

# **Success Stories in Reversing Land Degradation and the Role of UNCCD**

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## **Executive Summary**

This report examines trends in dryland land degradation and success in its control since the ratification of the UNCCD in 1994. An attempt is made to identify the key drivers of these successes and the contribution made to them by the UNCCD. It finds that progress with land degradation control is clearest when initiatives have focussed on social and economic development with land degradation control coming as a secondary benefit associated with broader area development support initiatives. Common elements in those success stories reviewed include: emphasis on improving market access for agricultural products, building capacity and policy to support and sustain improvements in natural resource management and targeting women and their roles in land and soil management for support. The role of the UNCCD in the success stories reviewed is modest as the convention has prioritised the development of National Action Plans (NAPs) and a variety of partnership agreements over field level activity and the former have taken a long time and a lot of effort to complete. In many cases these NAPs are still not finalized or have yet to be implemented to any significant degree. Resource constraints, weak political will and the low priority often given by national governments to land degradation contribute to the forces slowing down progress in land degradation control. A new more confident and invigorated approach that prioritises field level activity and gives due emphasis to the main drivers of success recognised in those areas where progress has already been made is recommended for the UNCCD.

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# 1. Introduction

The remit of this paper is to identify and examine “success” stories in combating dryland land degradation (here-after referred to as LD) since the ratification of the United Nations Convention to Combat Desertification (UNCCD) in 1994. What information there is on LD trends over the last 12 years will be reviewed briefly. There will then be a discussion of the approach and activities of the UNCCD since 1994. Successes in reducing, controlling or reversing LD in drylands will be identified and discussed drawing out likely factors contributing to these successes, particularly those factors common to success in more than one case, and the contribution of the UNCCD will be considered. Finally this paper will take the lessons learned from success and cases of good (if not best) practice from the past to consider how these can be incorporated into the activities supported by the UNCCD in the future.

## 1.1 Definitions

It is worth clarifying at the start the working definitions of “land degradation” and “success” to be used in the paper. The UNCCD defines **Land degradation** as:

“reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rainfed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns, such as:

- (i) soil erosion caused by wind and/or water;
- (ii) deterioration of the physical, chemical and biological or economic properties of soil; and
- (iii) long-term loss of natural vegetation” (UNCCD, 1994)

There are broader definitions in use. For example, the Global Environment Facility (GEF) definition includes deforestation as a form of LD but in this paper the UNCCD definition is used.

**Success** in prevention/rehabilitation of LD is interpreted in many different ways in the literature and the approach in this paper will be to make reference to two definitions. Firstly quite a rigorous definition as applied in some studies that have developed comprehensive lists of success indicators. The United Nations Environment Programme (UNEP, 2002) used a framework for their GEO Report that includes 25 criteria grouped under “land use”, “social and economic” aspects and “policy related issues” (see Annex 1). Mortimore (2005) proposed a framework of criteria for success grouped into four domains: “ecosystem management”, “land investments”, “productivity” and “income & welfare” (again in Annex 1). Although useful, long lists are always difficult to deal with. Presumably some indicators are more important than others, some will only arise in particular circumstances and not in others and some trade-offs between indicators may occur. In a report commissioned by the Global Mechanism, Reij and Steeds (2003) used the following criteria for identifying successful projects:

- long-term increases in productivity;
- increases in per capita income;
- increased drought resilience of rural production systems;
- increases in biodiversity;
- for particular projects, economic rates of return (ERR) of 10 % or more.

There are fewer indicators in this list but a great deal of data is required in some cases over a long period of time to investigate these criteria, particularly increases in biodiversity and

ERR. For the sake of practicality and at some risk of being over-simplistic the indicators looked for to satisfy a “rigorous” definition of success in this paper will be:

- empirical evidence to support claims of success
- impacts that are self-sustaining once external support and benefits decrease
- some evidence of spread or likelihood of spread of impacts
- impacts that benefit the whole or most of the community including the poorer households and individuals

Unfortunately rigorous studies that provide sufficient information to test for this type of success are rather few in number.

Secondly a “weaker” definition of success will be used that is much less exacting though much easier to find reported. It requires some progress in controlling land degradation or rehabilitation without much empirical evidence or concern about the size of the area, extent of external support, self-sustainability, spread between land-users and regions etc.

Though it is easier to find examples of the weaker rather than the more rigorous of these two definitions there is a lot of middle ground and it is useful to have these different interpretations of “success” in mind when reviewing the case studies below.

## ***1.2 Scope***

Although this paper is concerned with the period since the UNCCD was ratified. The history of LD-related intervention and analysis of success and failure predates 1994 by a long way. The work of Tiffen, Mortimore and colleagues from the 1970s through to the present is key here, particularly the detailed studies of the Kano Close-Settled Zone in Nigeria and Machakos in Kenya (e.g. Tiffen et al. 1994, Mortimore and Tiffen, 1994, Harris, 1998). This work found a generally positive link between population growth and improvements in environmental management and stimulated other work that looked for similar success stories elsewhere in Africa (e.g. Mortimore and Tiffen, 2004; Mortimore, 2005). The Machakos and Kano stories pre-date the UNCCD but they suggest a number of factors can be drivers of success (as opposed to the *indicators* of success discussed above) in dryland LD control:

**i) Access to markets.** Acknowledged as an important driver in the Machakos and Kano examples and as a major constraint to success when absent (e.g. Wiggins, 2000). A wide range of different factors can put markets outside the reach of the small producer e.g. physical distance from market, poor road links, lack of transport, punitive taxation policies that exclude small-scale producers or other producer groups (Ellis and Bahigwa, 2002) or unstable prices. Access can be improved by improving infrastructure; improving access to transport; adopting taxation policies that facilitate rather than impede the market access of small producers; supporting the development of farmer buying/selling cooperatives, improving communication etc. Much of rural Africa is a long way from a sizable market. The loss of public parastatals that traditionally provided them with input and product markets have now been largely dismantled and the private sector has been quite selective in moving in to take their place.

**ii) Broad approach to improved dryland management/development rather than targeting land degradation alone.** There has been criticism of the UNCCD, at least in the 1990s, for being too focussed on LD as a stand-alone problem best addressed through technical interventions. Acknowledging that LD is just one factor in the production environment has been part of the recent shift in UNCCD emphasis that is now beginning to target the underlying drivers of LD (e.g. poverty, capacity and institutional constraints etc.) as well as increased recognition that it is often the indirect impacts of LD on the livelihoods of rural people that motivate interest in LD control (e.g. DFID 2004). For local stakeholders

particularly the (usually poor) land managers themselves, productivity and personal income/welfare are likely to more significant incentives for changes in land management. Interventions that target these have more chance of success.

**iii) Supportive policy and adequate capacity** to foster successful dry-land development and environmental management. Required also if small successes are to be scaled up to district/national level.

This paper is taking these as the three drivers (ingredients?) for success. The success stories discussed below will be summarised and examined for these ingredients, as will activities directly influenced by the UNCCD.

## **2. Trends in land degradation since 1994**

This section will consider the status of land degradation and also the increased international recognition and effort that it has received over the last ten years as GEF funding has been made available and public awareness has been raised by the UNCCD and others.

### **2.1 The status of land degradation**

The lack of any rigorous global assessment of LD since the GLASOD (Oldeman, 1991) means there is no clear comprehensive picture of the trend in LD over the last 12 years and its status today. The UNCCD (2000) themselves identify this as a constraint: data sets on degradation are incomplete and inadequate and there is not yet any consensus on the most appropriate set of methodologies for assessing LD in drylands, particularly methods that link assessments of the biophysical process to impacts on the local economy and livelihoods in ways that support integrated assessments on the impacts of LD in an area.

### **GLASOD and ASSOD**

The most widely quoted data on land degradation are derived from the Global Assessment of Human Induced Soil Degradation (GLASOD) that pre-dates the UNCCD (Oldeman et al. 1991). Even this study was limited as it was based on expert opinion largely unverified by direct measurement, e.g. remote sensing or field based measurement. A group of experts was asked for their perception of the intensity of degradation and its likely impact on productivity, agricultural suitability etc. and these opinions formed the basis of the mapping exercise. The Assessment of the Status of Human-induced Soil Degradation in South and Southeast Asia

#### **Box 1 Use of GLASOD**

The results of GLASOD, although dated and with some major limitations, are still widely quoted e.g.:

“It has been estimated that 23 per cent of all usable land (excluding mountains and deserts, for example) has been affected by degradation to a degree sufficient to reduce its productivity...”.(UNEP 2002, Global Environment Outlook 3)

“Land degradation adversely affects the ecological integrity and productivity of about 2 billion ha or 23% of landscapes under human use...”.(GEF 2003, OP15)

“The Global Assessment of Human- Induced Soil Degradation (GLASOD), based on expert opinion, estimated that 20 per cent of the world’s deserts are affected by some type of land degradation...”. (UNEP 2006, Global Deserts Outlook)

(ASSOD) was

more detailed but also relied heavily on expert opinion (Lynden and Oldeman, 1997; Middleton and Thomas 1997).

Their limitations notwithstanding, GLASOD and ASSOD still represent the most comprehensive studies at the global scale and, in the absence of any new global-scale data remain widely quoted (see Box 1) and formed the basis of a number of later publications on land degradation. The World Atlas of Desertification (Middleton and Thomas 1992) drew largely on these two assessments. The 2<sup>nd</sup> edition of this atlas was revised and expanded to include environmental issues and socioeconomic conditions related to LD such as biodiversity, climate change and the availability of water, poverty etc. but the same data on LD was used (Middleton and Thomas 1997).

### **LADA (Land Degradation Assessment in Drylands)**

The lack of an up to date global assessment of LD is only now being addressed with the Land Degradation Assessment in Drylands (LADA) project. This project is funded through GEF, implemented by the Food and Agriculture Organization (FAO) in partnership with UNCCD, UNEP, the United Nations University (UNU) and other key players. The project was formally launched at the 3<sup>rd</sup> GEF assembly at Cape Town, August, 2006, after a phase of methodology development and aims to document the extent and impact of LD in the world's drylands. Already some very preliminary new global and regional LD assessments have been produced though they are still being refined and verified and have not yet been widely circulated. A number of remote-sensing based methods have been used to produce these maps, most important of which is probably the normalized difference vegetation index (NDVI) method that uses a set of vegetation related indicators as proxies for LD assessment. This is a totally different approach to mapping LD from GLASOD and the preliminary results do show quite a different pattern of LD hotspots (areas suffering severe LD) and bright spots (areas of successful LD control) compared with GLASOD (David Dent, ISRIC pers. comm.).

### **2.2 Indications from case studies**

Whilst there has been no global assessment since the early 1990s quite a number of case studies examining systems of local soil and land management have been published in the last 15 years. One catalyst for these was the encouraging story emerging from Machakos (Tiffen et al. 1994) and a desire to see if this story was being replicated elsewhere (Mortimore and Tiffen, 2004). Another major stimulus was the growing interest in using nutrient budgeting techniques, prompted by Smaling's work in the early 1990s (e.g. Smaling et al. 1993) that calculated nutrient budgets at field, farm, regional or national level and used them as sustainability indicators. This work, with a focus more on soil fertility and chemical land degradation than erosion, encouraged a whole generation of soil researchers to look very closely at local soil management practice (e.g. Elias & Scoones, 1999; De Koning et al. 1997). These studies are often very detailed with fascinating insights into farmers' management of their land and the consensus from all this work seems to be that farmers are extremely good at adapting to changes in their environment and at managing LD when it occurs. Many of these studies have taken place in drylands and support the earlier work from Dutch researchers suggesting there can be great variability in farmer nutrient management from one field to the next but that the average annual per hectare nutrient losses from small-holder farms in sub-Saharan Africa are in the order of 20-30 kg nitrogen; 2-5 kg phosphorus and 20 kg potassium (Stoorvogel et al. 2003). Depending on the soil, its management and history of cultivation, these losses can be sufficient to lead to productivity decline and chemical land degradation in periods anything from 2-3 years upwards. This work tells us that chemical land degradation is continuing to occur particularly in areas where pressure on land is increasing and subsistence farming prevails: conditions that apply to many dryland areas today.

Traditionally the term “land degradation” has been applied more to erosion and other physical processes than to chemical degradation such as nutrient depletion. This distinction persists today and although the UNCCD definition clearly includes chemical degradation it has had little if any links with the work just described.

When these detailed case studies have uncovered significant erosion and physical LD it seems to be more often presented as a consequence of climatic variation (i.e. drought, increased rainfall intensity etc.) or poverty is identified as the most significant underlying driver of unsustainable land management rather than the lack of technical know how to manage the soil (e.g. Scoones and Toulmin, 1999; Tiffin and Mortimore, 2002, Mortimore and Tiffin, 2004). The likelihood of increased intensity and variability of rainfall (IPCC, 2001) and the prevalence of poverty in drylands must indicate that LD remains a serious threat now and into the future in these areas.

### ***2.3 The trend in efforts to combat land degradation***

Since the UNCCD was ratified, there have been a number of important initiatives in the effort to combat LD. At the 2<sup>nd</sup> Assembly in 2002, the GEF adopted land degradation as one of its focal areas, together with climate change, biodiversity conservation, international waters and persistent organic pollutants. Following this decision, the GEF was established as a financial mechanism of the UNCCD. This has greatly strengthened the ability of developing countries to source funds for moving forward with implementing the Convention (UNCCD, 2004). GEF funded projects focus on a number of areas including integrating sustainable land management into national development priorities and fostering partnerships with land users and other stakeholders working at all levels. Table 1 lists the project portfolio supported by the GEF under land degradation focal area.

**Table 1.** GEF project portfolio on land degradation (by 2006)

<b>Scale</b>	<b>No of projects</b>	<b>Funds (\$US million)</b>
National	41	221.976
Regional	16	95.04
Global	8	47.297
Total	65	346.313

Where there has been significant progress over the last decade is in our understanding of the underlying causes of land degradation and of the full range of indirect consequences when it occurs. This includes improved understanding of human dimension of desertification (e.g. Reynolds and Stafford Smith 2002); the ecosystem services provided by drylands (White et al, 2002; MA, 2005); and links between land degradation and climate change, biodiversity conservation and international waters (Ojima et al, 1994; Pigiola, 1999, Gisladdottir and Stocking 2005).

This decade has also seen significant success in raising the awareness of LD, its status and impacts, particularly at the international level. Some of the major awareness raising events are listed in Annex 2.

## **3. The UNCCD and its contribution**

### ***3.1 National action plans (NAPS)***

In its first 10 years the UNCCD has actively encouraged the development of National Action Plans to encourage a strategic approach to fighting desertification. These NAPS and the reports that countries party to the convention are required to submit every few years (most have now submitted their third reports) are a useful source of information on UNCCD activities and progress. To date 86 countries have submitted NAPs to the UNCCD: 34 from Africa, 26 from Asia, 21 from Latin America and the Caribbean and 4 from Central and



Eastern Europe with the majority of these submitted since 2000 (Figure 1). There are also some sub-regional action programmes e.g. for W. Africa & Southern Africa and a number of Thematic Programme Networks (TPNs) have been established.

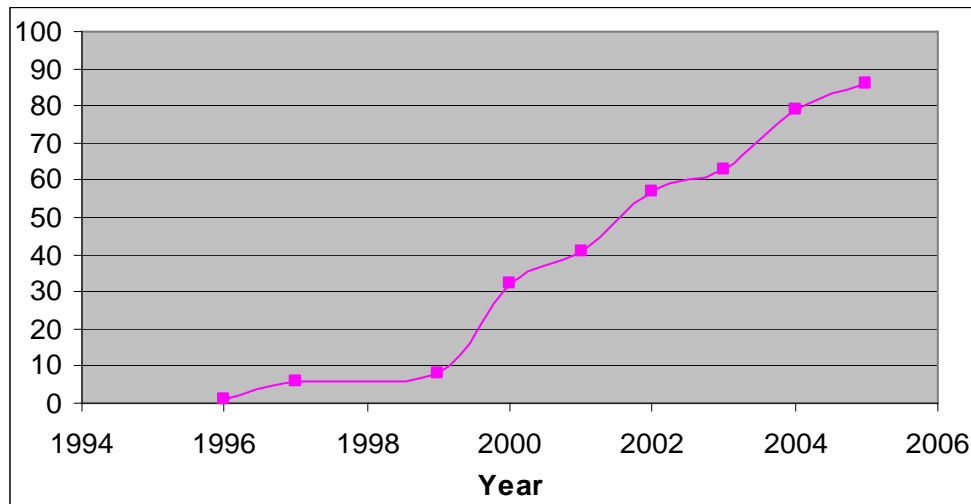
It is clear from a number of reports, including those from the UNCCD (e.g. UNCCD, 2006) that at various points during this period many countries have got quite bogged down in the process of creating quite weighty policies and partnership frameworks as part of the NAP but with very little activity on the ground. Though reasonable to plan to spend an initial period after ratification getting the policies and partnerships in place, much criticism has been levelled at the UNCCD for the time this has taken (e.g. Toulmin, 2001, 2006). It might be, as Toulmin suggests, that it was a mistake to opt for a convention for land degradation and the rather ponderous high level processes and structures it requires. Perhaps more than climate change, biodiversity or other areas addressed by conventions it is the local impacts of LD on land, productivity, food and livelihood security that are most noticeable and pressing and a priority should be to address these through action on the ground.

This phase of NAP development has coincided, perhaps unfortunately, with the already complicated PRSP development process that most countries in sub-Saharan Africa have been encouraged to go through in order to qualify for continued donor support over the last 10 years. In some cases NAPs were produced at a significant cost of time and resources only to then be put aside as the country embarked on developing its PRSP and then picked up again and re-worked and integrated into the PRSP. A participatory approach to NAP and PRSP development has been encouraged by the UNCCD and the donor community, and this takes time. We have investigated the most recent national progress reports (most Africa countries in 2004, and most of the other countries in 2006 written in English and submitted to the UNCCD) and looked at whether they have been integrated into the national PRSPs and development strategies. (Annex 3). Many countries are still working on this. Of the 54 country reports investigated, 10 do not yet have a NAP. Of those that do (40) slightly fewer than half (18) of them report that the NAP has been integrated into the relevant national strategies, 10 of them indicate the process of integration is underway, and a quarter (10) report the NAP has not been integrated. Given the resource constraints common in many of these countries it seems that this task might have been somewhat over-whelming for many and absorbed all their available UNCCD-related resources for this first 12 year period. Whilst, with hindsight it might have been better to promote a less resource demanding process for national strategy development connected with the UNCCD, we need now to look forward and ask whether NAPs are leading to more successes in combating land degradation.

This question is difficult to answer as those countries who have completed the process of NAP development and integration with national poverty and development policy have done so only recently – within the last 2-3 years. With the opening up of GEF funding for LD control projects a large number have been funded recently (detailed in Annex 3) but it is too early to say whether any of these has attained real success. If we once again think in less exacting terms about success we can say that it is likely that the UNCCD partly influenced GEF in agreeing the LD focal area in 2003 and that NAPS are starting to provide the strategic frameworks donors like to see when agreeing to fund activities on the ground (UNCCD, 2006; UNEP, 2002).

So there is some evidence that NAPs might free up funding e.g. in Morocco and Cape Verde (UNCCD, 2006). The sorts of field level activities in those case studies funded under the NAP frameworks are very similar to those seen before the existence or outside of the NAP frameworks (e.g. tree-planting, integrated nutrient management etc.). They are, however, generally better integrated into development projects or programmes, perhaps a consequence of the efforts made to integrate NAPS into PRSPs. However almost all of these projects are too young to attempt to apply our more rigorous definition of success.

**Figure 1. Numbers of countries submitting NAPs**



The 54 reports looked at were very variable but the following challenges and constraints were found sufficiently frequently to include them in a list of common issues that we comment on (*italicised*) below:

- Uncoordinated efforts within and between stakeholders including government sectors, Non-governmental organizations (NGOs) and Community-based organizations (CBOs).
- Poor networking with stakeholders that will be critical in the implementation of NAP
- Poor integration of environmental, social and economic policies

*These short-comings do somewhat undermine the hope that NAPs have been developed in a fully participatory way with all relevant stakeholders and that they are integrated or effectively linked with PRSPs.*

- Inadequate resources – financial, technical and equipment – that are needed for effective coordination of the implementation of NAP activities at all levels.
- Inadequate human resources at the national and local levels to support local efforts at implementing programmes related to combating land degradation and poverty;
- The low priority assigned by national governments to activities associated with delivery of long-term impacts, including efforts to combat desertification, relative to those delivering impacts in the short term.
- Resources inadequate to address all national priorities: the fight to combat desertification typically loses out.
- Dryland areas with their harsh environment are often politically and economically marginal, thus receive less attention
- Implementation will need considerable financial and technical support from bilateral and multilateral partners

*These concerns suggest two things. Firstly that many countries have been rather bogged down in the whole process of developing a credible NAP with inadequate resources and a great deal of additional resources will be required for NAP refinement/implementation. Secondly that, in some cases the political will was not really there to resource the exercise or give it the attention it required. Unfortunately it is likely that, as a consequence, some of the end products (the NAPs) will be of poor quality.*

- Lack of clarification regarding land tenure and processes for resolving conflicts
- Lack of infrastructure in some remote desertification areas

- Lack of any systematic benchmarks or indicators for assessing the implementation of the convention or the extent of desertification.
- Scattered sources of data, different data formats and scales of collection and poor data and information storage mechanisms.

*These points hint at some of the technical and data constraints but also at the importance of infrastructure and institutions (such as clear land tenure policies) that have been identified in section 1.2 as important drivers of success.*

Leonard and Toulmin (1999) reviewed a sample of four UNCCD country reports for GTZ. In common with our above analysis they also found them to be quite variable, exhibiting many of the shortcomings we have identified. A certain amount of fatigue with the process of developing NAPS (even in 1999!) and shortage of resources were evident. In some cases there was a lack of communication and collaboration between key players (e.g. different Ministries, donors, NGOs etc.) during the development process.

It is worth mentioning that some NAPS, particularly for larger countries are so ambitious in their plans for controlling land degradation that will require \$US billions to be implemented and this must be off-putting to donors who would like to see returns on more modest investments. This is one of the areas in which the UNCCD is problematic politically. The analysis in this paper suggests that only through adopting or aligning itself closely with a development agenda will the UNCCD achieve its environmental objectives. Yet some donors are not comfortable with the resulting perception of the UNCCD as a convention primarily for developing countries, particularly African countries and the sense that increasing resources for the UNCCD would constitute an increase in their development assistance contributions (Johnson et al., 2006).

Summarising, the NAPS, and partnerships that are the main achievement of the UNCCD to date do not come out particularly well from this analysis. In the best cases some useful partnerships have been formed along with policy for addressing LD that links well with national poverty reduction policy and acts as a framework within which donors can provide funding and different stakeholders on the ground (particularly NGOs and CBOs). Some of the success stories discussed below can be partly credited to the UNCCD and effective country NAPS. However, it is likely that in many cases NAPS have delayed ground level action, encouraged governments to try to separate out LD from other environmental and development concerns (rather than integrate it into poverty reduction and area development programmes) and provided policy that is either unworkable, disconnected from reality or no improvement on what was there before.

## **4. Success stories in land degradation since UNCCD ratification**

### ***4.1 Stories from the UN community – UNCCD and UNEP***

#### **UNCCD reports (2003 & 2006)**

The UNCCD has produced several reports on successes presenting case studies from different party countries (e.g. UNCCD, 2003; 2006). The 2003 report is typical and discussed briefly here. It lists 20 case studies (projects) from Africa, Asia and the Pacific, and Latin America and the Caribbean in partnership with NGOs, international organisations and other institutes. The detail presented is quite superficial. In some cases the projects and activities discussed arise as a result of, or are situated within, the UNCCD framework established by the National Action Plans (NAPS) and partnership agreements. There is little evidence in any of the reports that would allow the more rigorous definition of success defined in section 1.1 to be applied. Rather the indicators of “success” tend to be things like winning funding for activities on the

ground such as tree planting; water harvesting/storage devices etc. and community level involvement in the NAP development. The clarity of descriptions of what is actually happening on the ground and the precise role of the UNCCD is very variable. These reports appear to be more brief summaries for publicity purposes, not really adequate for a serious examination of success. As many of the projects had only been in existence for 2-3 years at the time of reporting it is also likely that it was too early in most cases to tell whether they were successful.

A more recent UNCCD publication compiles experiences learned from ten Africa countries (UNCCD, 2006). A framework is applied for reviewing progress and success in each country using 7 indicators that are interesting as they presumably tell us what the UNCCD today is looking for in the way of progress and success. These indicators are:

- Participatory processes involving civil society and non-governmental and community-based organizations followed
- Institutional and legislative frameworks or arrangements
- Resource mobilization and coordination, including conclusion of partnership agreements
- Linkages and synergies with other environmental conventions and, as appropriate, national development strategies
- Measures for the rehabilitation of degraded land
- Drought and desertification monitoring and assessment
- Access by affected parties to appropriate technology, knowledge and know-how.

These mostly address elements of the NAP development process, probably because this is what most party countries reviewed have been concentrating on to date.

Some of the examples discussed here are more convincing in their claims that the NAPs frameworks have been useful than in the 2003 report. To varying degrees they have: helped different NGOs link with the community and local government; promoted community-led initiatives and contributed to capacity-building in traditional leaders and local government.

Most countries covered in this report have worked hard to harmonise the NAPs with their PRSPs making it more likely that LD control activities on the ground will be tackled within broader rural development/poverty reduction initiatives e.g. one of the objectives of the Morocco NAP is to support the development of income-generating activities. This is a clear sign that, in some countries, the NAPs recognize that it is potential improvements in income and welfare as a result of more sustainable environmental management that are most likely to result in engagement with land degradation control. This only goes so far, however. There is no evidence that any of the NAPs reviewed are directly supporting improved market access or transport infrastructure. But why not if these are the most important drivers of improved environmental management?

Though there must be an element of self-promotion in this document there are signs that the NAP frameworks can help to facilitate and coordinate activities on the ground. It is still possible to be a little cynical about the added value brought by the UNCCD in some cases. It is likely that many of the initiatives presented as UNCCD activities are likely to have taken place anyway without the UNCCD, albeit in a less coordinated manner. One example from Ghana where traditional authorities and community level action (in which the church and women's groups figured prominently) was supported by the National Environmental Protection Agency. Tree lots were established and improvements in the community supply were made. However the report also mentions that the process began 15 years ago, well before the existence of the UNCCD.

Summarising, there is more evidence of some dividend from the NAPs and partnership frameworks in the 2006 report than in previous UNCCD publications though criteria used for

success are still very NAP-centred. Where there are activities on the ground it is too early to tell which if any of the case studies highlighted will remain “success” stories once funding ceases. It is encouraging that most of the LD control activities do appear to be part of broader community development projects or programmes.

### UNEP report (2002)

In 2002 there was a UNEP initiative to identify and describe in some detail success stories in land degradation/desertification control. Sixteen case studies were identified base on a set of criteria given in Annex 1.

**Table 2.** Summary of main features of four of the 16 success stories described in UNEP (2002)

Project/country	Main characteristics/activities	Indicators of success	Ingredients/drivers of success
1. Collective and Family Woodlands in Tiogo Forest Reserve, Mossi Plateau in Burkina Faso	Local community management of forest reserve. Schools, roads, health centres all supported	Improved environmental management including LD control; Self-sustaining;	Successful community based approach; emphasis on building social capital at community level; time: several decades involved; livelihood development & meeting community needs as important for improved environmental management; successful development of sustainable timber harvesting as an important source of income.
2. The Zabré women’s agro-ecological project, Burkina Faso	LD control and community development; focus on women	Impressive take up of composting and soil fertility management. Spread e.g. of composting from 25 women initially to 8,000 other farmers	Local ownership of project, particularly by women’s groups; support with new techniques for composting, agroforestry etc. Though initially soil focussed soon broadened out into livelihood development: health, savings & loans, processing of fruit and vegetables (adding value). Successful marketing of produce and processed products.
3. Desertification Control Project in São João Baptista Valley, Cape Verde	Improved river basin management that evolved over time into a more general development project within which there were soil conservation activities. Focus on women	Success in soil conservation; improvements in productivity, household incomes; post-project sustainability	Long-term funding, support for livelihood development, community based management, support for CBOs, activities included agriculture development (e.g. irrigation) and supported diversification into cash crops; integrated river basin management approach. Gradually became more locally owned.
4. SOS Sahel Community Forestry Project in Ed Debba, Sudan	Aimed to prevent desert encroachment into productive agricultural land along the Nile basin	Encroachment reduced/halted, productivity of land increases, income increases, self-sustaining.	Significant initial funding; support with new technologies for shelterbelts and dune-fixing; strong emphasis on social development as well as improved environmental management; significant community participation and strong economic incentive to protect high quality agricultural land.

Details of four of the case studies representative of this report have been summarised in Table 2 and some similarities are evident:

- Most would satisfy the “rigorous” definition for success (section 1.2) in that impacts were usually across the whole community, self-sustaining and with evidence of spread.

- In all case studies looked at the successes in LD control occurred within broad development/environmental management projects that usually had poverty alleviation and social development as their primary aims. In this way the projects were addressing poverty and development constraints as the root causes of environmental degradation and we believe this was fundamental to their success. Typically these projects emphasised improvements in agricultural productivity and house-hold incomes for land-users. In some cases the remit of the project was broader including support with provision of education, medical and other services.
- Whilst it is not the case that all successes were near to large markets in most cases some kind of market or marketing-related support is highlighted as important for the success e.g. development of a sustainable timber market in a Burkina Faso example and the support given with fruit and vegetable processing in Zabré (also in Burkina Faso). In a Sudanese example the work aimed to prevent dunes encroaching onto high value land that was already able to generate substantial cash crop incomes (in this example from selling dates).
- There was clearly a supportive and enabling policy environment in every case and much emphasis was given to community participation and local ownership of the projects, if not initially then at least in the later phases of project activity.
- In every case looked at women were either important in initiating the successful activities or women and or women's groups were targeted for support and this contributed greatly to the success of the project.
- None of these successes can be attributed to the UNCCD as most took a long time with significant funding over an extended initial project period.

Most of these points map quite closely with the three drivers of success identified at the beginning of this paper in section 1.2.

#### ***4.2 Other detailed success stories from the literature***

**Reij and Steeds (2003)** reviewed several dryland development studies from East and West Africa (N.B. their focus was not solely on LD). They note that well-formed policy, strong efficient institutions with capacity to support land-users and mechanisms for fostering and disseminating technical innovation are all required for success in dryland management. They also argue that success in community development is more likely when part of what they call “long-term area development processes”. This is similar to the finding in the UNEP study discussed above and also supports further the hypotheses in section 1.2 that LD is most likely to be successful when part of a broader development support process. They also believe that successes at the project level are partly dependent on the commitment of long-term funding and note that with the Machakos project, this long term support was an important factor. Again, this was also the case in the UNEP reported success stories discussed above.

Reij and Steeds suggest that on-farm water harvesting has big potential, can be relatively easily implemented with attractive and more or less immediate yield returns. It is of note that one of the most successful pieces of research to emerge from the 15 year long DFID Natural Resources Systems Programme was a set of rainwater harvesting techniques developed and successfully scaled up in dryland areas of southern Tanzania (Hatibu et al., 2003).

Reij and Steeds were able to look at the economic rates of return (ERR) in a number of projects. These were viewed as an indicator of success if greater than 10%. At a certain ERR (perhaps 20%) spontaneous diffusion of a technology would be expected. It is rare, however for there to be adequate data available to construct ERRs for LD control projects so no attempt has been made to apply this widely as an indicator in this paper.

**Mortimore (2005)** reviewed a number of success stories, again in dryland area development from West Africa. The objective of this study was to look for replication of Machakos-type success (positive linkage between environmental management and population growth) in other areas. Three success stories were examined and particularly interesting was the success seen in the control/reversal of LD in Maradi Department, Niger. This area is not close to a large urban centre nor does it benefit from high population densities that create a strong pressure for change (in addition to a large internal market). In this case some well thought through and supported interventions from a rural development project were key e.g. support for the practice of protecting economically valuable trees that were regenerating naturally, a practice known as *défrichement amélioré*. Mortimore argues that the success of this acted as a catalyst for a raft of other improvements in environmental management (including land rehabilitation), production and local livelihoods (e.g. livestock numbers, increased use of technology for crop cultivation etc.). Perhaps this example does challenge the view that, above all else, some form of improved market access is required for success in LD control.

**The World Overview of Conservation Approaches and Technologies (WOCAT)** has just published (November 2006) a description and analysis of 42 case studies of success in soil and water conservation, half of which are situated in drylands (WOCAT, 2007). This work is very technically focussed on the detail of the practice, generally giving rather limited information on the broader context in which the success is situated. However, many of the successful practices are directly linked to rural development projects or initiatives and WOCAT pays a lot of attention to the costs and benefits associated with implementing a technology. In many cases a large part of the benefit from improved soil and water management is in the form of additional cash income from marketing the increased production and this implies that adequate access to markets usually exists. It is not always clear who is involved in the successes described: a cross section of farmers or just the wealthier larger land-holders (the latter is suggested in some cases)? A number of the successes are clearly associated with the activities of women and women's groups e.g. composting in Burkina Faso. This work suggests that although success can be seen across a wide range of different systems, many of the drivers of these successes are the same as the ones already discussed here: a broad development focus, access to markets, capacity to support land-users, enabling policy environment etc.

#### ***4.3 Success in gaining GEF funding***

In 2003, the Global Environment Facility (GEF) was designated as a financial mechanism of the UNCCD. GEF funding covers three inter-related types of intervention: on-the-ground investments, capacity building, and targeted research (summarised in Table 3). Whilst only five projects (and 3.5% of the total funding) were explicitly focussed on supporting NAP development much NAP development/harmonization activity clearly goes on within the capacity building component e.g. integration of NAPs into national development plans (PRSPs etc.). A total of 65 projects with total funding of \$US 364.313 million were supported up to the end of 2006. The targeted research projects are included in the capacity building category as it is difficult to separate them and many of the former do focus on NAP development. It is also of note that some on the ground investment projects also have capacity building components.

**Table 3.** Portfolio of GEF projects in the LD focal area

Types of Projects	Number of projects	%	Funding of projects \$US M	%
On the ground investments	47	72	250	69
Capacity building	18	28	114.3	31
<i>Targeted to NAPs, and national reports</i>	5	8	12.8	3.5

Source: <http://www.gefonline.org/projectList.cfm?focalSearch=L>

Some examples are summarised in Box 2. These have been selected to illustrate the range of work that has been funded. The LADA project has already been discussed but it is interesting to note once again that much of the funding is going to help with NAP preparation and associated activities.

### **Box 2. Examples of GEF funded projects in the LD focal area**

#### i) Supporting NAP implementation in Cuba (approved in Nov 2005)

This project has two main objectives: (i) to provide support for mainstreaming SLM principles into national, regional and local planning frameworks and building capacity at these different levels; (ii) to implement site-specific interventions demonstrating practices for the prevention of degradation and the conservation and rehabilitation of ecosystem integrity.

#### ii) Supporting capacity building for the elaboration of national reports and country profiles by African parties to the UNCCD (approved June 2004)

The objective of this project is to support the African country Parties in their efforts to prepare and/or elaborate their NAPs, again with the expectation that local capacities and partnerships will be enhanced.

#### Supporting Capacity Building for the Third National Reporting to CRIC-5/COP-8 (approved March 2006)

The objective of this project is to assist 55 countries (in the Asia, Latin America and the Caribbean, and Europe regions) to enhance their capacities to prepare their third national reports to the UNCCD CRIC-5 and COP 8 in a participatory and self-evaluative manner.

#### Land Degradation Assessment in Drylands (approved Nov 2004)

The principal objectives of the LADA project are two-fold: (i) develop and implement strategies, tools and methods to assess and quantify the nature, extent and severity of land degradation and the overall ecosystem resilience of dryland ecosystems at a range of spatial and temporal scales; and (ii) build national, regional and global assessment capacities to enable the design and planning of interventions to mitigate land degradation and establish sustainable land use and management practices.

## **5. Lessons learned, looking to the future**

### *Drivers of success?*

This paper began by proposing three drivers as key for success in controlling land degradation/desertification:

- i. Improved access to markets;
- ii. Importance of incorporating LD control activities in broader community/area development processes and
- iii. Requirement for capacity building and a supportive policy environment.



In the “success” studies reviewed all of these but particularly the first two were common enough to be considered as generic. In practically every case seen LD control was part of a programme of support that prioritised social/community development over improved environmental management or at least gave equal weight to both. Few, if any of the successes uncovered resulted from a sole or primary focus on LD control. The UNCCD has invested greatly in the development of NAPs and the integration of these into national PRSPs. This suggests they have accepted the importance of targeting poverty as a major underlying driver of land degradation. However this does present a difficulty as there exists a convention (and GEF funding etc.) explicitly responsible for addressing land degradation and yet it seems that if the projects and activities supported by the UNCCD are to succeed then their main focus must be development oriented with the hope that LD control will follow as an indirect or secondary benefit. This requires quite a bold confident strategy in the future from the UNCCD but also acceptance from donors that this is the way forward. Certainly the partnerships with donors, NGOs, CBOs and other development stakeholders that the UNCCD has been prioritising will be important.

The role played by women in combating desertification has been conspicuous in the case studies reviewed here. The text of the UNCCD includes statements acknowledging the importance of gender equity and support to women in the fight against desertification. There is little clear evidence of this in the UNCCD-influenced projects reviewed here and yet women-led initiatives or support specifically targeted to women were important in many of the success stories reviewed here. This should not be surprising given that in many communities it is the women who are mainly responsible for managing the fields. In some cases these initiatives enabled women to address land management more effectively by introducing labour-saving measures (unrelated to soil management) that freed up some of their time.

### ***UNCCD success to date?***

The quality and success of the NAPs is clearly very variable. Lack of adequate resources and political will; fatigue with the length it has taken many party countries to develop them; the disconnect sometimes evident between the NAP and reality on the ground are all factors that undermine their quality. Whilst NAPs, partnerships and frameworks for LD activities cannot really be considered as successes in combating desertification, they may help to generate a robust policy framework within a coordinated set of activities can take place. However, it seems that all too often the process hasn't gone that well making it less likely that these new frameworks will really deliver new or more coordinated approaches on the ground. They may help with accessing funds for LD control initiatives, however, as we have seen with the release of GEF funds in 2003 but unfortunately it is really too early to tell if this is going to lead to more success on the ground. Most of the real successes reviewed here – those that measure up to the more rigorous definition outlined in section 1.2. have little or nothing to do with the UNCCD.

Two specific opportunities are highlighted here for the UNCCD to embrace in the future:

**Soil fertility.** A greater acknowledgement of soil fertility decline as perhaps the most pervasive form of LD might be helpful here as productivity and food security are of major concern to land-users, more so than erosion, particularly if soil loss is occurring on marginal land.

**Linking with the UNCCC.** There has been increased interest recently in trying to better exploit the areas of overlap between the UNCCD and other conventions, particularly those on climate change and biodiversity. The clearest potential is with the first of these the UNCCC and there is no evidence, even in the most recent reports, of activities examined for this review that much has been made of these

linkages yet. There is a body of work, much of it by Lal (e.g. 1999) that claims there are huge (win win) benefits to be had from promoting LD control, particularly in drylands. Much more could be made of this by the UNCCD.

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## Annexes

### *Annex 1: Frameworks for indicators of success in combating land degradation and desertification.*

1. The UNEP's Initiative on Success Stories in Land Degradation/ Desertification Control (2002) used the following criteria for evaluating success:

Land use	Social and economic aspects	Policy related issues
<ul style="list-style-type: none"> <li>• Appropriateness of the innovations;</li> <li>• Effectiveness and long-term durability of soil and water conservation measures;</li> <li>• Suitability of actions to protect and rehabilitate the vegetation cover and measure of its biological diversity;</li> <li>• Level of use of biological methods to improve soil fertility and control pests;</li> <li>• Innovations that have significantly improved water availability and quality;</li> <li>• Sustainability of exploitation of the natural resource base and of the improved livelihoods of the community.</li> </ul>	<ul style="list-style-type: none"> <li>• Level of economic and social benefits accrued;</li> <li>• Cost effectiveness in labour time and maintenance of innovations;</li> <li>• Community involvement in activity planning and implementation;</li> <li>• Community contribution to activities in labour time and inputs;</li> <li>• Rate and degree of adoption of innovations at community level;</li> <li>• Social capital enhancement;</li> <li>• Contribution to strengthening of local social structures;</li> <li>• Extent of adoptions of approach innovations and by surrounding communities;</li> <li>• Sustainable benefits accruing to the wider community in terms of infrastructure, facilities, organizations and social development;</li> <li>• Project contribution to community empowerment in economic and social spheres;</li> <li>• Degree of community commitment to sustainable resource development e.g. taking ownership and responsibility for resource management;</li> <li>• Rate of progress in land adjudication and resolving land tenure issues and the</li> </ul>	<ul style="list-style-type: none"> <li>• Degree of government support and commitment for project activities and their replication;</li> <li>• Establishment of enabling institutional frameworks at local level;</li> <li>• Effectiveness of existing institutional frameworks in resolving land and tenure issues;</li> <li>• Degree of adoption of public policy that decentralizes control and eliminates undue interference in the individual's management of his/her natural resources;</li> <li>• Degree of influence over positive changes in national land use policy development</li> </ul>

	effect on local community action; • Project effects on local shelter, sanitation, water supply and health	
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2. Mortimore (2005), based the experience of Machakos district, Kenya, proposed the following criteria for defining success dryland development (not just LD control) in West Africa:

<b>Domain</b>	<b>Outcome</b>	<b>Indicators</b>
Ecosystem management	Stabilization or reversal of degradation	Soil erosion controlled; Soil water holding-capacity; improved; Nutrient losses minimized or compensated; Trees managed sustainably; Useful biodiversity maintained
Land investments	Viability and sustainability in economic and/or social terms	Private farm investments; Cross-sectoral financial flows; Acceptable economic rate of return on public investments
Productivity	Maintenance or increase	Stable or increasing crop yields or livestock; production per hectare (ha); Increasing value of output per ha;
Incomes and welfare	Maintenance or increase in real terms	Increasing market participation; Increasing value of output per capita; Strengthened access to off-farm incomes; Rising achievement in education; Asset accumulation on- and off-farm

3. In a report commissioned by the Global Mechanism, Reij (2003) used following criteria in selecting success project:

- long-term increases in productivity;
- increases in per capita income;
- increased drought resilience of rural production systems;
- increases in biodiversity;
- for particular projects, economic rates of return of 10 % or more.

Reij (2003) noticed the further increase in success stories in the 1990' due to:

- increased involvement of land users in all stages of the project cycle;
- the development of new soil and water conservation and water harvesting techniques for drylands;
- new approaches to research and extension;
- innovations in community-based natural resource management.

## ***Annex 2: Awareness raising on global land degradation***

<b>Event</b>	<b>Details</b>
Learning to Combat Desertification – A Teacher’s Guide (1997)	Published by UNCCD in cooperation with UNESCO (1997), this Environmental Education Kit on Desertification provides material for improving the level of knowledge among school children on the phenomenon and process of desertification worldwide.
Global Alarm: Dust and Sandstorms from the World’s Drylands (2001)	Dust storms are the perhaps the most direct experience of desertification to people who living away from the sites where land are degraded. This collection of essays document the nature, extent, causal factors associated with the severe sand and dust storms and its impacts on lives and livelihoods of millions of people.
Promotion of Traditional Knowledge (2005)	This publication by UNCCD’s Committee on Science and Technology (CAST) aims to contribute to an understanding of traditional knowledge and how its application can minimize land degradation and desertification in arid and semi-arid zones and dry sub-humid zones.
International Year of Desert and Desertification (IYDD, 2006)	Declared by UN General Assembly, the International Year of Deserts and Desertification (IYDD). The IYDD is aimed to support the implementation of Agenda 21, the Plan of Implementation of the World Summit on Sustainable Development, and raise public awareness (Resolution adopted by the General Assembly, A/RES/58/211)
Ten African Experiences (2006)	This publication was initiated and compiled by the secretariat of the United Nations Convention to Combat Desertification (UNCCD) as part of a Global Environment Facility (GEF) regional project entitled “Supporting Capacity Building for the elaboration of national reports and country profiles by African country Parties to the UNCCD”, co-funded by the World Bank (implementing agency) through the Global Mechanism of the UNCCD and executed by the International Fund for Agricultural Development (IFAD).
Women of the Earth: Nurturing the Future (2006)	Published by the Secretariat of the UNCCD in cooperation with the Government of Switzerland (2006). Through case studies and stories, this booklet highlights the role of women in combating desertification and maintaining household livelihoods.
Global Deserts Outlook (2006)	This is the first thematic assessment report in the UNEP’s Global Environment Outlook (GEO) series. As a UNEP’s contribution to the International Year of Deserts and Desertification in 2006, the report aims to help raise global public awareness of the state of the world’s deserts.
Ten Africa Experiences: Implementing the UNCCD in Africa (2006)	Published by the Secretariat of UNCCD, this collection shows some fruitful experience from various African sub-regions, and highlights a need for a multi-faceted approach that can and must be adopted in order to ensure sustainable development.
Make a Difference - Stories from communities (2002)	Published by the UNCCD Secretariat, the stories collected in this booklet are the examples of how local communities in different parts of the world sought to tackle the problems of land degradation and desertification in partnership with NGOs, international organisations and other institutions.

**Annex 3: UNCCD NAPS and GEF funded land degradation activities**

<b>Country</b>	<b>Year of report</b>	<b>NAP integration into national poverty reduction strategy</b>	<b>NAP integration into national development strategy</b>
<b>Africa</b>			
Botswana	2004	No	Yes
Egypt	2004	Currently underway	Currently underway
Ethiopia	2004	No	Currently underway
Eritrea	2004	Currently underway	Currently underway
Gambia	2004	Currently underway	Currently underway
Ghana	2005	Yes	Yes
Kenya	2004	Yes	Yes
Lesotho	2004	Yes	Yes
Malawi	2004	Yes	Yes
Mauritius	2004	No	No
Mozambique	2004	Currently underway	Currently underway
Namibia	2004	No NAP prepared yet	No NAP prepared yet
Nigeria	2004	Currently underway	Currently underway
Seychelles	2004	No NAP prepared yet	No NAP prepared yet
Sierra Leone	2004	No NAP prepared yet	No NAP prepared yet
Sudan	2004	NAP drafted for further discussion	NAP drafted for further discussion
Swaziland	2004	Yes	Yes
Tanzania	2004	Yes	Yes
Uganda	2004	Yes	Yes
Zambia	2005	Yes	Yes
Zimbabwe	2004	No	No
<b>Asia</b>			
Bangladesh	2006	NAP being approved	NAP being approved
Bhutan	2006	No NAP prepared yet	No NAP prepared yet
China	2006	Yes	Yes
DPR Korea	2006	NAP being approved	NAP being approved
Fiji	2006	No NAP prepared yet	No NAP prepared yet
Indonesia	2006	Currently underway	Yes
Iran	2006	Yes	Yes
Kazakhstan	2006	No	Yes
Kyrgyzstan	2006	Yes	No
Laos	2006	Yes	Yes
Lebanon	2006	No	Currently underway
Myanmar	2006	No	No
Pakistan	2006	Yes	Yes
Philippines	2006	Currently underway	Currently underway
Sri Lanka	2006	Yes	Yes
Viet Nam	2006	Yes	Yes
<b>Latin America and the Caribbean</b>			
Dominica	2006	No	No
Grenada	2006	Currently underway	Currently underway
Guyana	2006	Yes	Yes
<b>Northern Mediterranean</b>			
Italy	2006	N/A	Yes
Turkey	2006	Yes	Yes
<b>Central and Eastern Europe</b>			



Albania	2006	No	Partly
Armenia	2006	Yes	No
Georgia	2006	No	No
Hungary	2006	No NAP yet	No NAP yet
Latvia	2006	No NAP yet	No NAP yet
Macedonia	2006	N/A	No
Russian	2006	No NAP yet	No NAP yet
Slovak	2006	No	No
Slovenia	2006	No NAP yet	No NAP yet
<b>Other affected country Parties</b>			
Canada	2006	No NAP yet	No NAP yet
Israel	2006	No NAP yet	No NAP yet
USA	2006	No NAP yet	No NAP yet
Source: National Reports submitted to UNCCD, <a href="http://www.unccd.int/">http://www.unccd.int/</a>			

***Annex 4: List of acronyms used in the paper.***

ASSOD	Soil Degradation in South and Southeast Asia
DFID	UK Department for International Development
ERR	Economic Rate of Return
FAO	The Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
GEO	UNEP Global Environmental Outlook
GLASOD	Global Assessment of Human Induced Soil Degradation
GTZ	German Technical Cooperation
LADA	Land Degradation Assessment in Drylands project
LD	Land degradation
NAP	National Action Plan for implementation of UNCCD activities
PRSP	Poverty Reduction Strategy Paper
TPN	Thematic Programme Network
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNU	United Nations University
WOCAT	World Overview of Conservation Approaches and Technologies