and the combat against desertification, from the local inhabitants to the political decision-makers;
- it should meet the planners' expectations by providing a tool for optimising the allocation of resources, in the interest of sustainable development;
- it should be adapted to well identified problems and recognised by the decision-makers and the beneficiaries;
- it should be based on an analyses of the causes of desertification, the desertification phenomena and the consequences of desertification on both natural resources and the local populations;
- it is to be created using existing human resources and material means, and be improved so that, ultimately it can reach its cruising speed and optimal efficiency.

This master plan should be composed of three integrated sub-systems for monitoring and evaluating the combat against desertification, matched with three planning and

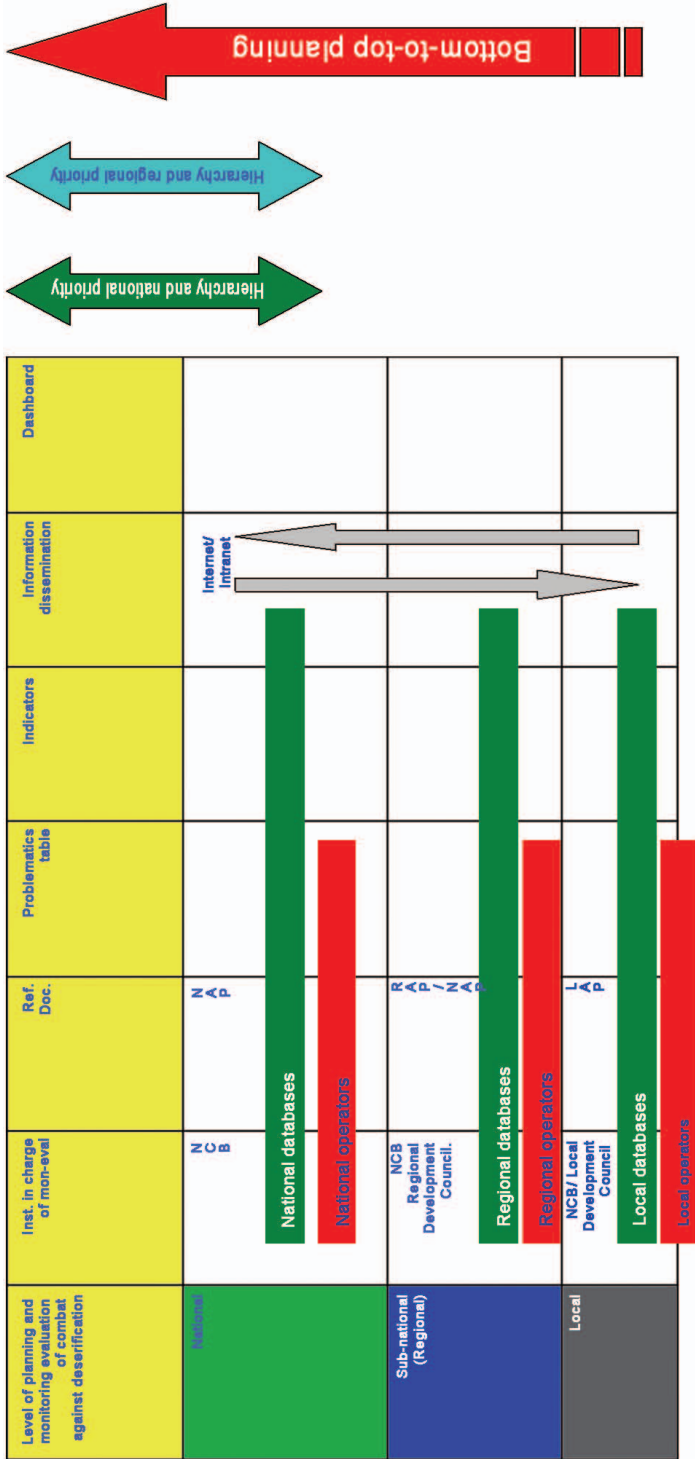
decision levels, considered in terms of the prioritisation of development projects and programmes in which the combat against desertification is seen as one of the levers of sustainable social progress (Figure 5).

Thanks to their individual attributes, each sub-system will be able to function and respond autonomously to the needs of the decision-makers, i.e.:

- planning, decision-making, monitoring-evaluation body composed of the partners and operators;
- a reference document, recognised as the basis for formulating development and desertification control projects;
- a problematics tables on desertification that is specific to the territory under consideration;
- an information collection mechanism to create a database and to calculate appropriate indicators at given levels;
- an indicators grid and a dashboard specific to the level under study and recognised by all the partners.

Further, the mechanism should be equipped with a vertical integration capacity for information produced by the three sub-systems. The purpose will be to ensure overall coherence at the planning and the monitoring-evaluation levels, via an information and data dissemination system, and in application of a negotiated information charter that will have been ratified by all the stakeholders. Figure 5 depicts the structure of this monitoring-evaluation mechanism, that can be adapted to the countries' different situations.

Figure 5 - conceptual diagram of a national NAP/CD monitoring-evaluation mechanism



## V- CREATING MONITORING-EVALUATION TOOLS

### V.1- DEFINITIONS

**The desertification problematic:** this is the whole set of questions that can be asked concerning the details of land and ecosystem degradation in a given context and its impact on the local populations. In this case, the problematic relates to a geographic space with defined land area, morphology, hydro-pedological and ecosystem functioning, and the local population's planning and exploitation mode.

**Desertification problematics:** this new word refers to research on and identification of the main elements of the desertification problematic in a given area. It is an analytical approach to the causality field of desertification, more comprehensive than a diagnostic which is limited to ascertaining and describing system dysfunctioning.

**The problematics table:** within a specific table, the problematics table is the simplified, summarised expression of the desertification problematic.

### V.2- PRODUCING A PROBLEMATICS TABLE

A specific problematics table is needed for each level of analysis of a desertification situation. This process is composed of several successive steps, planned according to a determined line of logic:

- identification of decision-makers and what they expect from monitoring-evaluation. These expectations stem from the decision-makers' centre of interest and priorities in combating desertification. For the national level, NCB would be a suitable body for NAP management and monitoring-evaluation;
- selection of a logical framework (or model) appropriate to the indicators. This selection stems from the results of the first step and could vary, depending on the level of analysis and/or decision. For the national level, in this chapter the PSRI (Pressure-State-Response-Impact) model was adopted;
- identification of a reference document, in relation to the diagnostic of the state of desertification, recognised by the decision-making centre and other actors in the combat against desertification as the main source of information on the framework, approach,

goals and means for desertification control. At the national level, the NAP quite clearly is the main reference in this field;

- identification of the elements of the desertification problematic that can be considered as the best descriptors of the trajectory of evolution of the situation under study. Two groups of elements must be borne in mind, especially at the national level: the state of the natural resources and the socio-economic conditions of the local populations;
- structuring the problematics table: this table must be able to restate the results of the analysis of the causality field for desertification and provide all the elements needed to create the causality field for an effective combat against this scourge. It can also be used to identify the appropriate actions to combat desertification, on the one hand, and to guide the selection of indicators relevant to monitoring-evaluation, on the other. This table, thus, ensures that the monitoring-evaluation concept and practices are well anchored, the basis being a rational formulation of the problem stated. Hence, it is a relay to the logic framework adopted, i.e. the PSRI, which tests the rationality of the choice of responses to the land degradation issue.

*Table 1 - Structure of a desertification problematics table at the national level*

Space / Resource, object of desertification and ME	Land area concerned	Population concerned	Geographic location	Desertification causes	Desertification phenomena	Degradation process	Consequences of desertification	Quantification of the degradation
Arable lands								
Forests								
Steppe-Rangelands								
Water resources								
Humid zones								

### V.3- CREATING THE INDICATOR GRID

Following the logic used in the itinerary for monitoring-evaluation and combating desertification described above, the indicator grid stems from the exploitation of two causality fields for desertification and desertification control. The causality field for desertification, expressed through the problematics table, thus, constitutes the base in which the indicators grid is embedded:

- the column of desertification causes gives the pressure indicators;
- the column of desertification phenomena gives the state;
- the column on the consequences gives the impact indicators comprising two components:
  - impacts of combating desertification on the natural resources;
  - impacts on the local populations.

The causality field in the combat against desertification can also generate response indicators:

- indicators on the importance of the means and measures devoted to combating desertification,
- indicators that provide information on the nature of actions engaged to combat desertification, recognising that these actions can be keyed to treating the desertification causes or phenomena.

For a given desertification problematic, these indicators may change from one decision level to another. But they must be complementary, e.g. degradation of steppe ranges may be described at the national level using remote sensing and may be expressed as a plant cover rate or vegetation index or as the albedo, while at the local level this same degradation would require indicators that are more pertinent for the rangeland users, i.e. descriptors of the floristic composition, the carrying capacity and/or fodder unit productivity per hectare.

The relevance of the indicator, thus, is defined in terms of:

- the quality of information provided, measured against a given aspect of the desertification problematic;
- how well it meets the needs of the analysis and/or decision-making centre in charge of planning and management for the territory under study.

From another angle, to enable the CCD Conference of Parties and other international organisations to monitor and evaluate the state of the planet's natural resources, it is important for the indicator grids of the various countries to have comparable structures and contents (common indicators, etc.). It is with this in mind that OSS and CILSS submitted to their member states, a prototype of a grid composed of a limited number of basic indicators and structured around two objectives in the combat against desertification, viz.:

- improvement of the socio-economic conditions of the local populations concerned;
- natural resources management.

Experience showed that this restricted grid was useful in comparing and capitalising the results of the countries in the region, but was not able to faithfully reproduce the various aspects of the combat against desertification and its impacts at the country level. Hence, the proposal to construct a second, more comprehensive grid that will include other available indicators. This means that two grids would be available at the national level.

- **a broad grid** comprising all available relevant indicators (Pressure, State, Response and Impact) with due attention to the various actors' strategies and objectives. This would be a basket, rich in regularly produced data, that can be used as justification and reasoning for evaluations that will be carried out at a later time. Simple and aggregate indicators that are the most significant for constructing a restricted or summary grid are drawn from these evaluations;
- **a restricted or summary grid** inspired by the one OSS proposed to the countries of the region, that would serve, inter alia, to compare the environmental performances of these countries.

*Table 2 - structure of the summary grid of indicators of desertification and impacts of the combat against desertification at the national level*

CCD objectives	Specific objectives of countries' NAPs	Resources allocated	Indicators	Category P-S-R-I*
Poverty eradication	Sustainable rural development	Human resources		
Natural resources management	Control of land and ecosystem degradation	Farmlands		
		Forests and steppe		
	Sustainable management of water and harnessing the effects of drought	Water resources		
	Optimal functioning of humid zones	Humid zones		



## V.4- CONSTRUCTION OF THE DASHBOARD

The first two steps in the monitoring-evaluation itinerary are technical. With appropriate pedagogical consultation it would be possible, working with desertification control operators, to design and establish the tools required to monitor and evaluate desertification and the impacts of the combat against desertification.

But, under present resource management conditions, it would be more difficult to carry out the third step of this itinerary, which is also technical, but it has a political dimension and thus, for the national level, would require more consultation and coordination among the operators in order to design and adopt a special, widely approved type of dashboard.

This would be a summary document for evaluating the combat against desertification and its impacts and, as such, is an **extension of the indicators grid** that also includes arguments in support of this evaluation and elements for orientating decisions that should be taken to reverse possible negative trends.

The transition from the indicators grid to the dashboard is carried out through a linkage that draws on the criteria used to evaluate the tendency of the situation to change.

The **nature** of these criteria depends on the problem and the decision-makers' expectations. Mention can be made of three types, that emanate from different lines of logic:

- an **"objective"** criterion expressed through physical, biological and socio-economic objectives established in advance in the programme/project on the basis of deterministic hypotheses that assign specific simple or complex effects to the actions to combat desertification;
- a **"threshold"** (or margin) criterion, to analyse the indicators' value that constitutes a red line not to be transgressed. This is the threshold of intolerance for certain risks (limit to degradation, process irreversibility, etc.);
- finally, in the simplest cases, the evaluation criterion can be a **state of reference** at a given date, for instance the starting date for the monitoring-evaluation process.

For the national level, the prototype of the dashboard proposed here is composed of four compartments:

- a first compartment, that comes from the problematics table (with lines for natural resources, compounded by human resources on the one hand, and columns that detail the main data on desertification);
- a second compartment, that describes the indicator grid;

- a third compartment exclusively for a thematic evaluation for each indicator on the basis of one or more criteria adopted;
- a fourth compartment, allocated to a global, summary evaluation, quantitative and/or qualitative, of the overall state of each resource on the basis of results and indicators available in the **broad grid**.

These two modes of evaluation can be expressed through simple signs that are to be selected together with the partners as a whole.

## V.5- THE INFORMATION DISSEMINATION SYSTEM

In time, the national mechanism for monitoring and evaluating the combat against desertification should be run through a communication network that connects all the information management and production sub-systems available throughout the country. To apply this rule, the information dissemination system designed for the mechanism described earlier (Figure 5) has two components:

- **a horizontal component**, specific to each of the three levels of monitoring-evaluation (local, sub-national, national). Its function is to collect and process raw data, feed a database specific to each level being considered, and make these data available to potential users at all levels of decision-making;
- **a vertical component** for the circulation and exchange of information among the three aforementioned levels. In most of the countries this component uses periodic or detailed reports on natural resources management and on the combat against desertification. In the medium term, and considering the rapid advances in adopting new communications technologies in most of the countries, the information dissemination system, that is part of the NAP/CD monitoring-evaluation mechanism, will be able to use Intranet/internet for its two higher levels (sub-national and national) and its vertical connections.

## VI- CONCLUSION

The conceptual approach in monitoring and evaluating the NAP/CD and its impacts, through the formalisation of the causality fields for desertification and the combat against desertification, has enabled a proposal for a rational method for creating appropriate monitoring and evaluation instruments, especially at the national planning and decision level. This method uses a three-step technical itinerary that interconnects in deductive logic and is expressed through the production of three monitoring-evaluation instruments: the problematics table, the indicators grid, and the dashboard. This was the basis used to construct a conceptual plan for the national NAP monitoring-evaluation mechanism, structured at three levels (local, sub-national and national), as recommended by the CCD, and integrated through a universally beneficial information dissemination and exchange system. This approach was tested by OSS and proved to be readily adaptable in the states' conditions, especially in North Africa which has a long experience in combating desertification and has institutional operations structured at the three planning and decision levels mentioned above.

Table 3 - Structure of the dashboard for NAP/CD monitoring-evaluation proposed for the national level

Resources affected by desertification	Causes of desertification	Phenomena	Monitoring the indicators		Thematic evaluation		Global evaluation of resources						
			Indicator	Value of indicator	Reference	Evaluation	Global assessment Quantity	Global assessment Quality	Relevance of responses	Socio-economic impacts of combating desertification			
Local population			- Poverty - Rural exodus			++				+-	+-		
Farmlands						+-							
Forests													
Steppe													
Water resources													
Humid zones													

Using this approach in making the indicator grid based on the problematics table can, in certain cases, come up against problems of application due not to the irrationality of the approach but to various types of constraints (institutional, human and material capacities, etc.), in particular shortage of regularly produced, reliable data on the causes, phenomena and consequences of desertification and the impacts of combating it. This is probably the situation in many countries of the circum-Saharan region, but should not mean preventing the adoption of the approach or not launching the monitoring-evaluation process using available, valid data, on the condition that these data are relevant, according to the definition given above. The problematics table will remain the foundation on which the ideal indicator grid should gradually be built, and the reference for the development of research themes and future projects on indicators.

Thus designed and produced, the indicator grid is the record of elements of the desertification problematic observed at regular intervals. It is the tool for monitoring this blight and the impacts of the combat against desertification.

## CHAPTER III

# **MONITORING-EVALUATION, A TOOL FOR SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES AND COMBATING DESERTIFICATION IN MOROCCO**

Mohamed WAKRIM



## I- INTRODUCTION

As concerns the lengthy process for adopting the CCD principles and directives, Morocco's design and establishment of a monitoring-evaluation mechanism for managing natural resources and combating desertification is an example of how to capitalise available experiences in the region. The first step was to draw lessons from the long Moroccan experience in communal management of natural resources in various regions of the country throughout history and then to benefit from recent achievements, presented above and developed by OSS and its member states (47). It was against this background that Morocco, through a multilateral development project in the Mediterranean zone<sup>1</sup>, started establishing its national monitoring-evaluation mechanism for natural resources management and combating desertification. The results were positive, as can be seen from the following.

## II- DESERTIFICATION IN MOROCCO: THE NATURAL AND SOCIO-ECONOMIC CONTEXT

In Morocco, out of a total area of 71,085 million ha, less than 40 million are suitable for agriculture, livestock production or forestry (cf. Map no. 1 SAU total agricultural lands) i.e. useful agricultural lands 8.7 million ha, forests 5.8 million ha, Esparto grass (nappes alfatières - *Stipa tenassissima*) 3.2 million ha, rangelands 21 million ha. Agriculture is dominated by cereal crops (5.6 million ha., i.e. over 60% of the SAU). The other crops i.e. fruit tree plantations, legumes, industrial and market crops and fodder, only cover a small percentage of the SAU since close to 25% is still left to fallow (33, 48).

Rational exploitation of national resources is rampant with problems and constraints, especially water shortage, vagaries of climate, investment-inhibiting land tenure structures and statutes, intensified land use, land vulnerability, scarcity of cultivatable lands. The potential, thus, is only around 8.7 million ha.

The degradation of natural resources and arable lands is mainly caused by the combined effects of climate change and human activities exercised on soils that are generally very fragile, with low fertility and little organic matter. For the last twenty years, the climate has been changing, i.e. the rains are very irregular and fast expanding stretches of land have become vulnerable and fragile. This condition, aggravated by population

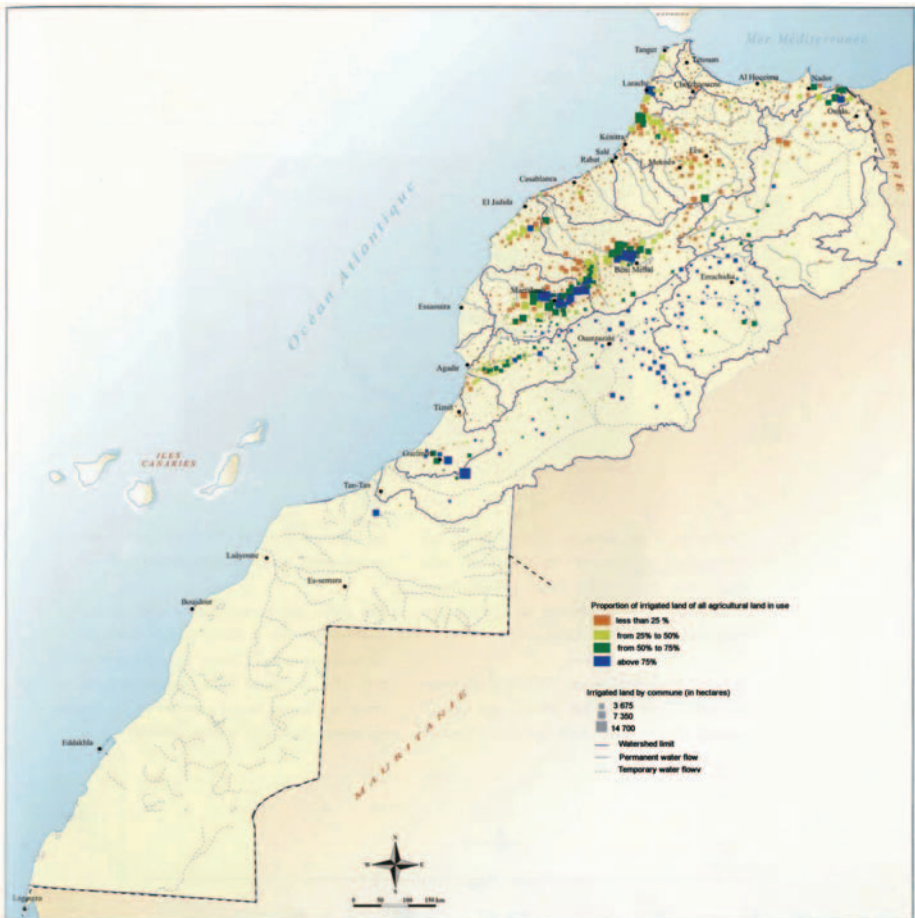
<sup>1</sup> Project to establish monitoring-evaluation systems for national action programmes to monitor and evaluate the combat against desertification, cofunded by the European Commission's Small and Medium Action Programme (SMAP).



pressure, has meant that in large, traditionally rural economic areas, the landscape is deteriorating with serious degradation of the physical environment and natural plant formations (34).

In the country's development strategies, the NAP/CD is designed as a framework for intervention that allows the rural populations to fully express their needs, to take initiatives and to contribute their local know-how in sustainable management and exploitation of natural resources. Principles conveyed through the NAP grant special attention to concepts on participation and sustainable development. The application of these principles will enable the users of the natural resources to express preferences and defend their interest in a spirit of responsibility and solidarity.

*Map 1 - total agricultural lands (SAU) under irrigation in Morocco  
Source: Recensement général de l'agriculture, 1996*



## **II- MONITORING-EVALUATION, AN ESSENTIAL COMPONENT IN MOROCCAN NAP/CD**

Because of Morocco's geography and climate, natural resources management and sustainable development are becoming of increasing concern at all levels of responsibility and, for some decades already, have been gaining clout in government policy and in actions conducted by state bodies and associations as well as by development partners.

When formulating the Moroccan NAP/CD, consideration was given to the results of past and current experiences, especially integrated natural resources management projects that have been implemented for the last twenty years, and have been run through joint efforts, especially with U.N. bodies.

One of the lessons learned from past experiences with the NAP process is that efficiency requires priority attention to the establishment of a monitoring-evaluation system to guide NAP implementation.

At present it is generally agreed that the successful implementation of natural resources management and desertification control programmes predicates, inter alia, or even essentially on the control of elements used in monitoring and evaluating progress and the impact of various components of natural resources development projects.

### **III.1- EXPECTATIONS OF DECISION-MAKERS AND OTHER STAKEHOLDERS IN NRM AND COMBATING DESERTIFICATION**

In Morocco, like in the rest of North Africa, using lands for agriculture and livestock production is a very ancient practice. For centuries, techniques, knowledge, and experiences have been accumulated and capitalised, especially those relating to aridity, water deficits, and protracted drought spells. The khetaras (underground canals) techniques are a good example.

Actions and techniques in combating desertification have been substantially improved. And exercises in defining technical packages, and adapting them to different situations and lands have met with considerable success. But there are still severe shortcomings in approaches and models for managing, running and supervising NRM projects, shortcomings whose detrimental effects on the implementation of these projects are increasingly recognised. This explains the importance currently being given to the development and implementation of monitoring-evaluation mechanisms and other such aspects.

In this situation, the mechanism established for guiding NAP/CD implementation was seen as a model and a pilot exercise for use in natural resources management and improving the local living conditions.

What the decision-makers and the managers of natural resources expect from the monitoring-evaluation system is expressed in the NAP document in more tangible terms as follows: "Monitoring desertification and the impacts of combating it are NAP priorities. Monitoring-evaluation should provide relevant information that enables the NCB to evaluate programme performance and make appropriate decisions on remedial actions needed for these programmes."

### **III.2- SPECIFIC CHARACTERISTICS OF THE MOROCCAN APPROACH TO DESIGNING THE MONITORING-EVALUATION TOOL**

The monitoring-evaluation mechanism was designed to provide the Moroccan NAP/CD with a system capable of generating substantial added value, i.e.:

- better oriented, more dynamic implementation,
- better coordination at the national level, and
- greater dynamism and encouragement in international cooperation.

The specific objectives of the system are defined through the roles that have been assigned to it, viz.:

- a tool for supervising and guiding NAP/CD implementation,
- a decision-support tool for NAP/CD: dashboard for the decision-makers,
- the most appropriate way to prepare periodic reports on desertification (and reports to be submitted to the CoP).

Specific characteristics of the Moroccan NAP/CD monitoring-evaluation mechanism can be seen in the procedure used to establish it, and in its operating method. The main concern is the overriding need for its adoption by the institutions and its post-project sustainability. To reach these goals requires:

- assurance of the relevance of the system and recognition of its usefulness in guiding NAP implementation;
- making the forthcoming mechanism the preferred tool for preparing Morocco's reports to the Conference of Parties (CoP) and other evaluation reports;
- culminating the project with the establishment of a medium- and long-term national observation facility based on the demarcation of homogeneous territorial areas.

## IV- GENERAL PLAN FOR THE ORGANISATION OF THE MONITORING-EVALUATION MECHANISM

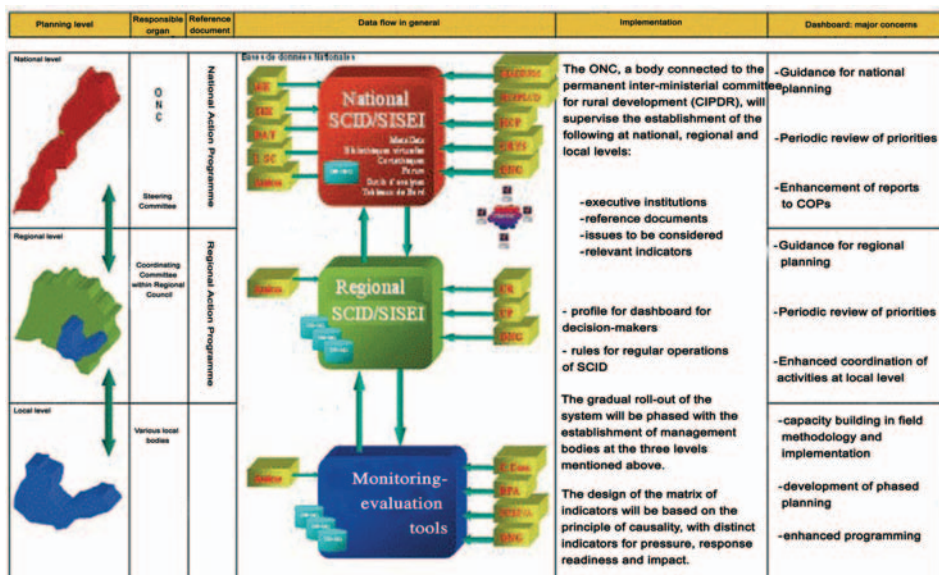
The construction of the monitoring-evaluation mechanism will be guided by CCD objectives and the major points of concern expressed in the Moroccan NAP/CD. It will be a reformulation of the CCD objectives and sub-objectives, adapted to the Moroccan context, on the one hand, and a definition of the main themes and areas affected by desertification, on which the monitoring-evaluation system is based, on the other, e.g. for the CCD objective on natural resources management, Morocco is focusing on water resources, forests, plant cover, rangelands, rainfed agriculture, irrigation agriculture, the oasis.

At the conceptual level, the general construct of the national monitoring-evaluation mechanism includes three planning and decision levels, i.e. national, regional and local and identifies the institutions, actors, problems areas, and types of indicators for each of these levels. In practice, it was necessary to adopt the principle of constructing the mechanism progressively, using a participatory approach that involves all the stakeholders, in order to ensure operationalisation and conditions of uptake by these stakeholders. Various pre-construction measures and conditions had to be respected.

Thus, the monitoring-evaluation mechanism, which is to be constructed at each of the three aforementioned levels, must include the same types of components, i.e. partners organised into bodies and structures with well-defined functions, and NAP information dissemination and management capacities.

With regard to the construction of the mechanism, up to now the national level has benefited most from the exploratory work done by the NCBs, — with the support of the SMAP project, — to obtain tangible results in identifying and implementing specific monitoring-evaluation tools for this level of analysis.

Figure 6 - diagram of the organisation of the national NAP/CD monitoring-evaluation mechanism in Morocco



## V- MONITORING-EVALUATION TOOLS AT THE NATIONAL LEVEL

### V.1- THE INSTITUTIONAL ORGANISATION FOR MONITORING-EVALUATION

The National Coordinating Body (NCB) is responsible for monitoring-evaluation and the Haut Commissariat des Eaux et Forêts et de la Lutte Contre la Désertification is responsible for coordination. During the first phase, when Moroccans were being introduced to the subject, made more aware and trained, it seemed appropriate to create a network of partners involved in monitoring-evaluation and set up a technical body to oversee the implementation of the NAP monitoring-evaluation mechanism. The network has 15 members who represent the main institutions and organisations working directly on natural resources management and rural development, and the technical body has validated the list of indicators, the renovation project for the desertification information

system (DIS) and the information charter. To study files on certain specific desertification issues, the network has created specialised sub-groups composed of certain of its members. Five sub-groups have been established to work on:

- poverty reduction,
- water resources,
- forests and plant cover,
- rangelands,
- rainfed and irrigated agriculture and the oasis,

At their meetings, these groups have tried to update the indicators and provide information on desertification for the information dissemination system site ([www.scid.ma](http://www.scid.ma)).

## V.2- GRID FOR DESERTIFICATION PROBLEMS

After making an inventory of data, examining the descriptive files on indicators, and considering the wealth of existing national information, it seemed worthwhile to start analysing the information available at the outset and to provide the NCB and the decision-makers with early evaluations. Ten important themes in NRM and combating desertification were identified; aspects of these themes, which were considered most decisive in combating desertification, were briefly described and documented. Thematic files were prepared for the following subjects:

- socio-professional situation in rural areas,
- demography and pressure on resources,
- water resources
- forests,
- pastoralism and rangelands,
- rainfed agriculture,
- irrigation agriculture,
- oasis,
- improvement of institutional organisation,
- improvement of knowledge of the desertification phenomenon.

Elements that characterise each of the themes listed above:

- the problem,
- main indicators selected,
- graphic illustrations,
- overall assessment of trends,
- fields and axes of improvement.

Besides presenting and documenting the themes listed above, the NAP site also can record and exchange information on a wealth of traditional knowledge and on modern techniques for land capitalisation and conservation.

### V.3- THE INDICATOR GRID

According to the CCD, indicators of monitoring-evaluation mechanisms should make it possible to:

- evaluate the extent of desertification and monitor its evolution;
- monitor and analyse the NAP-Morocco establishment process;
- evaluate the impact of the NAP in combating desertification.

After a lengthy consultation period on the indicator grid for NRM and for desertification control measures and their impacts, there was unanimous agreement to establish it on the basis of proposals from relevant institutions and available descriptive data. A descriptive file was drawn up for each indicator that was identified and adopted.

The list of indicators is given, by theme, here below:

#### - Poverty reduction (49)

- Population growth rates;
- Rural population as a percentage of the total population,
- GDP per inhabitant;
- Illiteracy rate;
- Employed population working in the agricultural, forestry and fisheries sector as a percentage of the employed rural working population;
- Gross schooling rate in primary education;
- Percentage of rural households connected to the potable water grid;
- Percentage of rural households with access to electricity;
- Poverty rates;
- Rural unemployment rates.

#### - Water resources (12)

- Volume of surface water harnessed;
- Volume of groundwater harnessed;
- Water resources mobilisation rate;
- Volume of water available per inhabitant;
- Dam fill rate (September);
- General water quality index;
- Dam silting rate.

#### - Forests (30)

- Land area;
- Reforested area;
- Regenerated area;
- Forestland demarcated and homologated;

- Area treated against water erosion;
- Area with fixed dunes;
- Area with protected, developed lands;
- Area burnt;
- Area cleared;
- Degraded forest area.

#### - Rangelands (1)

- Evolution in numbers of small ruminants;
- Number of cattle watering points;
- Part of land area with herding facilities.

#### - Rainfed farmlands (33)

- Percentage of SAU used for annual cereal crops;
- Percentage of SAU given to fallow;
- Percentage of annual lands farmed with cover crop, in relation to total mechanised area;
- Land area for main crops (crop rotation)
- Total land area for fruit tree plantations;
- Land area planted each year under the Plan National Oléicole (oil-yielding plants);
- Annual production of main crops;
- Annual land area for irrigation crops;
- Part of irrigated crops that are water intensive;
- Annual quantities of fertilisers and pesticides used;
- Yields and production of main irrigated crops.

#### - Irrigated farmlands (34)

- Volume of water consumed by irrigation;
- Irrigated arable lands;
- Equipped lands;
- Water fees collection rate.

#### - Oasis (37)

- Number of plants distributed as part of the national palm plantations restructuring and rehabilitation plan.

#### - Global indicators (3)

- Vegetation index (NDVI);
- Surface temperature (ST)



## V.4- ESTABLISHING AN INFORMATION DISSEMINATION SYSTEM

One of the most significant achievements of the NAP monitoring-evaluation mechanism implementation process is the platform for information exchange, i.e. the SCID website<sup>2</sup> "www.scid.ma", which quickly turned into a place for the project's partners to find documentation and information and to share data. It is also a source of information for several other parties interested in natural resources protection.

Besides monitoring indicators, the site provides a large variety of data and information:

- at the international level: the CCD in the countries' languages (Arabic, French, English), notes on themes connected to the Convention and on the Conference of Parties, etc.;
- at the national level: the main NAP document and a summary in several languages, national reports to the CoP, etc.;
- NAP monitoring-evaluation: architecture, essential data, etc.;
- the indicators and their updates, per theme.

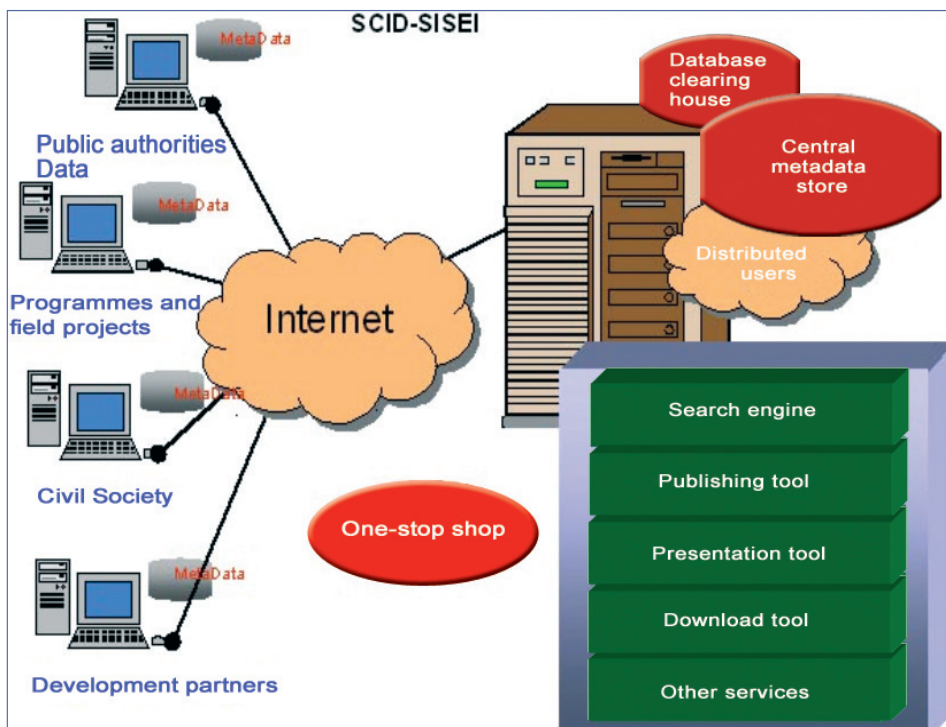
The first steps (initiation, development, data and information input) for the site have been completed. The present phase of the monitoring-evaluation mechanism implementation process is devoted to operationalising the site and ensuring that it is used, e.g. for the preparation of the 3rd national report to CoP7 (Nairobi, 2005).

As now designed, the Desertification Information System is slated to become a portal for access to complete social, economic and environmental information related to the desertification problem, including raw data, analysed information, indicators, reports, standards and other documents. The ultimate aim of the SCID is to provide useful, integrated environmental information for decision-making. The SCID uses a stepwise approach that emphasises the creation of partnerships and further development of the basic architecture of the system. By compiling data, information and knowledge and then making it available to the partners, the SCID provides assistance in policy formulation, environmental evaluation, indicators and environmental reports for public stakeholders, business companies and local communities.

The success of the monitoring-evaluation mechanism is due inter alia and mainly to the effectiveness of the information dissemination system, the SCID. The new network of partners should be able to continue feeding the system and updating the information and data compiled in 2004 and 2005 in conjunction with and under the supervision of the Direction des ressources naturelles et de protection de la nature, which is the department of the Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification now responsible for management.

<sup>2</sup> SCID: Desertification Information System.

Figure 7 - Diagram of information dissemination system on NAP/CD monitoring-evaluation in Morocco



## V.5- PHASE ONE IN ESTABLISHING A DASHBOARD

OSS' work in conceptualising a model for a NAP/CD monitoring-evaluation dashboard (see preceding chapter) is a reference, a source of encouragement for the countries of North Africa to adapt the dashboard to their various situations. But this presupposes that considerable progress has been made in producing well-identified, pertinent indicators regularly, on the one hand, and that criteria for evaluating them are established and the NCB adopts them, on the other.

Pending adaptation of this approach to the specific case of the Moroccan NAP/CD monitoring-evaluation mechanism and the preparation of a complete set of tested, validated indicators, a simpler approach is being advocated for the first evaluation of the Moroccan NAP/CD. In this approach, a descriptive datasheet is produced and documented to provide information on the position of each of the themes selected earlier. Excerpts to illustrate the eight files on natural resources management are given below:

### Datasheet: "Demography and pressure on human and natural resources"

In spite of the unrelenting, growing migratory flows, as can be seen by the difference between the population growth rate in the cities (2.91%) and the rural areas (0.17%), various analyses agree that the present overpopulation in the rural areas (by 5 million people who are landless or have lands of insignificant size) will continue beyond the year 2020.

Pressure exerted on the land is also shown through the microfarmlands (70% of the farms are less than 5 ha big) and the rate at which farmlands are taking over rangelands and forests (about 1.5 million ha in 20 years, i.e. 1% increase per year). (32)

### Datasheet: "Socio-professional situation in rural areas"

Substantial improvements have been made, especially in terms of schooling in the rural areas, including schooling for girls, and, to a lesser extent, literacy training.

On the other hand, the rate of rural dwellers living below the poverty line is still high. The rate is heavily felt, especially considering the importance that the CCD gives to poverty alleviation since poverty is recognised as one of the main reasons for accelerated desertification (49)

#### Datasheet: "Rainfed Agriculture"

The main problems are water scarcity, severe climate, land tenure structures and statutes that do not encourage investment, intensification of land use, soil fragility, low organic matter rates and scarcity of arable lands. The result is that potentials are limited, to a land area of about 8.7 million ha. (31)

#### Datasheet: "Forests"

Forestlands are shrinking at an estimated annual rate of 31,000 ha mainly due to collection of more firewood than the forests can produce, clearing operations and forest fires.

Despite the State's efforts to protect and reconstitute the forest species, the afforestation rate is a mere 8%, which is well below the level generally recognised for maintaining the ecological and environmental equilibrium, i.e. 15-20%. (31)

#### Datasheet: "Pastoralism and rangelands"

The impoverishment of the plant cover can be seen through the loss of biodiversity and the unearned potential income due to less pastoral activity. This deficit contributes to water and wind erosion, and the salinisation of certain waterways. Stripping the salt-rich geological formations in the Sebou Basin contributes significantly to polluting the waterways where water salinity is so high (over 4ds/m) that the waters cannot be used for irrigation. (34)

#### Datasheet: "Irrigated agriculture"

Hydroagricultural development, as part of the policy on the million hectares of irrigated agriculture, contributed tangibly to rural development. It is generally agreed that these results could be much better if the following measures were implemented: improve the efficiency of the water distribution systems, develop and adapt techniques for using less irrigation water, limit high water consuming crops, make irrigation water users more accountable. (48)

#### Datasheet: Oasis management and development

From the ecological angle, the oases are threatened by two crucial problems: salinity and sanding.

These problems have already affected 30,000 ha in the Ouarzazate and Zagora provinces and 250,000 ha in the Errachidia province. The ultimate manifestation of these types of degradation is lower crop yields and shrinkage of farmlands that are already very limited. (3)

## VI- CONCLUSION

Seen in relation to Moroccan geography and climate, natural resources management and sustainable development have, for some decades already, been increasingly accepted as major issues at all levels of decision-making and are gaining ground in public policy and in actions by the state and associations and with development partners.

The Moroccan NAP monitoring-evaluation system implementation process has been started with the active involvement of most stakeholders at the national level. This has been done with due respect for the major orientations of both national and sectoral policies, as well as integrated policies for natural resources management and the main guidelines of the CCD. The project being carried out by the Haut Commissariat des Eaux et Forêts et la Lutte Contre la Désertification together with OSS, and with backing from the European Commission, has been well timed as support for the national effort to implement the components of this programme and has supported significant progress in constructing the Moroccan desertification control monitoring-evaluation mechanism.

Results at national level are clear evidence of the stakeholders' widespread awareness of the need to adopt this new tool and their support for the long development process, and its adaptation to the workings and procedures of national services responsible for natural resources management and sustainable development. The partners see the projects and its outcomes as considerable achievements and signs of progress for the future of the procedure.

But, the sustainability of results still predicates on the NCB's capacity to absorb them and gradually incorporate them in programme planning procedures and projects for NRM and desertification control. At this stage, the problem is for services in charge of these programmes to obtain the resources needed for building up human capacity and resources to ensure the sustainability of the mechanisms that have been developed. The NAP should adopt this requirement so that, with time, monitoring-evaluation can become an independent function through the NCB.

The participatory approach, sectoral and spatial integration, the partnership and contractualisation approach, greater involvement and responsibilities for stakeholders (including local populations) in sustainable development projects for natural resources are becoming common denominators for all desertification control and NRM projects in general.

Successful implementation of concepts and approaches are based, *inter alia*, or even essentially on the control of elements for monitoring and evaluation progress and control of the impact of project components on the state of natural resources.



## CHAPTER IV

# MONITORING-EVALUATION, TOOLS TO CAPITALISE THE RESULTS OF DEVELOPMENT PROJECTS: THE NIGER CASE

Hassane SALEY  
Aboubacar ISSA

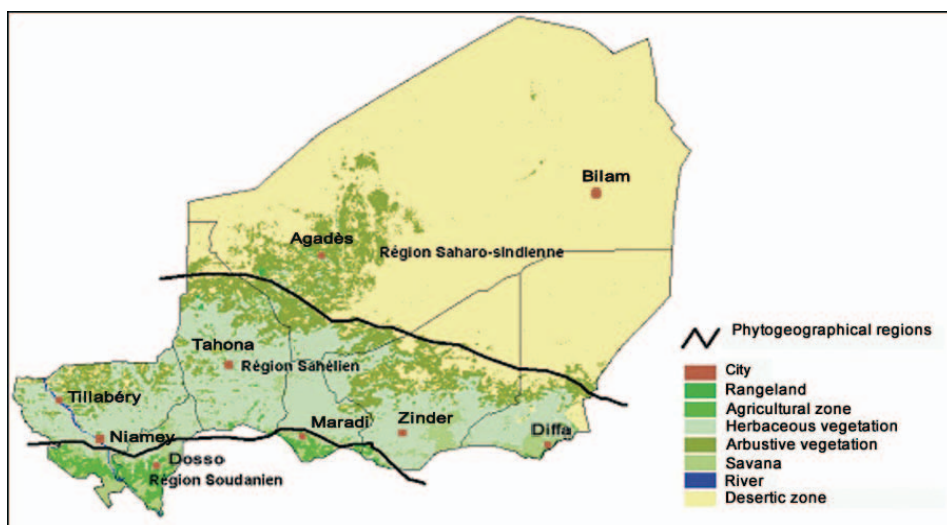




## I- COMBATTING DESERTIFICATION IN NIGER

Niger is a Sahelian country located between latitudes 11°38' - 23°26' and longitudes 0°3' - 15°57'. It covers an area of 1,267,000 km<sup>2</sup> (3/4th desert) and has a population of close to 12 million inhabitants. Niger is one of the African countries that suffers most from desertification.

*Map 2- Land cover in Niger*



Desertification in Niger can be traced to the characteristics of the natural environment, on the one hand, and the characteristics of the population and human activities, on the other hand. How harmonious relations are between the population and the environment (resources) depends, first, on historical and traditional factors, but also on more recent and timebound factors (determinant factors).

Culture and tradition are the main historical factors that determine peoples' behaviour and the nature of human activities, and, moreover, heavily influence and regulate people's conduct and their relations with the environment. Family organisation and communities of people are greatly affected, or even ruled by tradition. This has left a strong mark on certain basic issues, e.g. demography, land tenure.

As concerns the cyclical factors, the most decisive factor is the climate, i.e. aridity and its direct effects on water resource availability. The result is that the history of Niger is inseparable from that of the great Sahelian droughts. This is a state that has profoundly

marked the land and soil utilisation patterns, and largely conditions the nature of relations between the resident populations and the environment.

This characteristically malfunctioning relationship gives rise to a whole series of mutually reinforcing development problems that accentuate the imbalance between the people and the environment.

Niger's main development problems include the fragility of the crop production systems and the precarity of crop- and stock-growing conditions. The underlying cause is continually greater pressure on the resources to cope with various conditions such as population increases, land segmentation, decreased soil fertility, the farmers' and herders' precarious technical and economic situation, inadequate farming and herding practices, drought, etc. The result is a considerable drop in agricultural yields and productivity that further impoverishes the population and aggravates the problem of fragility and precarity.

To compensate for losses due to declining production and productivity, the farmers increase their farming areas, moving onto marginal regions with far less natural potential. Economic and ecological losses are adjoined by conflicts over land use, which pits farmers against stock farmers/herders. Lower incomes exacerbate an old conflictual situation that favours sedentarisation (agriculture) over nomadism (herding).

Besides all these problems, the country also has major energy problems, especially for the households. Energy problems and agriculture are responsible for the serious shrinkage of forestlands. This situation can be traced to a combination of economic, legal and institutional factors.

Water resources: in some areas Niger has very interesting, but unexploited water resources which explains why these areas do not attract new communities. The result is that population pressure is greater in areas with easier access to water, thus adding to the region's environmental fragility.

Development problems are both the result and cause of the malfunctioning relationship between the population and the environment. They stem from and contribute to the great causes of alarm that seriously impact development in Niger: food security, poverty, energy crisis. **These are the major crises at the heart of the desert encroachment problem in Niger.**

## 1.1- MANIFESTATIONS OF THE PROBLEM

The problem of desertification can be traced back to manmade activities that exert heavy pressure on natural resources and to the effects of recurrent droughts. The national economy is essentially based on subsistence agriculture which makes up a dwindling share of the GDP: from 35.3% in 1961 to 22.5% in 1980 and only 18.6% in 1991. The potential for arable lands is going down alarmingly as following, the

traditional system for maintaining soil fertility, disappears and more and more land is being cropped. In 1993 FAO estimated that every year for the last few years, 80,000 ha forestland and rangelands were cleared and used agriculture.

Climate fluctuations are causing, inter alia, droughts and water erosion, with water bodies shrinking by close to 300,000 ha between 1974 and 1984. The Niger part of Lake Chad hardly exists. Waterways are silting up, and the elimination of the bourgeois (flush areas occupied by fodder species *Echinochloa stagnina*) has changed the habitats of the fish species and decreased the potential for fish production, with annual production figures dropping from 20,000 tonnes in the 1970s to 2,000 tonnes in the early 1990s.

Agriculture alone is not responsible for the heavy pressure being exercised on the forestlands. Forest productivity is low: 0.1 to 1.5 steres/ha, per year has to cover 97% of the households' energy requirements. In 1997 annual consumption of wood for energy was estimated at over two million tonnes (12% for urban populations).

Because of this situation, growing impoverishment is a major constraint to the country because the national economy relies essentially on the troubled rural sector.

## 1.2- NATIONAL POLICIES AND STRATEGIES

National policies and strategies related to environment and sustainable development fit in with the Millennium Development Goals, especially MDG no. 7, "Ensure environmental sustainability" and its goals, "integrate the principles of sustainable development into country policies", and "reverse loss of environmental resources". Niger's policies and strategies are based on the international commitments the country accepted by ratifying the main international conventions on the environment.

The strategic goals are to:

- contribute, at the national level, to improving the capacity to foresee and manage environmental challenges;
- make environmental issues part of national priorities by leaving room for the environmental dimension in all development projects, programmes and policies;
- strengthen the national institutional system by improving the coordination of interventions, monitoring and evaluation, convention implementation, stakeholder capacity building, and mobilisation of resources to support the implementation of environmental programmes and projects.

To cope with major challenges, thus, in 1996 Niger developed a strategic framework to coordinate national policies and strategies for environmental management and NRM, called the CNEDD (Conseil National de l'Environnement pour un Développement Durable), thanks to which considerable progress has been made in implementing

political reforms and in formulating and adopting reference documents such as the national environmental plan for sustainable development (April 2000) and the action plan and strategy on bio-diversity (May 2000).

All these sectoral policies and strategies have been considered in the Poverty Reduction Strategy Papers (PRSP) adopted in 2002.

### **I.3- ORIGIN AND PROCESS OF NAP/CD-NRM FORMULATION**

The process used in drawing up NAP/CD-NRM was based on a participatory approach open to parties at all levels, especially the local populations and the civil society, who are interested in the problem of desertification and natural resources management. The process involved the organisation of CCD information and awareness-building campaigns for local populations, regional and sub-regional diagnostics of the environmental problem, and the creation of a consultation platform (via a new technical commission on NAP/CD-NRM). To complete the process, regional workshops and a national document validation workshop were held.

This approach made it possible to construct a strategy based on national capabilities, sized to the country's situation, and at the same time incorporate CCD provisions and achievements.

## **II- OBJECTIVES OF THE NAP/CD-NRM**

Once it had recognised that the main challenge was the sustainability of the productive assets (soil, water, vegetation), the NAP/CD-NRM set out to completely overhaul the management strategies applied to these assets and reconstruct relations between man and his immediate environment. The aims are the same as the ones in Article 10 of the U.N. Convention to Combat desertification.

The basic aim is to "identify the factors contributing to desertification and practical measures necessary to combat desertification and mitigate the effects of drought", and to create enabling conditions for the improvement of food security, the resolution of the domestic energy crisis, local economic development, sustainable management of natural resources, and the transfer of responsibility for NRM to the local populations.

To fulfil these overall goals, the NAP/CD-NRM set the following specific goals:

- analyse and monitor factors that contribute to drought and desertification;
- promote sustainable management of natural resources in the village areas;
- improve production and living conditions in rural communities through the adoption of more appropriate technical itineraries;
- secure adequate funding for activities described in the various sub-programmes.

## **III- MONITORING-EVALUATION OF NATIONAL ACTION PROGRAMMES ON DESERTIFICATION CONTROL AND NATURAL RESOURCES MANAGEMENT**

The NAP-Niger monitoring-evaluation system implementation process was started in 2000. Its aim was to monitor the impact of actions carried out as part of the NAP, on the basis of the past experiences of NRM projects and other institutions working on desertification control.

This process was established with UNDP and Italian development cooperation funding. It received technical support from various other partners, including OSS and CILSS.

### **III.1- THE OBJECTIVES OF NAP MONITORING-EVALUATION**

The ultimate goal of the NAP monitoring-evaluation system is to establish a decision-support tool that can provide guidance for coordinating and orientating the implementation of policies, strategies as well as national projects and programmes related to desertification control.

The objective of the monitoring-evaluation mechanism is described in the NAP document on progress achieved in desertification control and NRM. This document is to be presented to the various actors (local population, decision-makers) and the international community via the CCD Executive Secretary. Information generated by this mechanism can be used for multi-party performance evaluation of the programme implementation strategy and for support in joint decision-making.

The mechanism was installed to achieve the specific objectives defined in Article 19 of the CCD.

- monitor and evaluate the desertification process and its evolution;
- ensure monitoring of the NAP-Niger implementation process;
- evaluate the impact of the NAP on the combat against desertification.

### **III.2- THE APPROACH TO NAP MONITORING-EVALUATION IN NIGER**

The will to use the participatory approach was clearly displayed from the beginning of the NAP monitoring-evaluation process. One of the main ways to get the objectives

adopted and, thereupon, fulfilled was to make sure that the process included everyone concerned with NAP implementation, namely, development partners, technical services, NGOs, projects and programmes, ministries, research and development institutions, etc.

This explains why the NAP monitoring-evaluation approach was built to optimise the experiences of projects and programmes working on desertification control and NRM.

This approach was expected to ensure that from the beginning, good use would be made of all the experience acquired in designing and implementing the mechanism, and in defining the right methodological procedures, including choice of tools, the establishment of the information dissemination system, data collection and processing, and capitalisation of results.

The system mainly source and optimises data from existing national information systems. This applies to both primary data producers and to institutions involved in capitalising information on the environment and sustainable development.

The monitoring-evaluation system relies essentially on the sub-national and national levels.

This stratification was designed in response to the observed need for closer attention to sub-national and local diversity in information processing and capitalisation, and should make it possible, considering the great bio-physical and socio-economic disparities, to avoid region-specific problems when defining monitoring indicators. This approach also stems from the need to facilitate uptake at all levels by equipping the regions to handle the process implementation on the basis of identified problems.

### **III.3- METHODOLOGICAL APPROACH**

#### *III.3.1- Definition of the indicators grid*

Considering the NAP monitoring-evaluation objectives and the need to ensure better uptake by the persons potentially in charge of monitoring-evaluation, the favoured approach is now based on the identification of indicators being monitored in national programmes and projects devoted to desertification control and NRM in order to build up a minimum indicators kit that can be used as a lever for installing a monitoring-evaluation system.

The minimum impact indicators kit was defined at a workshop for representatives of some 20 development projects held in 2003.

The workshop drew up a list of 16 indicators that have been used as the basis for discussions with various stakeholders in the process.

Following some very interesting recommendations, special studies were started to explore aspects of the system more thoroughly and thus make it operational.

The first recommendations focused on an inventory of information producers and the identification of monitored indicators. The second focused more on the preparation of a methodology manual, the revision of the minimum kit, and the proposal for procedures ranging from environmental information collection, to processing and dissemination.

These recommendations and thoughts were useful in optimising contributions from other parties in the data production and analysis chain, namely, sub-national and local governmental services and organisations representing the civil society, thus allowing for a spatial overview of the national situation.

Indicators of other environmental information systems were also viewed as important data to be borne in mind. These investigations made it possible to revise the minimum kit and draw up a list of 22 indicators classified according to the logical frame "Pressure, State, Response, Impact".

### THE INDICATOR GRID

CCD Objective	Domains concerned	Indicators	Categories P.S.R.I	
Natural resources management	Biophysical aspects	Specific diversity of wildlife	S	
		Specific diversity of flora	S	
		Percentage of land recovered in relation to objectives	R	
		Evolution of herbaceous biomass	S	
		Soil utilisation rates, according to utilisation	P	
Poverty eradication	Economic aspects	Growth rate of agricultural production	I	
		Growth rate of pastoral production	I	
		Growth rate of sylvo-cultural production	I	
		Growth rate of agricultural GDP	I	
		Growth rate of irrigated areas	R	
	Institutional and organisational aspects	Number of farmers' organisations involved in NRM	I	
		Percentage of high-level posts occupied by women within rural organisations	S	
	Social aspects	Percentage of rural women with access to credit	S	
		Percentage of populations with access to potable water	R	
		Health cover rate	S	
		Gross schooling rate in primary school	S	
		Adult literacy rate	S	
		Land tenure conflicts resolution rate	R	
	Institutional aspects	Number of declared land tenure conflicts	S	
		Share of state investment budget allocated to NRM	R	
		Share of investment budget of territorial communities allocated to NRM	R	
			Share of partners' development aid allocated to NRM	R



### *III.3.2- Approach to the implementation of the national mechanism*

The approach based on the establishment of a national mechanism recognises two major requirements: 1) the existence of a body for running the monitoring-evaluation systems, and 2) the existence of a network of partners to produce data.

This structure for the mechanism has been adopted both at the national and the sub-national levels and has the advantage of facilitating system decentralisation and thus enhancing process assimilation at the regional level.

#### *III.3.2.1- Sub-national mechanisms*

They are the main elements of the information transmission mechanisms. Their role is to collect data, ensure its coherence, and transmit it to the national level.

Specific studies have been carried out on the preparation of the conceptual outline for the sub-national mechanisms in order to:

- define and analyse the roles of the sub-national and local actors in operationalising the NAP impact monitoring facility;
- identify the information producers at the local and sub-national level;
- define a mechanism capable of incorporating them in the NAP impact monitoring facility.

These studies have made it possible to identify the various categories of sub-national actors and to define their role by bringing out each party's contribution to operationalising the NAP/CD-NRP impact monitoring facility.

This means that the roles of the various categories of actors in information collection, processing, analysis, validation and dissemination have been defined.

The main identified information producers are the Directions régionales (regional departments) for administrative data, projects and programmes working in the field, and NGOs.

#### *III.3.2.2-Structuring sub-national facilities*

##### *- Political focal points*

This role devolves to the Conseils Régionaux de l'Environnement pour un Développement Durables (CREDD), i.e. regional councils that include all categories of actors involved in desertification control activities (technical services, administrative and traditional authorities, project management, civil society). They represent the orientation bodies at the sub-national level, and, as such, provide coordination for all interventions on environmental issues. The political focal points are responsible for validating monitoring-evaluation data at the regional level.

### - Technical focal points

They provide technical coordination for the mechanism at the sub-national level, on the one hand, and, on the other, the centralisation, coherency and processing of data from the primary producers. This role devolves to the Directions techniques régionales (regional technical departments), under the supervision of the Directions du développement communautaires (community development departments).

*The role of these departments is summarised in the following table.*

Directions régionales (regional depts.)	Indicators validated in May 2003	Role	Remarks
DRE	- Wildlife population - Biodiversity of flora - Sylvicultural development rate	- Collection of basic data - Data collection - Collection and initial processing	- Specific reports - Report
DRDA	- Increase rate for agricultural output - Number of farmers' organisations involved in NRM - Percentage of self-managed rural organisations - Percentage of high-level positions occupied by women	- Collection, checking codification - Collection - Collection - Analysis	- The data are processed in Niamey. - Data at present are collected in certain places such as the cereal banks. - The capacity exists and the methods are well known. - Data not available
DRDC	- Coverage rate for potable water - Literacy rate - Gross schooling rate - Health coverage rate	- Processing - Processing - Processing - Processing	- Collection by Direction Régionales de l'Hydraulique - Collection by the departments concerned (Direction régionale de la Santé, Direction régionale de l'Enseignement de Base et de l'Alphabétisation)
DRRA	- Livestock production increase rate	- Collection	- Processing done at central level

### The data producers

This category is composed of projects, programmes and NGOs that collect data in the field. All these parties have carried out investigations related to the identification of reference situations, and methods to collect, compute, process and analyse NAP/CD-NRM indicators.

At the sub-national level, the mechanism is organised around the following five axes:

- collection of primary information by technical services, projects and NGOs;
- organisation of collection of data supplied by the primary producers, and data quality verification;
- centralisation, quality control and registration of information, as well as processing, storage and transmission to the political focal point (CREDD). This task is carried out by the regional technical focal point;

- data validation by the whole network of partners. This task is coordinated by the political focal point;
- information dissemination at the local level and transmission to the central level via CREDD.

### *III.3.3- The facility at the central level*

The central facility has been structured to accommodate three main levels:

#### *- Political focal point*

The political focal point is responsible for the political validation of monitoring-evaluation results and their capitalisation by the partners at the national and international levels. This role devolves to the Executive Secretary of the Conseil National de l'Environnement pour un Développement Durable (CNEDD).

#### *Technical validation:*

This is a multi-body level responsible for the data centralisation, processing, and technical analysis/validation:

- **the hard core:** here is where a certain number of technical partners come together to work with the CNEDD monitoring-evaluation unit to ensure the certification of the monitoring-evaluation reports they receive and then to submit the reports for approval to the ES/CNEDD.
- **the scientific committee:** this is a technical committee responsible for designing tools, centralising data from the sub-national level, analysing and processing the information, computing the indicators and drawing up the national report. It is composed of representatives of various national institutions, resource people led by the Direction Générale de l'Evaluation des Projets and the ROSELT<sup>1</sup>.

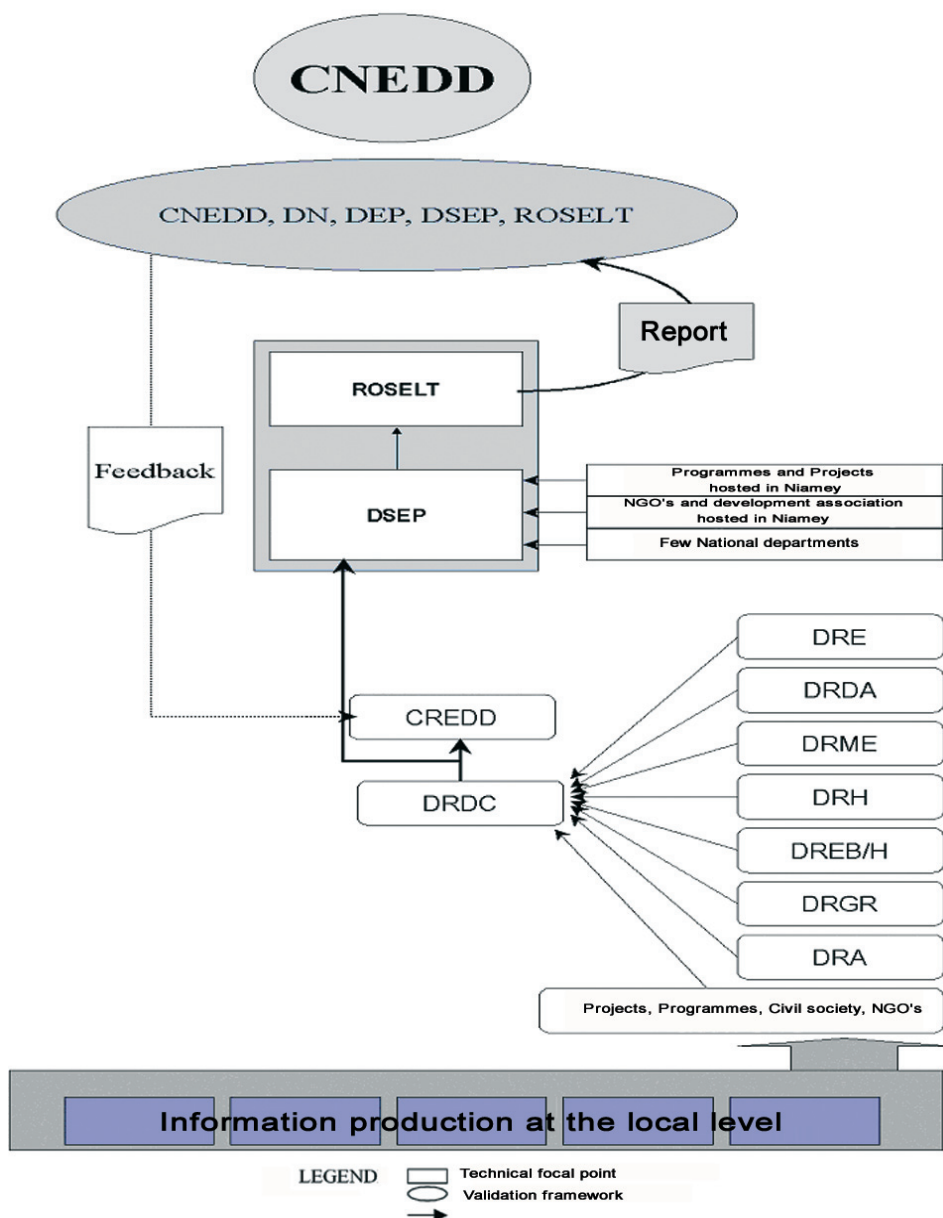
#### *- Data producers:*

This category is responsible for national programmes / projects and specialised institutions that produce specific indicators that are not covered by project and programme data.

The following diagram presents the facility as described above.

<sup>1</sup>- Long-term ecological observatories monitoring network.

Figure 8: diagram for global facility



## IV- THE INFORMATION DISSEMINATION SYSTEM

The information dissemination system was borne in mind and defined when the national facility was being designed. The system, as it now exists, can be used to:

- guarantee data reliability thanks to its control capacity and its consultation, validation and dissemination framework that allows for extensive information sharing;
- strengthen stakeholder support through greater participation at all levels of the process.

## V- MONITORING-EVALUATION TOOLS

### V.1 - PRESENTATION OF THE ANALYTICAL MODEL

The model to analyse data collected on indicators in the NAP/CD-NRM impact monitoring facility was made by a team of experts. The goal is to provide tools for processing and analysing data required by technical staff responsible for monitoring the indicators and to provide decision-makers with useful information for taking decisions concerning **political orientations**.

#### *V.1.1- Components of the tool*

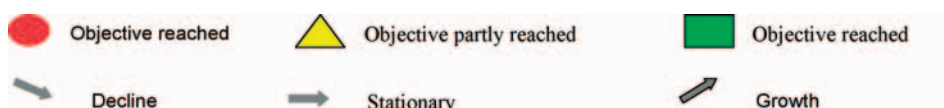
It was designed as a three-part grid that give a complete picture of indicators as they change

##### *a) Descriptive part*

The purpose of the descriptive part is to provide targeted, highly technical information on the indicator. It is to be used by people in charge of measuring and interpreting the indicators.

### Typical example of the descriptive part

Name of the indicator (description)	Growth rate of agricultural output
Definition/Formula for calculation	Volume of agricultural output. With regard to data availability, in this part attention is only given to the main crops, i.e. millet, sorghum, cowpea (niébé), groundnut, rice and maize.
Link with objectives of NAP/CD-NRM	This indicator is a measurement of the main source of economic growth in the rural areas.
Type of indicators	Impact indicator
Unit of measurement	Tonne
Source of data	Ministère du Développement Agricole (MDA)
Geographical cover (national, regional, etc.)	National
Reference date	1999, date of preparation of NAP/CD-NRM
Collection method	Compilation of results of agricultural survey. Breakdown per region and crop
Collection schedule	Annually
Data required (data used to calculate the indicator)	
Data available (series, years, coverage)	
Cost	
Accessibility (managerial method, storage, etc.)	Activities report by regional agricultural departments, DB of the MDA
Problem/Reliability	
Users	CNEDD, partners
Link with other indicators	
Supplementary data	
Capacity to have an influence	



### b) The dashboard

The dashboard includes verification tools for the decision-makers and provides a schematic, encapsulated overview of information derived from the indicators. As such, it is an important component for both the decision-makers, and the resident population that can use it as a “barometer of political performance”.

The purpose of such a tool is to represent rather complex information in a **way that is more understandable to the public at large.**

### Typical example of a dashboard

Sub-objectives/Wording of expected output	Indicators	Target	Tendencies	Evaluation
<ul style="list-style-type: none"> <li>- Productive capital restored</li> <li>- Agro-sylvo-pastoral yields increased</li> <li>- Production systems improved</li> </ul>	Growth rate of agricultural output	-		
	Growth rate of pastoral production	-		This column assesses the results of the analysis of tendencies. Symbols are used to ensure easy readability. The symbols are explained in the caption <u>under the dashboard</u>
Surface waters used for agro-sylvo-pastoral production	Increase (percentage) in irrigated areas	-		

#### c) Themes

This section provides information on each indicator individually, and interprets their specific spatio-temporal evolution and tendencies. It also describes corrective measures that should be considered to reach the set goal.

<p><b>Specific objective: Restore the productive capital to improve agro-sylvo-pastoral outputs</b></p>	<div data-bbox="570 244 1047 621"> <p><b>Evolution of the areas covered by the main crops</b></p> <table border="1"> <thead> <tr> <th>Year</th> <th>Total area (ha)</th> </tr> </thead> <tbody> <tr> <td>1999</td> <td>11,510,000</td> </tr> <tr> <td>2000</td> <td>11,540,000</td> </tr> <tr> <td>2001</td> <td>11,580,000</td> </tr> <tr> <td>2002</td> <td>12,020,000</td> </tr> </tbody> </table> </div> <div data-bbox="570 638 1047 1001"> <p><b>variation in yield of the main crops</b></p> <table border="1"> <thead> <tr> <th>Year</th> <th>Total production (tonne)</th> </tr> </thead> <tbody> <tr> <td>1999</td> <td>3,350,000</td> </tr> <tr> <td>2000</td> <td>2,450,000</td> </tr> <tr> <td>2001</td> <td>3,650,000</td> </tr> <tr> <td>2002</td> <td>4,150,000</td> </tr> </tbody> </table> </div>	Year	Total area (ha)	1999	11,510,000	2000	11,540,000	2001	11,580,000	2002	12,020,000	Year	Total production (tonne)	1999	3,350,000	2000	2,450,000	2001	3,650,000	2002	4,150,000
Year		Total area (ha)																			
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2000	2,450,000																				
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2002	4,150,000																				
<p>Impact indicator Growth rate of agricultural outputs</p>																					
<p>Interpretation Between 1999 and 2002, for the country as a whole the volume of agricultural outputs grew somewhat, except in 1999-2000 when there was a deficit of 883,897 tonnes.</p> <p>The two graphs illustrate the results of changes in the parameters that were measured to evaluate the indicator</p>																					
<p>Recommendation This column relates to suggestions and recommendations for improving goal achievement</p>																					



## CONCLUSION

Despite significant progress in the conceptualisation and installation of the mechanism, there are still several obstacles to be overcome to make it operational, e.g.

- the need to develop a capacity-building strategy at several levels in order to guarantee system operationability;
- coordination: organisational and institutional aspects (i.e. assignments, attributions, compatibility with existing bodies and structures) for NAP monitoring-evaluation are worth explaining. The operational capacity should be continually monitored so that remedial measures can be introduced as needed;
- the strategic dimension of monitoring-evaluation has not yet been sufficiently assimilated at the implementation end. Operational consultation opportunities should be made available and strategies to improve information sharing should be worked out to create greater awareness among the various institutional partners;
- the establishment of a monitoring-evaluation system is a very complex, difficult, costly, long-term process, and data collection requires substantial resources. The stakeholders should adopt the measures needed to mobilise the necessary resources. Experiences of similar systems should be analysed in order to benefit from their conceptual and organisational knowledge.

## CHAPTER V

# LINK BETWEEN THE NAP/ CD MONITORING-EVALUATION MECHANISM AND THE DEVELOPMENT PROCESS IN TUNISIA

Mohamed Sahbi HAJJEJ  
Nabil BEN KHATRA



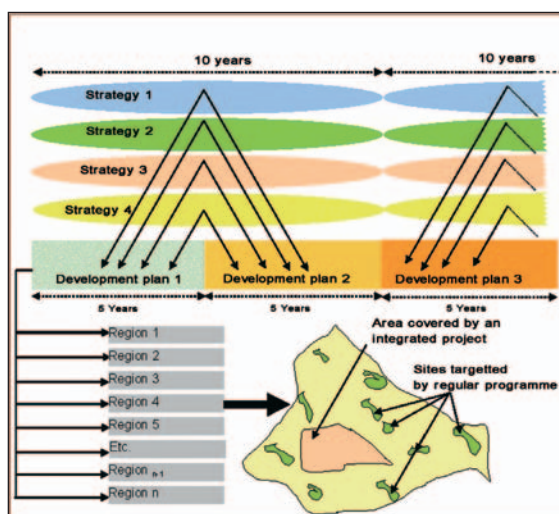
# I- FRAMEWORK AND CONTEXT: DEVELOPMENT AND DESERTIFICATION CONTROL IN TUNISIA

## I.1- SPECIFIC CHARACTERISTICS OF RURAL DEVELOPMENT IN TUNISIA

The Tunisian experience with rural development was started over three decades ago, and can be characterised as follows:

- **The approach:** the rural development system has a multidimensional basis. (Figure 9):
- **Planning:**
  - formulation of decadal sectoral strategies (DSS). The demands of food security, protection of natural resources, and poverty alleviation have made it essential to adopt a sectoral approach. These strategies are giving increasing preference to an integrated, participatory approach;
  - formulation of quinquennial development plans (QDP) that match national and sub-national objectives stemming, respectively, from the national planning process and the sub-national and local planning processes;
  - formulation of regular quinquennial sectoral programmes at the sub-national level, broken down into annual development programmes;
  - formulation of integrated rural or agricultural development projects (IRDP, IADP) for the sub-national or local level.

*Figure 9 - development planning and implementation system*



Programmes and projects are compiled into Local Development Actions (LDA), which are defined by planners to respond to ecological, socio-economic and/or institutional problems and intended to produce positive effects on the state of natural resources and on the local population's income and quality of life.

- **Implementation:** programmes and projects are implemented by the business company (outsourcing) or by a state authority (régie), directly by the public institution concerned, under the responsibility of public sub-national institutions, both from the operational angle and the technical angle;
- **evaluation:**
  - the national sectoral institutions have a more remote monitoring duty, usually carried out annual and centred essentially on progress made in reaching the quantitative objectives of the decadal sectoral strategies and the quinquennial development plans;
  - the national and sub-national institutions carry out two evaluations: at mid-term and at the end of the quinquennial development plan;
  - evaluations are also made of integrated rural development projects and integrated agricultural development projects. They are usually centred on the performance of tangible units.

There seems to be an increasing need for impact evaluations, especially for organisations that fund the development projects and programmes.

- **Quantitative level:** rural development work has reached a strong critical mass, both with regard to investments (over 3,000 million dinars over a period of 5 years) and spatial distribution (throughout all the regions in the country).
- **Achievements:** the system has developed a good capacity for tangible work, both in planning and implementation, by private business companies as well as public institutions.

Technical and operational effectiveness and ecological and socio-economic efficiency have not been evaluated, because of lack of a monitoring-evaluation capacity.

## I. 2- NAP/CD: PLACE AND ROLE

The NAP/CD should be designed to meet Tunisia's commitments to the CCD. It must also meet and be coherent with the country's socio-economic development requirements.

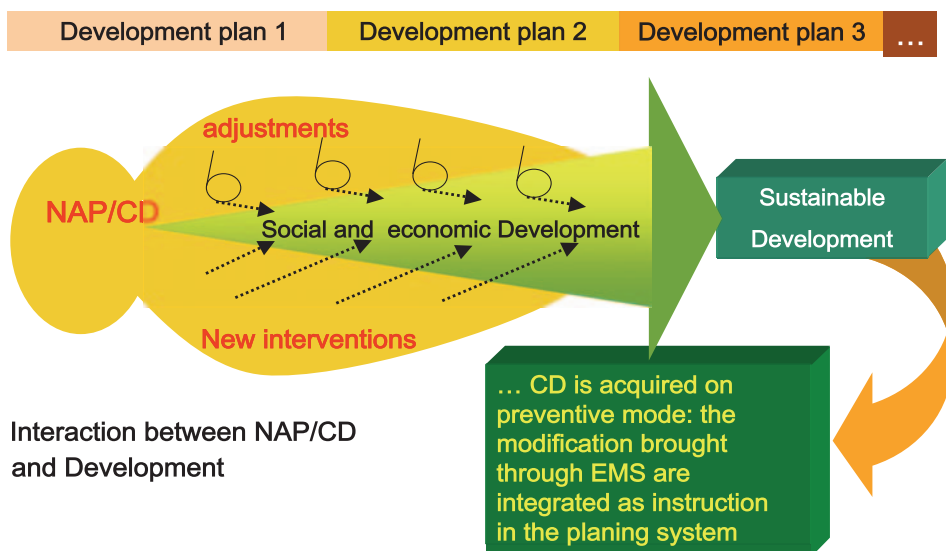
Consultations, specially organised by the National Coordinating Body (NCB) for the national partners and the development cooperation partners, made it possible to define the interaction between the NAP/CD and the development strategies, programmes and projects (Stratégies, Programmes et Projets de Développement, SPPD) as follows:

- the NAP/CD is a "reference framework in a planning process, in a sustainable development context";
- the NAP/CD is a "coordination and orientation framework in monitoring and evaluating the combat against desertification".

In other terms, the NAP/CD should accompany and supervise the SPPD to help them develop and move closer to the ecological and socio-economic sustainability criteria seamlessly.

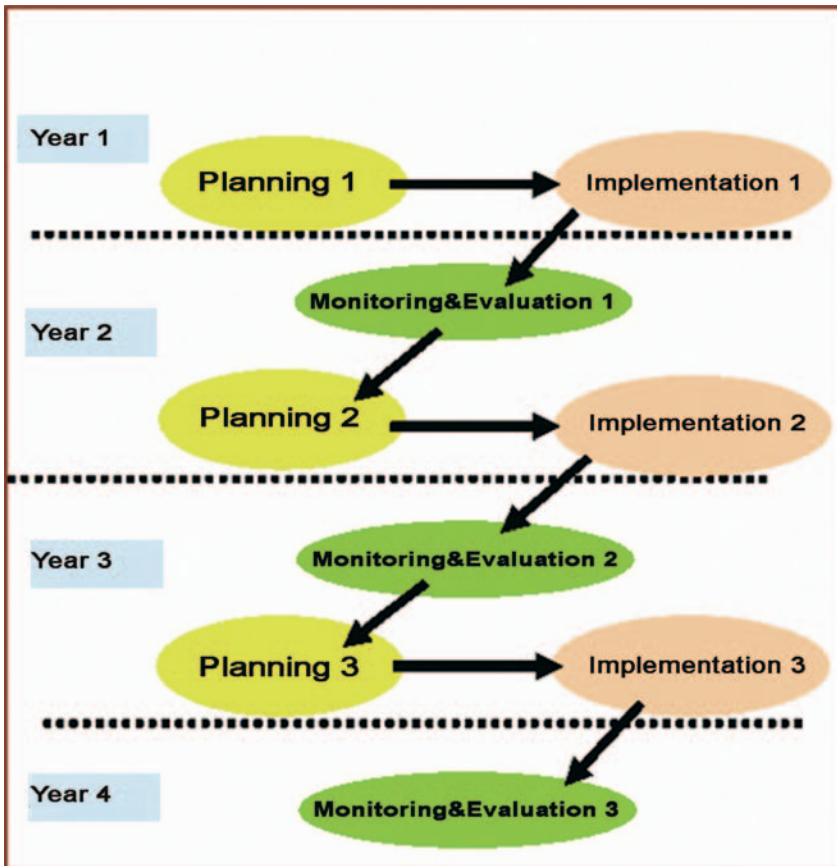
This support and supervision means that the concepts and approaches introduced or advocated by the NAP/CD should "influence" the SPPD, make them more efficient and improve their potential for sustainability (Figure 10). This "influence" is materialised through "additions and "corrections" to the approaches, the technical contents and choices, and the implementation methods.

*Figure 10 - NAP/CD and Development Plan interaction*



The additions and corrections must be derived from a monitoring-evaluation mechanism that fits in between development planning and actions, and operates through successive triangular iterations so that any changes made (additions or corrections) can be deduced from field truths and not from technical and/or socio-economic ideals (Figure 11).

*Figure 11 - connection between monitoring-evaluation and development*



In the long run, experience acquired with this iteration process makes it possible to progress from an approach based on a priori improvement to an approach based on a

priori precaution thanks to the inclusion, as a preventive measure, of eligibility criteria for sustainable development in the planning system and the implementation methods.

Because of this situation, the Comité national de lutte contre la désertification felt that the establishment of an operational monitoring-evaluation facility, directly connected to the development process as a link between the planning and the implementation phase, was one of the most tangible, and highest priority phases in NAP/CD implementation. With the assistance of OSS and the European Commission, this experience was carried out as part of the Tunisian national project's component: "Implementation of NAP/CD monitoring-evaluation systems in Mediterranean North African countries".

## II- AN OPERATIONAL MONITORING-EVALUATION FACILITY: APPROACH AND CONCEPTS

### II.1- AN IMPACT MONITORING-EVALUATION FACILITY

The SPPD are essentially composed of a series of LDAs..

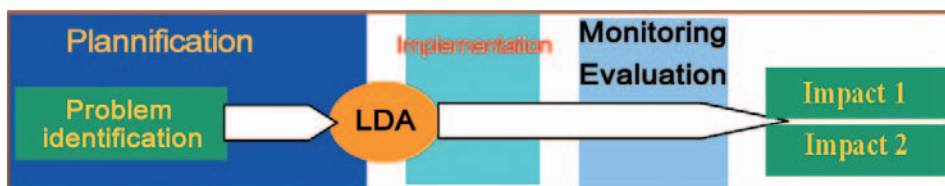
An LDA can be physical, biological, socio-economic or institutional. For the SPPD altogether, more than 200 have been listed, e.g.

- mechanical treatments for catchment basins: construction of low earthen embankments (physical type LDA);
- biological consolidation of constructions to control wind erosion: biological dune fixation (biological type C);
- creation of producer groups (socio-economic type LDA);
- introduction of local credit mechanism (institutional type LDA).

This mass of LDAs reflect the efforts deployed by the countries to further development and desertification control.

An LDA has to be selected by a planner and then implemented by a developer, in response to an identified problem and in anticipation of a sought/desired impact, according to the following diagram:





As of that point, the LDA stands out as the basic unit in planning, implementing and evaluating development and desertification control efforts.

Just like the LDA, the impact produced can be physical, biological, socio-economic or institutional. In the context of desertification control, the desired impact is, 'an effective contribution to improving the capacity of the LDA to combat desertification and promote sustainable development'.

A review of the projects that have been implemented during a planning cycle shows that it is practically impossible to evaluate the global impact of a project or programme or strategy. Impact can only be seen as a whole, the sum or juxtaposition of elementary impacts that have been produced by each of the component LDAs.

## II.2- WHAT IMPACT?

The notion of impact is very complex, especially in the arid zones. It is worth qualifying in terms of effectiveness and sustainability concepts.

### Contextual or temporary Impact

In order to be considered, an impact has to be sustainable or structural, in other words irreversible, and recognised as such. In the Mediterranean climate, development activities either benefit or suffer from rainfall levels and patterns: an exceptionally rainy or an exceptionally dry year can amplify or dissimulate the impact attributed to the LDA.

When observing impacts, it is difficult to distinguish between the part of the impact that is due to a short-term situation and the part that is structural. To make our evaluation more reliable, we included five annual "repetitions". An impact is considered to be structural or definitive if it is confirmed, after these successive evaluations. It is then considered to be stable enough and very probably sustainable.

### Direct and indirect Impact

The planner usually aims at one or more direct impacts that are related to the identified problem. In some cases, the LDA has positive secondary effects/impacts. The best known example is the socio-professional organisation of communities, for whom the targeted direct impact is "collection, rational management of common natural resources" while the indirect impact or benefit could be "the creation of local capacity for managing community problems". Indirect impacts are usually not calculated in the monitoring-evaluation facility.

- they are difficult to quantify;
- they are often intermediary impacts that contribute to the formation of the direct impact.

### Local or distant Impact, immediate or delayed Impact

Nearly all LDAs have a local impact, in other words, impact the place the action was carried out. Some also have an impact that occurs far from this location. This especially applies to LDAs on "water conservation and water table recharge" and also to water and soil conservation constructions in the mountains and foothills when they have both a local impact and a distant impact, i.e. in the plains.

Other LDAs have both an instant or immediate or rapid impact and a delayed impact. This applies, for instance to the LDA on "road creation" that, in many landlocked areas would have the following effects:

- short-term (immediate impact): better circulation of people and goods, and
- long-term (delayed impact), encouragement for "exporting" existing or new products from the area.

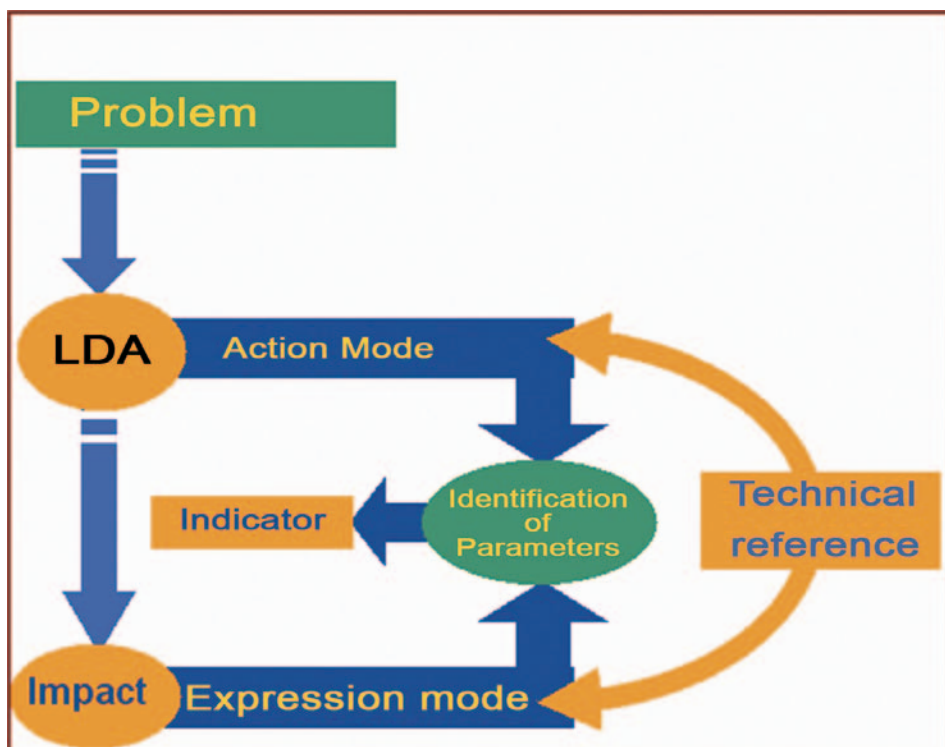
Delayed impacts, like indirect impacts, are difficult to quantify, at least as concerns the parts that can be attributed to the LDAs.

## II.3- IMPACT EVALUATION: ASSESSMENT OR QUANTIFICATION?

The direct quantification of an impact requires the introduction of costly mechanisms, run by qualified personnel. This is difficult to plan for in a regular budget.

An "empirical" assessment would be marred by errors or be subjective, or even arbitrary.

Figure 12 - LDA, Impact and indicator relations



A compromise can and must be found between these two possibilities. The choice should be in favour as an estimation that is as objective and precise as possible, thanks to detailed parametering based on very thorough knowledge of the factors that govern the LDA action mode, and the impact expression mode. In Tunisia, this knowledge is available and is expressed through scientific results obtained from studies and research on the problem of desertification carried out during the last four decades. To be useable, these results have to be converted into a technical frame of reference. A well-characterised impact, based on parameters of descriptors derived from such technical references (Figure 12), is believed to provide a sufficiently reliable, statistically exploitable estimate of the effects or inputs of the LDA. This provides the basis for defining or rather identifying the most adequate indicators, i.e. indicators that best reflect the desired impact.

## II.4- WHAT INDICATORS?

### Definition/Identification

The concepts described above show that an impact indicator is something universal, with a regional or international scope. It is specific to each LDA or to a group of related LDAs, and is defined as being any variable that is liable to express the structural impact of an LDA.

Ideally, indicators should be defined as of the planning stage. If not:

- the logical pathway that the planners would probably have followed from problem approach to expected results, has to be reconstructed;
  - the most pertinent variables from among the variables that could express the result will be selected, in other words;
- variables for which technical frames of reference needed for working out parameters that are accessible to technical field officers;
- variables that fit in best with CCD requirements.

An LDA accepts one or more impacts, and an equal number of indicators, for instance.

For 33 LDAs, 58 indicators were identified, in other words, an average of two indicators per LDA, with a variation of 1 to 3.

### **Table 1: identification of indicators**

#### **LAD: Watershed Protection by benches**

According to the planner, LDA respond to the problem of water erosion and aims at not only minimising the erosion but also improves water storage of the products of these erosion phenomena (CES).

The expected impact is water and soil conservation, the water table recharge the dam protection and local water reserve and the yield increase by storage run off water.

If the impact aimed is less erosion, the planner would have thought of others methods of LDA such us deep tillage.

If the impact aimed at zero erosion, the planner would have thought of more efficient techniques such us embankment which combines collection works and levelling of cultivated part.

The protection of watershed by simple bench is a case in LDA which has little or no chance to be eligible to CD. The LDA described above to target less or zero erosion are respectively and addition or correction to bring through consulting of actors.

Within the actual conditions, the impact of LDA could be assessed through the following indicators: (see table 2).

## Parametering or characterisation?

What should be the profile of an indicator?

Since an indicator is a tool that is supposed to be produced by field technicians, and is intended to be of use to decision-makers at the local, sub-national and national levels, it should have the following profile:

- with regard to characterisation and parametering, it should be doable under the current field conditions, and should not require cumbersome, costly facilities or complex, time-consuming manipulations;
- with regard to value: it should be readily useable by the decision-makers and, hence, should be composed of precise, concise, statistically exploitable, easily accessible information.

### **Table 2: identification and description of indicators**

**LAD:** Protection of Watershed benches

#### ***Indicator 1: hydraulic efficiency.***

Three parameters that describe efficiency are:

##### **Parameters 1: water retention capacity**

It is function of the height of the spill over in relation to the bench base. With few exception we don't aim at total retention but for a quantity that will be sufficient at three water efficiency levels of the work:

- "weak": the light of the spill over is less than 20 cm? It account for a construction error or the important solid accumulation resulting from strong erosion.
- "medium": the height of the spill over ranges between 20 and 50 cm;
- "good": the height of the spill over is more than 50 cm. The values 20 and 50 cm are given as illustration. They could be revised mainly up The best way to assess these "limits" would be either by "calculation", in reference to the quantities that we wish to retain, or by survey of actual situation.

##### **Parameters 2: water distribution along the benches**

The distribution reflects the "compliance" or "non compliance" of the high curves in the bench construction. This is an interaction with the previous parameters. We can adopt 3 water efficiency classes of the work.

- "weak": water is badly distributed along the bench: the point without water retention are frequent intra-bench and from one bench to the other, this situation results from construction errors of the works;
- "good": water is regularly distributed along the bench: the point without water retention are few or none;
- "irresolute": in principle, the accumulation or non accumulation signs of the water are noticeable (visible), unless it has not risen after the construction works, they are often erased by the soil works.

The medium class is discarded: as soon as the water retention points are not scarce, the repetition could only be good.

An indicator can be evaluated according to its parameter(s). A parameter represents one of the modes of expression or dimensions of the indicator.

Parametering means:

- defining the parameter(s) that best reflect the indicator;
- defining, for each parameter, two to four value classes, e.g. "low", "medium", "good" (three classes), or else "missing", "rare", "normal", "frequent" (four classes), etc.;
- characterising each class of parameters on the basis of a technical set of references or the results of research or, failing this, field experience, and by using sufficiently precise descriptors to ensure that the significance remains unchanged, regardless of evaluator (Box 3).

Classes	Characterisation of parameters
Low	Wind veil rare or inexistent, important and generalised deflations, uprooted perennial vegetation: the landscape offers a destabilised soil. The exclosure did not have a wished impacts: the degradation was more advanced where the exclosure was not respected.
Weak	Wind veil limited to privileged areas: frequent but not generalised deflations, uprooted perennial vegetation in some zones. Existance of small "recent" sandy accumulations around the perennial vegetation: the effect of exclosure starts to appear.
Good	Almost generalised win veil, absence of deflations; perennial vegetation but not uprooted.

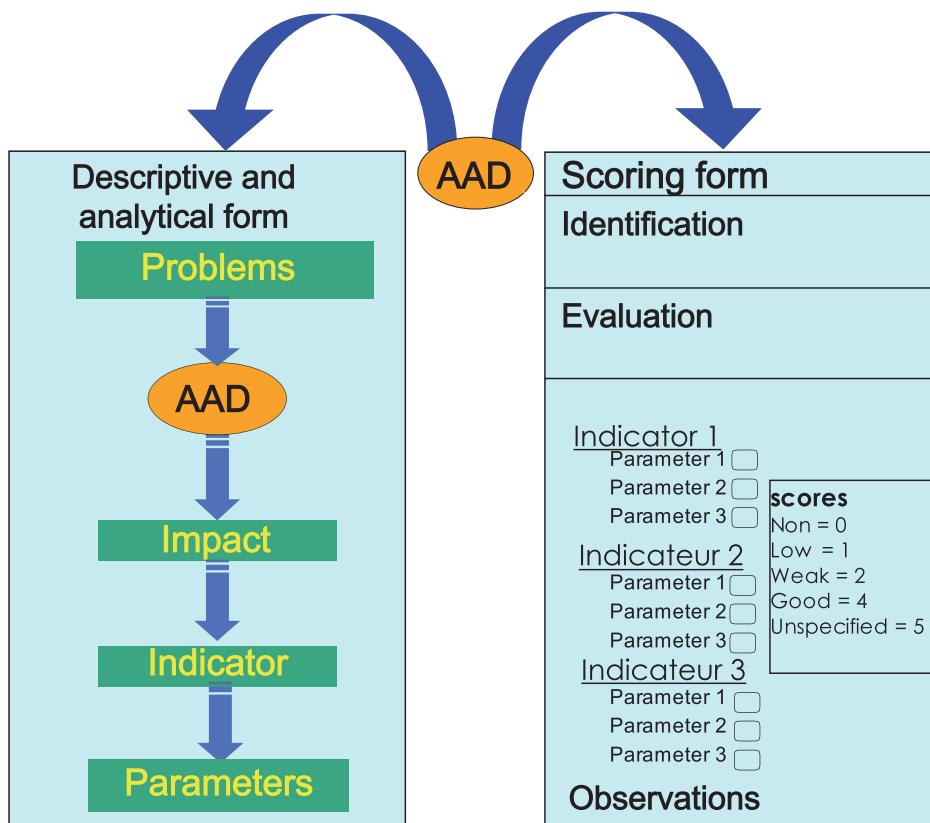
### Need for a catalogue of indicators

Although indicator identification has been designed to be flexible and open, a certain unity has to be respected at the country level, even at the regional level. This requires the following sequential approach:

- elaborate a catalogue of indicators that covers all LDAs listed under SPPD (development strategies, programmes and plans) using the methodology described above;
- undertake a preliminary validation of the catalogue, through a consultation workshop that involves all the partners concerned with monitoring-evaluation;
- test the feasibility in the field for each indicator through the appropriate sub-national and local institutions;

- carry out the final validation of the catalogue using the results of one campaign and through a consultation workshop for the aforementioned partners.

Figure 13 - example of a form in the indicators catalogue



It goes without saying that the catalogue may need to be updated periodically (every five years for instance): adding and removing indicators and parameters, incorporating new technical sets of references that can improve the accuracy of the evaluation, etc.

In the catalogue, each indicator is represented by two forms (Figure 13):

- a descriptive and analytical form;
- a scoring form ("formuleer").

The descriptive and analytical forms together provide guidance for identifying indicators.

## II.5- RESULTS AND PRODUCTS FROM THE MONITORING-EVALUATION FACILITY

Two types of products are made available to the decision-makers:

- a multi-criteria database,
- dashboards.

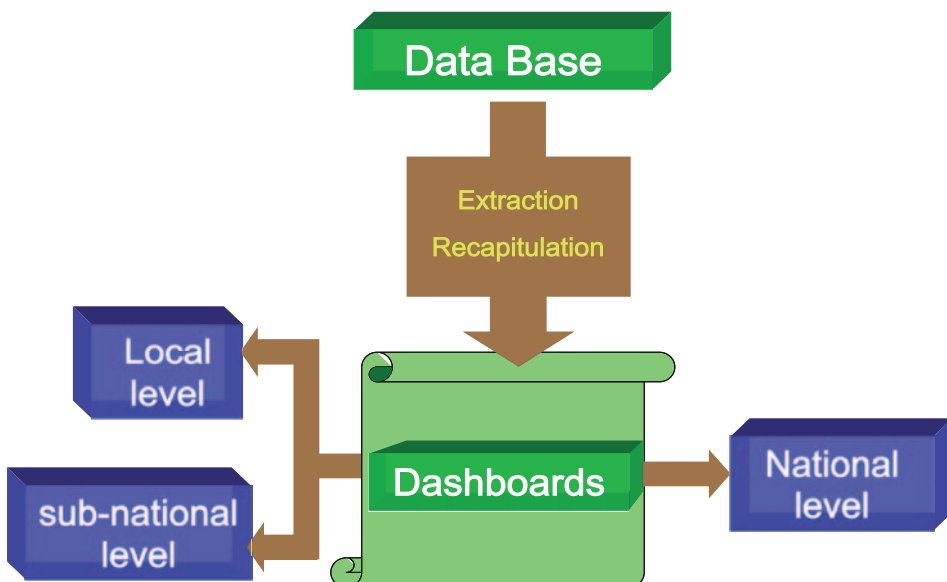
A database with remote access and querying

Data compiled on the efforts and their impacts are stored in a multi-criteria database, are accessible to the decision-makers and can be queried from a distance through an Intranet. Access must be strictly filtered, of course.

For certain users, these multi-criteria databases can provide the required information and data, as needs arise, and if the requests submitted are correctly worded.

For other users, the raw data contained in the databases will be drawn out according to standard formats. This applies especially to the dashboards.

*Figure 14 - dashboards: origin and destination*





## Dashboards

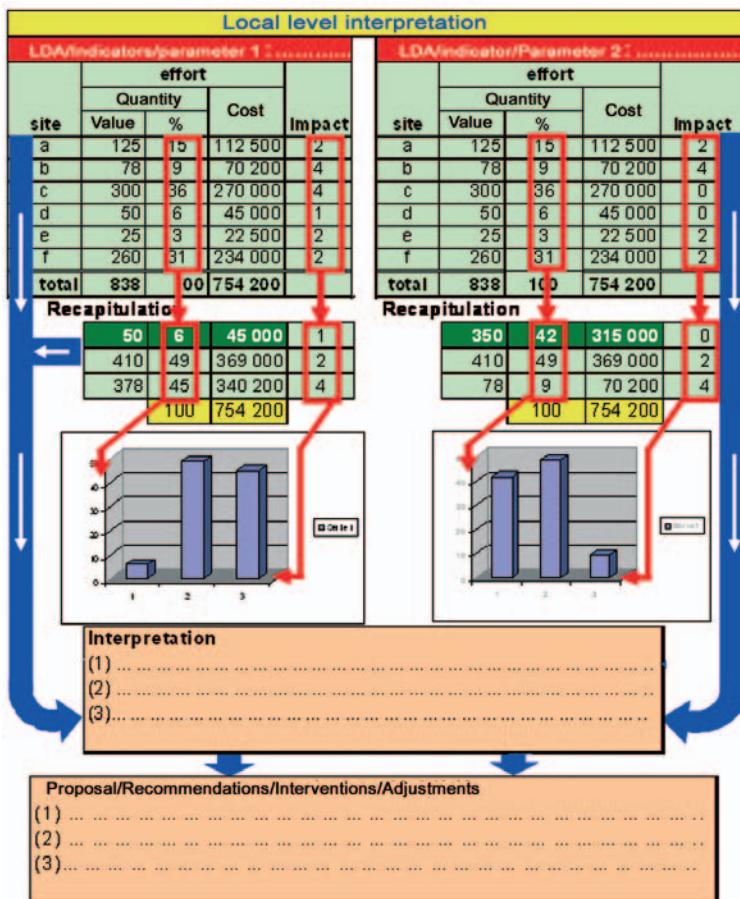
These are decision-support tools provided for in the NAP/CD. They are extracted from the database and can be adjusted to the needs of decision-makers at the national, sub-national and local levels (Figure 14). They were designed in simple formats with content that is easy to read. The evaluation results are presented there as detailed tables, summary tables and, eventually, as bar charts (Figure 15). They can be ...

- predefined or standard;
- open or request-driven.

There are two types of predefined dashboards:

- the ones for the sub-national or local levels: the detailed results are presented there by LDA and by site (where LDA is implemented);
- the ones for the national level: detailed results are only presented there by LDA.

Figure 15 - dashboard format and contents



On demand dashboards are produced by the requesting partner’s services via a connection to the database.

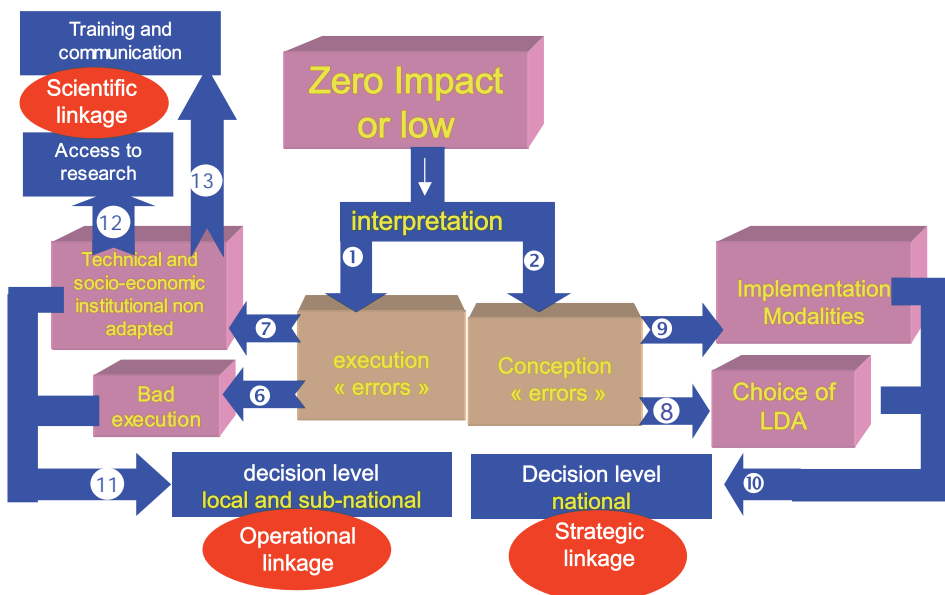
In all event, the dashboard highlights the following elements:

- efforts, expressed as physical realisations (number of hectares, linear meters, cubic meters, kilometres, etc.) and as cost (dinars), per site and per place of intervention; they are also expressed as percentages;
- impacts obtained for each LDA and at each intervention site;
- a recapitulation per impact class.

It is usually up to the decision-maker to interpret the impact results described in the dashboard and formulate the decisions. Thought can also be given to a joint mechanism: a consultation workshop to validate and interpret results and make proposals.

Results are interpreted in a standardised manner. The interpretation is directed or channelled to a utilitarian goal. It includes an “explanation” phase to identify factors that make the results what they are (Figure 16) and, wherever the impact is weak or poor, an additions and corrections identification phase to improve the impact.

Figure 16 - impact interpretation process



We can see that the monitoring-evaluation facility plays a role at three levels of decision-making:

- the national level, for decisions on the choice and modalities for LDA implementation;
- the sub-national level, for operational aspects and the implementation of the technical packages;
- the scientific level, for the improvement of the technical packages.

These three anchoring points seem important for functional purposes.

## II.6- INSTITUTIONAL ANCHORING

### Sub-national or operational anchoring points

This is the first level of decision-making and concerns two sub-national institutions:

- the Commissariats Régionaux au Développement Agricole (CRDA) at the Ministère de l'Agriculture et des Ressources hydrauliques (MARH) are the prime contractors, the technical, administrative and financial managers of all the projects and programmes in the rural areas, including projects funded through agreements with foreign development project partners and projects funded by the governorats;
- the Directions Régionales de l'Environnement (DRE) of the Ministère de l'Environnement et du Développement durable (MEDD) are responsible for coordinating and facilitating environmental policy at the sub-national level.

These institutions are in a good position to translate the monitoring-evaluation results (additions and corrections) into the annual work programmes.

### Strategic anchoring

This corresponds to the second level of decision-making and provides a response to the need to follow up on the strategic elements of the monitoring-evaluation results. In the Tunisian case, this decision-making authority devolves to two types of national institutions:

- vertically structured institutions responsible for sectoral strategies;
- horizontally structured institutions responsible for planning (both formulation and financing).

### Scientific anchoring

The monitoring-evaluation facility is naturally predisposed to having symbiotic relations with scientific research. This facility requires scientific research that contains the technical frame of references needed to define and update impact indicators, while scientific research requires the monitoring-evaluation facility to capitalise its results through additions and corrections:

- as data for studying processes at play on a large scale if they are supported by a network of observatories, a “light” network that nonetheless is sufficiently “representative” of situations that may be encountered throughout the country;
- as tests on the reliability of methodology tools when they are used on a large scale. The quinquennial evaluation requires recourse to maps and to technical, socio-economic and institutional surveys.

For the arid regions, the Institut des Régions Arides (IRA) is the most appropriate institution for this scientific anchoring. Thanks to the nature of its programmes and its radius of action, it can cover all six gouvernorats in the south of Tunisia.

Anchoring could be achieved through a research-development convention between IRA and the CRDAs concerned within the framework of the Observatoire des Zones Arides pour le Développement Durable (OZADD) that IRA proposes to create.

#### Administration of the facility

Even if the operators/prime contractors eventually adopt the system voluntarily, the mechanism will still have to be placed under the responsibility of an institution in order to carry out the following “collective” tasks:

- monitoring, to ensure that the mechanism is working properly;
- organising coordination and consultation workshops and meetings;
- managing the mechanism on the Intranet.

The Permanent Secretariat of the National Committee to Combat Desertification seems to be the unit best placed and equipped to play this role.

## III- TESTING AND VALIDATING THE MECHANISM

### III.1 - IMPLEMENTATION

A region that is representative of the desertification problem

Since the mechanism has been designed for the sub-national level with results being transmitted to the national level, a region should be selected that meets the following criteria:

- natural resources and local populations severely affected by desertification;
- development activities related to combating desertification;
- integrated development projects.

*Map 3 - location of the gouvernorat de Tataouine*



Together with the Permanent Secretariat of the National Committee to Combat Desertification, and on the basis above, the *gouvernorat de Tataouine*, located at the far south of the country (Figure 18) was selected to be a test case for this mechanism.

### Participatory implementation

Three-pronged anchoring requires active, effective participation of the three levels (operational, strategic and scientific) in all the activities, especially training, awareness-building, validation of results, and dashboard operationalisation, which explains the need for a technical working group.

A multi-institution technical working group

Since the activities are to be carried out at the sub-national level, the group will be able to fulfil two objectives:

- stand by the experience throughout all phases and become familiar with its concepts and products;
- ensure restitution of input from the mechanism to the institutions at the strategic and scientific level.

Four institutions in charge of research-development and NRM have been linked to sub-national structures working in the same fields.

### A double validation of the mechanism

- The preliminary validation of the approach and the concepts: prior to implementation, the mechanism was validated by the partner institutions at consultation workshops held in-house for the various services concerned with desertification control, studies, planning and strategy monitoring. These workshops also provided an opportunity to extend concepts connected to the interface between development, monitoring-evaluation, and research. Preliminary validation ensures subsequent uptake of the tools being proposed by the facility.

- validation of tools in the field: the feasibility and reliability of indicators have been tested and then validated by the technical working group prior to implementation of the annual campaign.

### Field training

Since the tools of the mechanism were developed along practical lines, training was planned and organised using the training-action approach wherein field manipulations and observations receive scientific support.

This made it possible to verify the reliability of the descriptors used for the various indicator value classes. Two evaluators apparently gave the same value to the indicator used for all the planning and development actions for the three sectors of development.

### Conducting the evaluation campaign

The campaign was orchestrated by the technical group.

All field technicians can evaluate the impacts on the indicator forms, (fiches formulaires indicateurs) but the work becomes more time consuming and requires more manpower when many, widely scattered sites are involved, as was the case for the LDAs on enclosing rangelands on private property.

### The data collected are recorded in a database.

A multi-criteria (Efforts and Impacts) database

A database was developed as a platform to create synergy and dialogue among the various partners working on desertification control. This database contains full information of development Efforts and their Impacts and in time, through the accumulation of annual data, will become a major scientific/technical frame of reference on desertification control activities and their impacts.

## III.2- RESULTS: PRODUCT PERTINENCE

### The Efforts and Impacts database

Whatever information on efforts and impacts that the decision-maker needs can be found in the database, more specifically:

- At the global level
  - frequency: apparently (Table no. 1), the impact was good (0 to 67% according to the LDA). This already represents a good level of mastery of technical and operational packages linked to the LDA. On the other hand, certain LDAs still have an impact that is nil (42% for LDA 1221) or mediocre (0 to 30% for the other LDAs) or slight (0 to 100% according to the LDA);
  - quantity (Table no. 2), the impact was good (between 18 and 67% according to the LDA). Some LDAs, on the other hand had an impact the was nil (32% for LDA 1221), mediocre (between 12 and 32%) and slight (between 22 and 100%).

Table 1 (frequency)						
LDA	impact (%)					
83	0	1	2	4	5	total
1114	0	17	33	50	0	100
1131	0	0	40	60	0	100
1132	0	0	0	60	40	100
1135	0	30	50	20	0	100
1153	0	0	33	67	0	100
1180	0	7	27	67	0	100
1221	42	0	17	0	42	100
2114	0	0	0	50	50	100
2200	0	0	100	0	0	100
2440	0	25	38	38	0	100

Table 2 (Quantity)						
LDA	impact (%)					
10 832	0	1	2	4	5	total
1114	0	26	51	23	0	100
1131	0	0	40	60	0	100
1132	0	0	0	46	54	100
1135	0	31	51	18	0	100
1153	0	0	33	67	0	100
1180	0	12	24	65	0	100
1221	32	0	22	0	45	100
2114	0	0	0	50	50	100
2200	0	0	100	0	0	100
2440	0	32	46	22	0	100

• if each LDA is considered separately, LDA 1114 for instance, the impact recorded was weak in 17% of the cases for frequency as against 26% for quantity, which means that the bigger the quantity processed the poorer the impact. The same tendency can be observed when the impact is good.

As we can see, there is a wealth of improvements that the monitoring-evaluation mechanism could exploit, regardless of the degree of maturity achieved by the development system in the country.

### The dashboards

One dashboard, containing easily exploitable results, is constructed for each LDA on the basis of the Efforts and Impacts databases.

The dashboard is structured to include the results of a maximum of six indicator/parameter couples, for the database (see diagram to the right). Each of the six squares contains:

- the results (efforts and impacts);
- the interpretation of the results;
- suggested improvements (additions and corrections);
- tangible actions to introduce into the planning/programming process.

The results reported in the provisional dashboards are being used by the technical working groups (TWG) in participatory workshops (think tanks). This TWG is tasked to validate and interpret the results and suggest proposals for actions to improve the effectiveness of the LDA when their impact is between nil and mediocre and to consolidate them when their impact is good.



Annual monitoring results				Evaluation Year 2004	years evaluated 2002 and 2003		
<b>LDA &gt;&gt;&gt;</b>	<b>1114</b>	mechanic treatment of water shed: dry edging stones					
Indicator	1	antierosive efficiency of transformation			Indicator	0	
parameter	1	efficiency against layer erosion			parameter	0	
Impact	2	4			Impact		
% quant	77	23			% quant		
Interpretation: this type of works is not efficient against layer erosion given the importance of the slope at Jbel Ksar Dghagra				Interpretation:			
Proposition:				Proposition:			
Indicator	1	antierosive efficiency of management			Indicator	0	
parameter	2	efficiency against furrowing erosion			parameter	0	
Impact	1	4			Impact		
% quant	77	23			% quantity		
Interpretation: this type of work has not showed any efficiency against furrowing erosion because of many furrows remaining. This is probably due to the inadequat digging of the furrows substructured.				Interpretation:			
Proposition: in order to improve the efficiency of this type of works, we should proceed to the adequet marking befor any execution.				Proposition:			
Indicator	3	Biological efficiency			Indicator	0	
parameter	1	State of the natural regeneration			parameter	0	
Impact	2	4			Impact		
% quant	77	23			% quantity		
Interpretation: in the oued Dekouk site level, this type of transformation as showed a good impact on the natural regeneration by the additional sediments however for the second site (Ksar Dghagra) the works are recent.				Interpretation:			
Proposition: to followup				Proposition:			

Thus, in the case of LDA 1221 (Box no. 4), the mediocre impact can be traced to the poor distribution of water on the seedbed which, in turn, can be traced to the lack of respect for the contour line and insufficient seed in the ground. The subsequent proposals were: respect for contour lines and consolidated seed stock through sowing.

Out of ten LDAs, 83 impacts have been evaluated; for 37 (i.e. 44%) of them with impacts of nil to weak, 33 proposals for improvements were made (see table).

<b>Table 4: LDA evaluation results</b>	
<b>Indicator:</b>	Biological efficiency
<b>Parameter:</b>	State of the natural regeneration
<b>Impact:</b>	weak 77%; good 23%
	Interpretation: Oued Dekouk: bad water distribution on seed bed (water scarcity, lack of seed bed and lack of need stock) The contour lines have not been followed or respected
<b>Proposal:</b>	
	Implementation of the works on contour lines
	Consolidation seeding.

### Identification of additions and corrections / operationalisation of dashboards

During the dashboard operationalisation workshops for the same technical groups, the proposals from the validation workshops (think tanks) were translated into concrete actions that could be incorporated as additions and corrections in the planning/programming process.

AAD	Nb propositions
1114	6
1131	2
1132	0
1135	4
1153	2
1180	3
1221	5
2114	4
2200	0
2440	7

Proposal	Future action	Level
Respect contour lines	Strengthen worksite supervision	Sub-national
Consolidation through sowing	Define introductory techniques (sowing...)	Scientific
Extend the treatment to threatened areas. Look more carefully for appropriate sites	Respect or revise development plan if it exists otherwise prepare one	National

Each proposal corresponds to a potential action, in other words an addition or a correction that can be taken up at the sub-national level or the national level or by scientific research, as can be seen from the table to the right.

This table shows that 42 additions and corrections have been identified in the various levels.

Niveau	Nb d'additifs et/ou correctifs
Sub-national	20
National	20
Scientifique	2

### III.3- IMPACT OF MECHANISM

Although the mechanism was only used on one gouvernorat and was only applied to one representative sample of activities to combat desertification in the region, decisions at various levels often reflected and applied the results, e.g.

#### At the strategic level

The Office de l'Élevage et des Pâturages (OEP) introduced a process for revising criteria used to determine which plots of land would be exclosed.

The Direction Générale de l'Aménagement et de Conservation des Terres Agricoles (DGACTA) showed great interest in the mechanism and is thinking about using it in other gouvernorats as part of the SWC strategy.

#### At the operational level

The various districts (arrondissements) of the Commissariat Régional au Développement Agricole decided to include monitoring-evaluation in their activities report and started changing their plans and their procurement methods by improving their technical specification for the implementation of certain LDAs.

#### At the research level

The Institut des Régions Arides de Médenine, after working on the operationalisation of the DSE, feels that the mechanism could be given a role as a catalyst in the research/development partnership, and a facilitator to identify the need for development-oriented research, and an optimiser to get the results of research fully appreciated by the development partners.

## IV- LESSONS AND PERSPECTIVES

This experience, although limited in time and space, made it possible to show that the operational monitoring-evaluation mechanism, when focused on the impact of efforts to combat desertification, could be linked to the development system.

This mechanism had the advantage of being:

- simple, practical and economical, not requiring any experimental protocol or laboratory analysis and thus could be easily be assimilated by the field operators;
- sufficiently productive, in terms of additions and corrections that might be improve the eligibility of the LDA on desertification control and sustainable development;
- flexible enough in its interactions with development and scientific research units;
- progressive, in terms of information management system and indicators.

Extrapolation to the national level to support all the development projects and programmes is possible if:

- the mechanism is institutionalised by becoming an integral part of the development system: the Commission Nationale du Développement Durable (CNDD) has already made a recommendation along these lines. The practical terms and conditions for having the projects approved and for securing the funding at the mechanism's level is still required;
- the National Committee to Combat Desertification is strengthened enough to allow it to play its horizontal role as administrator of the monitoring-evaluation mechanism.

But the feasibility and viability of a monitoring-evaluation mechanism does not only require the political determination of the strategic and operational operators but also greater human and material resources in the participating institutions.

At the operational level, although the mechanism has been designed to be comprehensive and systematic, preference may be given to a gradual process that covers a sample of sites and LDAs for a 2 or 3 year start up phase, The results will produce numerous lessons that can be applied throughout the area of study.

Where development efforts are sufficiently strong, the results can be adapted to the regional level (UMA or the circum-Saharan arid zones, for instance).

The impact of efforts to combat desertification is only monitored and evaluated in rather limited areas, where public investments are concentrated. In the rest of the areas, development activities carried out as part of self-financed programmes or incentives or various funds create impacts that the mechanism cannot take into consideration. A global evaluation on the state of desertification at regular intervals is vital for the mechanism. The Institut des Régions Arides agrees and has proposed to create the Observatoire des Zones Arides pour le Développement Durable (OZADD) with a programme comprising 1) an annual impact monitoring-evaluation component for development activities funded as part of the development strategies, and, 2) a quinquennial component to prepare the state of desertification throughout the territory under study..



## CHAPITRE VI

# ASSESSMENT OF RESULTS AND FUTURE PROSPECTS FOR NAP MONITORING-EVALUATION

Aboubacar ISSA  
Ali MHIRI



## I- INTRODUCTION

Assessing the results of OSS efforts to support its member countries in the process of introducing the NAP/CD monitoring-evaluation system is considered via the main steps of the process, which ultimately should lead to the creation of a new tool for planning, guiding and evaluating the combat against desertification, namely:

- approaches and concepts defined in these countries on the basis of well-considered utilisation of test experiences;
- the NAP monitoring-evaluation tools and the methods for making them;
- the institutions and cohort of people in charge of monitoring-evaluation and the material resources mobilised;
- the assimilation of past achievements (acquis) and their implementation by the stakeholders;
- the prospects for developing monitoring and evaluation.

One of the CCD principles says that desertification control is the joint responsibility of all parties working on development issues, both at the national and the international levels. This paper seeks to examine both the global results and the extent of local, regional and national involvement in adopting and applying this instrument, in order to identify the possible weak links in the national monitoring-evaluation mechanism now being constructed and various problems related thereto.

The first actions launched by OSS and its partners in this field bore on the development and practices of training in communications as well as training on monitoring-evaluation objectives and concepts. This training was designed for various types of stakeholders and decision-makers from many countries striving to combat desertification through:

- activities to familiarise decision-makers and leaders from national institutions responsible for desertification control efforts;
- OSS' participation in NAP validation forums to disseminate NAP/CD monitoring-evaluation concepts and objectives;
- the mobilisation of human expertise in the development partners' countries, the preparation and dissemination of documents (introductory leaflets and posters), and the organisation of side events during the CCD Conference of Parties;
- the formulation of training modules and the organisation of workshops in a variety of languages to build up capacity at the national level.

These actions have produced tangible results, viz. increased awareness of the challenges of monitoring-evaluation, a change in the attitudes of the development and desertification control programme planners, and systematic inclusion of monitoring-evaluation as a full fledged component of all the NAPs. Significant progress has been made but much still needs to be done.



## II- ASSESSMENT OF PROGRESS WITH MONITORING-EVALUATION APPROACHES AND CONCEPTS IN OSS COUNTRIES

The grounds and objectives of NAP monitoring-evaluation, as defined in the CCD and disseminated by OSS, have been adopted by all the member states. This was the basis the states used for adapting the NAP monitoring-evaluation facilities to their situation and launching it.

The differences in methods and procedures for natural resources management and for desertification control projects and programmes in these countries have led to the introduction and adoption of a variety of approaches for constructing the NAP monitoring-evaluation mechanisms. The presentations on Morocco, Tunisia and Niger at the Conferences of Parties are a good example of this diversity: global approach for evaluating the combat against desertification, including sectoral resource management throughout the country in Tunisia, thematic approach to NRM and rural development in Morocco, and a regional project-based approach in Niger. These approaches try to anchor monitoring-evaluation in the realities of the institutions responsible for combating desertification in each of the countries and have kept the same common denominator, i.e. respect for the CCD principle on adopting the participatory approach involving all the stakeholders. This is a considerable achievement and a decisive turning point for these countries considering the technicistic, centralising approach that prevailed for so long a time. Most of these countries are gradually making dialogue and consultation the general rule for their activities and, with the assistance of OSS, using them in projects to promote NAP monitoring-evaluation. In the strategies being developed at all the levels, real efforts are being made to share with and involve groups of stakeholders concerned with monitoring-evaluation.

The establishment of monitoring-evaluation systems has required cooperation between the National Coordinating Bodies and the institutions that produce and possess environmental and socio-economic data. This has led to the organisation of several national and international workshops whose results show how active a role the participants have played. But the institutionalisation and promotion of the participatory approach needs to be consolidated at all stages of the monitoring-evaluation learning and assimilation process. Achievements in consolidating this approach can be more clearly seen at the national level than at the other levels. There are several reasons for this, e.g.

lack of organisation at the local level, insufficient capacity to shoulder this new mission, which devolves to them, etc. The Tunisian experience, wherein monitoring-evaluation of the combat against desertification was channelled through an integrated local rural development project is very instructive in this regard: the local population and the local NGOs participated in all the activities, as of the project planning phase. Training and supervision by experienced experts from the sub-national and national levels also contributed to the success and viability of the project.

These were the dynamics of the countries' gradually moves, at different paces, from an episodic, sectoral evaluation approach to desertification control programmes/projects to systems that rely on shared responsibility among the various groups of stakeholders in charge of these programmes. At different political and technical levels, significant changes have been made in planning the combat against desertification which henceforth will include economic, social and land tenure aspects, unlike the traditional approach in which actions were limited to biophysical aspects. The adoption of the CCD and the appeal of OSS actions provide stakeholders with information on the monitoring-evaluation concept and alleviate their apprehensions about the relation between controls/sanctions and evaluations. The combat against desertification, thus, is becoming combined with the fight against poverty and the fight for development to such an extent that in certain places, e.g. the local development project in southern Tunisia, monitoring-evaluation is being incorporated in the planning process for local actions to combat desertification, interconnected with various sectors of development, and corrective actions wherever necessary.

Yet, the pertinence and viability of these approaches in the long term, in the different situations prevailing in these countries, still need to be confirmed.

### **III- ASSESSMENT OF EXPERIENCES IN FORMULATING NAP MONITORING- EVALUATION TOOLS**

OSS has worked extensively on this theme and has played a decisive role in staking out the path for national monitoring-evaluation systems, joining its efforts to those of its member states and partners in a variety of projects.

Monitoring-evaluation has gone through a phase of intensive dialogue and consultation on methods to identify and produce the expected tools and products, which led to the construction of a model for a process indicators and impact indicators grid that corres-

ponded well with the array of sustainable development indicators. This convergence contributed to the harmonisation of work to identify and produce indicators specific to different problems.

The main achievements in the technical frame of reference was:

- a methodological approach to creating monitoring-evaluation tools;
- a model for an impact indicators grids that could be adapted to different situations in the different countries;
- a prototype for a dashboard for national level decision-makers;
- a structure for a desertification information system (SCID) that optimises the DIS-SISEI prototype developed by OSS;
- monitoring-evaluation training modules: these modules serve as a lever for capacity building and have given the beneficiary countries a good lead.

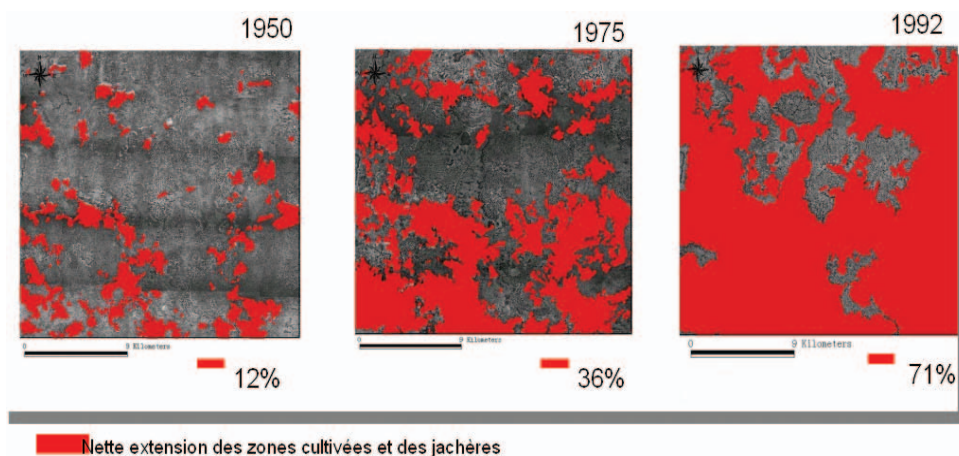
The countries involved have invested in gradually expanding their arsenal of tools for NAP monitoring-evaluation by capitalising OSS experiences and banking on what already existed in their countries during the start up phase.

For the monitoring-evaluation implementation process indicators, all the countries, in so far as possible, have adopted the grid proposed by the CCD for preparing the national biennial reports to the CCD bodies. But the approach adopted to identify the impact indicators and construct the indicators grid at the national level has varied from one country to the next. Most of the countries managed through a simple consensus, capitalising on available data and information even if it did not cover all the aspects of desertification. Other countries preferred to adopt a rational approach that used an itinerary that culminated in an indicators grid and a dashboard that covered the whole problem of desertification and the impact of actions to combat it.

Most of these countries have adopted and adapted the SCID (desertification information dissemination system) prototype and some can already make it available to the users (Tunisia, Morocco, etc.). Furthermore, very interesting experiences in creating tools adapted to monitoring and evaluating the combat against desertification at the local level have successfully passed the field test.

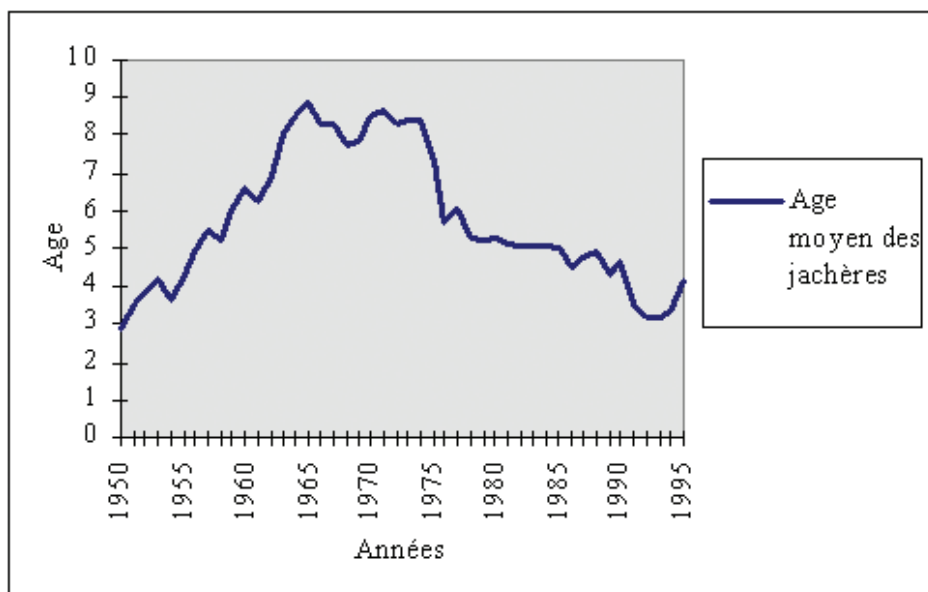
Recourse to diachronic spatial observation of soil utilisation has evidenced the advantages of this method in comparison to observation of the evolution of desertification and its impacts on a given land area (Figures 17 and 18).

Figure 17 - evolution of land use, ROSELT/OSS Observatory for Torodi/Tondikandia/Dantchandou, Niger



Net increase in farmed and fallow lands

Figure 18 - evolution of age classes for fallowlands between 1950 and 1995



The global assessment of these achievements in this first phase is very positive. But there are still many obstacles to including them in daily practices. Yet, most of the African countries have a wealth of non-negligible quantified data and maps which are ready to be included in information systems and used to establish states of reference and comparisons of the states of their natural resources in time and in space.

## **IV- INSTITUTIONAL ANCHORING, HUMAN CAPACITIES AND LOGISTICAL ENVIRONMENT**

The institutional anchoring of NAP monitoring-evaluation has been one of the aspects that strongly attracted the institutions responsible for combating desertification. When designing and installing their monitoring-evaluation mechanism, the NAP partners investigated and discussed this field most. With regard to the purpose of NAP monitoring-evaluation, two tendencies can be understood from the partners' attitudes:

- preference for anchoring the monitoring-evaluation tasks in the institutions responsible for implementing desertification control and NRM programmes and projects. This new attribution would be a real tool in improving the technical and socio-economic effectiveness of their actions, programmes and/or projects. The institutions, with this in mind, would have to produce both data and indicators based on methods discussed and validated by the NCB and would have to report regularly to all the potential users, including the NCB;
- a preference supported by certain NCB secretariats that want to take the place of the desertification control actors themselves or commission other external services to calculate the indicators and evaluate the NAP on behalf of the NCB.

The latter option is not compatible with the monitoring-evaluation objectives, i.e. adoption and implementation of monitoring-evaluation as part of the normal project management procedures and a posteriori evaluation of impacts.

Thanks to their strong political commitment to respect the fundamentals and directives of the CCD, the countries in the circum-Saharan region that are members of OSS were rather quick in establishing national bodies, i.e. the National Coordinating Body (NCB), to coordinate NAP implementation, including monitoring-evaluation. The NCB brings together representatives of all parties working on desertification control and NRM and makes NAP implementation process evaluations periodically. Further, via its secretariat, regular progress reports are made on NAP implementation and the impact of the development process on the local population and on the management of natural

resources. These reports are drawn up for the national authorities and the UNCCD Conference of Parties.

In certain countries such as Tunisia, Morocco and Niger, the whole national mechanism for NAP monitoring-evaluation has been integrated at the three (national, sub-national and local) levels of planning and decision-making. Altogether the mechanism has been designed to form a coherent network through which information and indicators are to be produced and exchanged via a dedicated information dissemination system, with due respect for the information charter adopted by all the partners. In this scenario, institutional anchoring at the sub-national and local levels is carried out by capitalising on existing planning and implementation services for desertification control projects at the appropriate level (local and regional councils).

Despite the considerable progress made in the monitoring-evaluation implementation process, roles and responsibilities have still not been clearly awarded to the actors. More effort is needed to consolidate achievements in institutional arrangements so that monitoring-evaluation becomes a structural part of the institutions responsible for implementing the countries' policies in combating desertification, and unfounded misunderstandings and apprehensions about the consequences of evaluations are eliminated.

Further, certain people working to combat desertification, especially at the national level, do not want to take charge of this new function, monitoring-evaluation, not because of lack of conviction but because the human and logistical resources are too weak or non-existent. During the training session on monitoring-evaluation concepts and methods, organised by OSS and its partners for senior staff from several countries, many recommendations were made on the need to predicate the adoption of monitoring-evaluation on prior capacity building (human capacity and material means). This shows the magnitude of the obstacle to continuation of the full NAP implementation process.

Most results with monitoring-evaluation in the participating countries were connected to monitoring-evaluation projects that developed organisational structures, e.g. permanent technical services, for instance, were linked to monitoring-evaluation working groups and steering committees. This effort to structure the projects was not strong enough to ensure the uptake of monitoring-evaluation approaches and tools by the permanent services.

To anchor monitoring-evaluation in the technical service departments, more targeted support will be needed to identify new needs and unrelentingly build up the capacities of these services.

## V- APPROPRIATION AND VIABILITY OF THE MONITORING-EVALUATION SYSTEM

The OSS countries have gone through the start up phase for their NAP monitoring-evaluation implementation process with great good will. They worked out institutional measures adapted to their situation, created monitoring-evaluation tools by drawing on what already exists, and have provided the successive CCD Conference of Parties with biennial evaluation reports on progress in the NAP implementation process. Most of the countries still need to assimilate these achievements and put them to use to fulfil the targeted objectives of monitoring-evaluation. The monitoring-evaluation exercises that the countries carry out here and there have only tested the functioning capacity of the systems and the relevance of the tools developed. The national institutions in charge of combating desertification have been very hesitant in assimilating monitoring-evaluation, for several reasons:

- at the local level, the involvement of the civil society (NGOs, professional organisations, farmers, livestock producers) in implementing monitoring-evaluation requires the adoption of a variety of measures to define their role and ensure their effective participation in a constructive evaluation of local actions to combat desertification and to further rural development;
- at the sub-national level, the establishment of regional services for monitoring-evaluation requires continuous efforts in creating awareness, training and capacity building as well as gradual consolidation of the means of action;
- at the national level, the NCBs are calling for considerably more material means to strengthen and consolidate their secretariat.

Conversely, the NCBs will have to assume their role as a driving force in NAP implementation (all components) and ensure the effective involvement of all actors in desertification control and rural development at all levels of decision-making.

Further, how the countries progress in the ever-changing monitoring-evaluation process remains strongly conditioned by:

- repeated practice in using the tools designed in each country to ensure that they are functional, efficient and coherent;
- optimisation of the experiences of countries of the region in all phases of the process.

Satisfying the legitimate demands of the various actors, who want a minimum of facilities in order to adopt monitoring-evaluation and practice it regularly, is still the stumbling block in the implementation process.

*Global dashboard of progress in NAP monitoring-evaluation  
implementation in OSS countries in 2006*

<b>Step / Level</b>	<b>Local</b>	<b>Sub-national</b>	<b>National</b>
Political commitment			(+++)
- Development concepts and approaches	(+/-)	(-)	(+++)
- Integration of monitoring-evaluation in development planning	(+/-)	(-)	(+)
Creation of tools:			
- Indicators grid	(+)	(-)	(+++)
- Dashboard	(-)	(-)	(+)
- Information dissemination system	(-)	(-)	(++)
- Incorporation of monitoring-evaluation at national, sub-national and local levels	(-)	(-)	(+/-)
Implementation			
- Process monitoring-evaluation	(+)	(-)	(+++)
- Impact monitoring-evaluation	(+)	(+/-)	(+/-)
- Desertification monitoring-evaluation	(++)	(-)	(++)
Support measures	(+)	(+)	(++)
-National capacity building			
-Logistics: equipment and means	(-)	(-)	(+)
Research-development	(+)	(-)	(+/-)

Key:

- \* (+++) : Very significant progress
- \* (++) : Significant progress
- \* (+) : Confirmed start
- \* (+/-) : Uncertain situation
- \* (-) : Non-bankable results
- \* (-) : No initiative



## VI- CONCLUSION AND PROSPECTS FOR NAP MONITORING-EVALUATION

Efforts in NAP monitoring-evaluation have produced interesting technical results in terms of methodological approaches and the development of tools (indicators, databases, dashboards) but the most basic achievement has been attracting the various stakeholders in the combat against desertification to the objectives of monitoring-evaluation. The fact that a few national institutions and development projects are gradually using monitoring-evaluation is an excellent illustration of the collective results achieved by OSS, and its member states and partners. But these results and achievements can be traced first and foremost to projects implemented to support the countries in developing their NAP monitoring-evaluation systems.

Capitalisation and sustainability are two areas that the permanent structures need to work on in order to assimilate the results of monitoring-evaluation.

Objectively speaking, the achievements of this start up phase, which has been going on since the countries adopted their NAPs, are globally positive, although no claim can be made that they are sufficient or complete. Prospects for consolidating and propagating these achievements to all levels of responsibility for combating desertification will depend largely on the commitment, motivation and perseverance of all parties involved in the process that is now underway. Each party has its own role to play:

- the states must now translate their very clear international commitment to the CCD at the national level, not only at the political level or for sectoral development programmes, but also structurally by adopting monitoring-evaluation as a tool of good governance, using it in daily practices in the combat against desertification and development projects. The roles and responsibilities of all the actors in monitoring-evaluation assimilation and operationalisation must be clearly defined before the process can be accelerated;
- partner countries in the development process must, as in the past, play a decisive role by once again actively assisting the countries in creating enabling conditions for the viability of achievements and the continuation of the process;
- the various national actors, especially the local populations that gain directly from

NAP monitoring-evaluation, should be ready to benefit from this opportunity to carry out their obligations in natural resource preservation and to enjoy their user rights by becoming more involved in this national undertaking.

With regard to the brief evaluation table of monitoring evaluation at different scales, prospects for continued consideration and action can be benchmarked through the following overall objectives that all the parties involved should work on together, in compliance with the NAP orientations:

- overcome identified constraints of all types through greater consultation and persuasion to bring in and keep all actors in the combat against desertification;
- ensure the reliability, assimilation and operationalisation of achievements at the national level;
- revive the discussion among the actors on the concepts and formulation of monitoring-evaluation approaches and tools at the sub-national and local levels, drawing on lessons from relevant past experiences in the region;
- identify the network of communications channels included in the local, sub-national and national levels in each country in order to operationalise the desertification information circulation system.

The fulfilment of these objectives, however, will depend on the adoption of several fundamental support measures on:

- strengthening, or creating, human capacity in NAP monitoring-evaluation;
- providing expert support and renewing material support for services involved in introducing a monitoring-evaluation system for their desertification control activities;
- involving national research-development institutions in the various aspects of NAP monitoring-evaluation.

New wind will be needed to produce new plans of actions for NAP monitoring-evaluation in the various countries of the region, and OSS, by virtue of its mandate, will continue to serve as a facilitator and partner to assist the countries in achieving their NAP monitoring-evaluation goals.



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