UNITED NATIONS
NATIONS UNIES

Discussion Paper

UNCCD Policy Brief on Migration

Managing environmentally-induced migration in drylands: The Win-Win Strategy

A woman in a condition of dehydration and weakness is lying on the beach in Yemen after swimming to shore from a smuggling boat. The perilous crossing from Somalia has lasted two days.

UNHCR 2007

August 2009

CONTENTS

This document was prepared by the UNCCD secretariat. Drafting responsibilities: Domoina Randriamiarina. Reviewers: Sergio A. Zelaya, Leslie E Torres, Douglas Pattie and Koko Warner (UN University)

Executive summary

Human activities have resulted in unprecedented phenomena and severe impacts for the 21st century such as land degradation, natural resources scarcity, climate change, and a rapid decline in biodiversity. These alterations engender secondary effects such as political conflicts, disputes over resources, social disruptions and sudden shocks of catastrophic weather events which are becoming more frequent in critical regions of the world, particularly in drylands; and exacerbate threats for human, national and international security.

Often powerless in the face of the unpredictable, but more often uniformed, the **vulnerable populations** mostly afflicted by these man-made adversities sometimes have no alternative other than to **migrate in search of safety and food security as a survival mechanism or** of a better environment to sustain their livelihoods **as an adaptation strategy**. This resettlement is not an easy process and might be compromised by the receiving area's willingness to integrate migrants.

Understood as a response mechanism towards poverty, the international community has developed an arsenal of strategies to address the manifold indirect root causes of migration, hence mainly oriented toward reducing a population's poverty and vulnerability. Despite these efforts, migration continues at its initial pace with the depopulation of rural areas increasing while generating congestion in cities; on the other side, developed countries are facing huge flows of illegal immigrants.

Within the context of drylands, **the approach to targeting the root causes of migration have been mistaken**. Migrants, themselves, have always explained their mobility to be linked to untenable chronic poverty prevailing in their homeland. Poverty is indeed a determinant of migration but not its root cause. The heart of the matter is in fact more basic: their lands are degraded and productivity is declining along with population's income. **Migration has an environmental dimension**. Statistical studies have confirmed that the variables of **'soil quality'** and 'availability of suitable water' **have the most significant effects on migration flows.** The "common borders between two countries" facilitate the mobility between them (Tafifi & K Warner 2008). Some 60 million people in the Sertão region in the northeast of Brazil for instance have migrated from rural to urban areas within Brazil between 1970 and 2005 due to regular drought periods and the dry season that hits all agricultural activities (Refugee Studies Centre 2008). During the last three decades, 36% out of the 5,076,494,541 affected people from environmental disasters were victims of drought (Guha-Sapir, Debati 2004).

Linkages between desertification, land degradation and drought (DLDD) and migration are already recognised[1] by the international community and often tend toward being mutually reinforcing human-environment processes. Environmental degradation depletes the livelihoods of inhabitants and engenders a migration pattern, which by itself is a recognised vector of anthropogenic desertification at the arrival place, contributing to a vicious circle.

Considering the extent of DLDD and its critical related issues, the **United Nations Convention to Combat Desertification (UNCCD) adopted in 2007 the 10-Year Strategic Plan (2008 –2018) with its first strategic objective "to improve the living conditions of affected populations in drylands."** Concrete expected outcomes are formulated under Operational Objective 2 which requires the establishment of a policy framework enabling promotion of solutions to combat DLDD and improve biophysical and socio-economical conditions (UNCCD 2007). In addition, the UNCCD benefits from its comparative advantage of being a unique process and conceptual intervention platform to address the challenges of environmental stress, migration, conflict prevention and the security-environment interlinkages.

DLDD directly affects people at the local level. The adaptive strategies in response to migration however have a national, regional and international scope, which requires a strong partnership among all stakeholders. Furthermore, what makes the migration issue critical today is that lands have become extensively more degraded during the past two decades, with an increase to 24% of degraded land surface in 2008 compared to 15% in 1991 (Z.G.Bai et al 2008). Future prediction are for a worsening situation, particularly with people being much more mobile globally and with climate change intensifying inter-annual variability resulting in upward trends for drought, land degradation and desertification (DLDD).

Therefore, policies to moderate migration induced by DLDD should focus on:

- Combating DLDD as principal cause of migration
- Developing preventive, disaster reduction measures against undesired socio-economical consequences, as far as possible.

To this end, the following components can serve as a basis for action by stakeholders at all levels (UNCCD 2008): (i) mainstreaming counter-measures to DLDD and its consequences in policy agendas; (ii) improving knowledge and fostering increased scientific inputs on the interaction between migration and DLDD as well as on DLDD risk management; (iii) partnership building for research; (iv) raising stakeholder awareness; (v) promoting incentives-based mechanisms for sustainable land management (SLM); (vi) enhancing migration as a DLDD adaptation strategy; (vii) identifying financial mechanisms that support relevant actions and (viii) preserving human rights in drylands.

[1] At various conferences worldwide especially the Désertif' Actions conference held in September 2006 in Montpellier, France and the two Almeria conferences held in 1994 and 2006 in Spain, the relationship between DLDD has been examined.

Understanding the scope of migration induced by DLDD

The human-environment DLDD process destabilizes society. Already faced with environmental crisis, inhabitants in drylands, while generally dependent on rain fed agriculture or pastoralism, are used to developing adjustment and coping responses such as: change of dietary pattern, food/money borrowing from friends, prospects for agricultural work, seasonal migration, selling of small cattle or a piece of land and other practices. Nonetheless, due to a worsening of DLDD and climate change, the **coping mechanisms become unmanageable and can be rapidly exhausted.** This often compels people to change their livelihoods from pastoralism to agro-pastoralism for example or to migrate to a more productive or distant place that allows basic livelihood sustenance. The traditional seasonal migration pattern itself is slowly losing its viability. **Migration patterns now depend on the magnitude of environmental stressors**. During a period of severe drought, a population may migrate for a short-term with the possibility of returning to their lands. Coping with slow onset DLDD triggers an increasing number of rural exodus and travel across national borders for a longer term as responses. As an illustration of domestic migration, within 25 years, the proportion of Mauritania's people living in the capital, Nouakchott, rose from 9 % to 41 % ($UNCCD_b$ 2008).

Migration results in disproportion in gender distribution in communities. Left behind by spouses who migrated in search of "greener pastures"; women have taken over as agricultural workers, phenomenon called "**feminization of rural world"** or "agricultural feminization". In developing countries, women account for approximately 70 % of the agricultural labour force and produce 60 to 80 % of food for communities (UN Secretary General 2005). Subsequent to this **loss of human capital in rural world**, women-headed households are forced to change the distribution of crops and farming systems, which often results in lower production and, in some cases, leads to malnutrition and food insecurity. On the other side, **youth in the rural world are experiencing marginalisation.** They rarely have access to fertile land, employment or education with poor health inducing a high prevalence of poverty in this group. Therefore, they also migrate from rural drylands to urban areas or internationally in search of low-wage employments with the risk of being engaged in hazardous forms of works, especially for young women. Youth represents 15% of the global migrants (K Touray 2006).

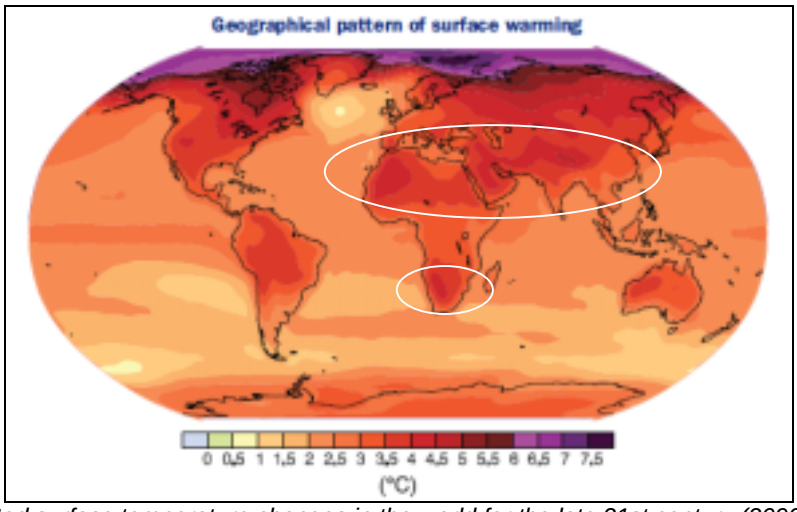
Consequences of DLDD and climate change can force approximately 135 million people to migrate in the future (Almeria 2006). DLDD currently affects 250 million people particularly in Asia, the Sahel, North and Central America (Almeria 2006). The phenomenon will threaten nearly 1.2 billion people in 110 countries throughout the coming decades (Almeria 2006). Moreover, the Intergovernmental Panel on Climate Change (IPCC) estimated that temperatures should rise by 5 to 7 degrees centigrade in the deserts and rainfall decrease by 5% to 15% in the last thirty years of this century (IPCC 2007). Considering the degree of social vulnerability, affected populations might react differently towards the changing environment with certain vulnerable families having to migrate whereas others might have more assets and resources to cope with the pressure. Nevertheless, communities in drylands, in particular those living in developing countries, are ranked among the world's poorest and one of the fastest growing populations; for that reason, migration options may be adopted by an unpredictable number of populations unless policies to improve their resilience to stressors are developed. Included in the currently debated concept are so-called "environmental refugees". **People leaving their areas due to land degradation/desertification are not granted any particular humanitarian protection for the time being**. Risking their lives crossing countries borders with no legal justification, they cannot be considered as internally displaced persons or refugees unless there is evidence of strong weather events. In this last context, the United Nations High Commissioner for Refugees (UNHCR 2002), estimates approximately 24 million people around the world have fled their homes because of floods, famine and other environmental factors.

Unplanned migration may contribute to conflict that in other conditions could be assigned to sustainable development and international cooperation. In the early 21st century, the Commission on Human Security has perceived the DLDD, famine and related distress migration as human security threats (Hans Gunter et al. 2009). A high level of in-migration increases the pressure along the route to and in the receiving areas which eventually over-filled and become unable to support in-flow of migrants. This increases pressure on natural resources, on the outlying productive areas of cities, on urban services (sanitation, housing etc.) leading to a competition of resources and an environmental degradation in turn.
These **rivalries can cause tension, hostility and sometimes violence among ethnic groups**, as cruelly illustrated by the long lasting tribal conflict in Darfur (Refugee Studies Centre 2008). At the international level, security issues erupt when local residents believe that migrants threaten nationalist and cultural values (M Leighton 2007).

African and Asian people will be the most vulnerable to DLDD and climate change and will further push migration in the future. This calls for greater attention of preventive and preparedness measures as there will be a global, regional and local need to receive and resettle these inflows of migrants. **Taking into account the (i) extent of DLDD undermining these two regions, (ii) the low adaptive capacities on projected climate change**

impacts in African countries, and (iii) the significance of population density in Asia, the occurrence of DLDD-induced migration from these areas will be an unprecedented global phenomenon.

The IPCC estimates that by 2080, the proportion of arid and semi-arid lands in Africa is likely to increase by 5-8% (IPCC 2007). In some African countries, yields from rain-fed agriculture could be reduced by up to 50% by 2020. Access to food, is projected to be severely compromised. The problem appears more severe in sub-Saharan Africa, the Sahel and the Horn of Africa, particularly in Niger, Sudan, Ethiopia, Malawi and Zimbabwe (E Cameron 2008). Some 60 million are estimated to eventually move from sub-Saharan Africa towards Northern Africa and Europe by the year 2020 ($UNCCD_a$ 2008). It is important to mention that in the mostly high-risk countries in Africa, the shortage of arable lands coincides with lack of freshwater and political instability (Uwe Holtz 2007). The following map shows that the most vulnerable drylands are prone to surface temperature changes for the late 21st century (2090-2099).

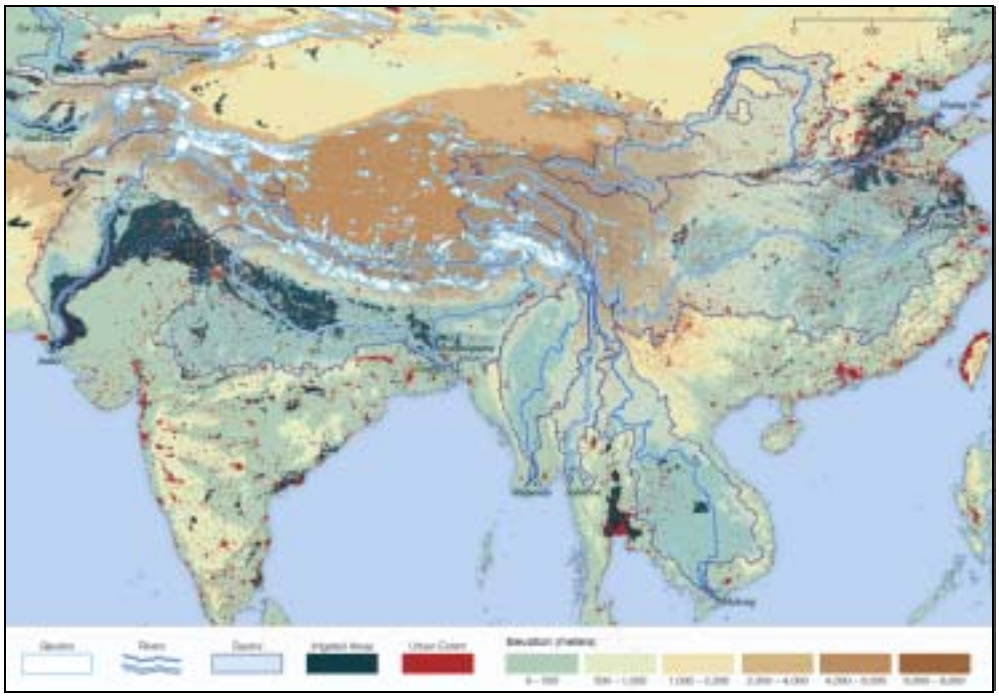


Projected surface temperature changes in the world for the late 21st century (2090-2099) (Source IPCC 2007)

The situation will be most critical in Asia as it is one of the world's most populated regions. DLDD will seriously undermine agricultural crop yield in this area (E Cameron 2008). Additionally, important flooding from the Himalaya glaciers melting (due to global warming), will endanger farmlands located in river deltas and freshwater availability in Central, South, East and South-East Asia, particularly in large river basins, which are projected to decrease by 2050.

This following map depicts glaciers in the Himalayas and the major rivers that flow from them. These rivers support large irrigated areas (dark green) and major population centers (red), yet the glaciers that feed them are in retreat. Reductions of river flows will affect irrigated areas, but the potential for migration out of agricultural areas is hard to predict, and will depend on

adaptation responses such as dam construction and more efficient irrigation technologies. Broader impacts on food security for this highly populous region could be significant. In the absence of diversification and adaptation/mitigation measures, as water resources gradually diminish agriculture livelihoods will become unsustainable, and people may be forced to leave (K Warner et al 2009).



The costs of forced migration outweigh its benefits

As an adaptation strategy, migration generates some valuable benefits that should be highlighted. Among other opportunities, it has been observed that out-migration alleviates demographic burden and allows degraded environments to recuperate. This enables emigrants coming back with new skills to diversify livelihoods and thus reduce their reliance on natural resources, or to return with know-how on innovative land use methods, with savings that allow coping during lean periods. Sending remittances to improve lives of those remaining in villages continues as a major economic factor. Migration also plays an important role in co-development of countries of origin and hosting countries. In 2007 for instance, US$251billion out of the US$ 337 billion worldwide remittances were sent to developing countries (IOM 2009); which represents almost twice as much as the Official Development Assistance received in these countries. From the hosting countries perspective, migrants constitute an important low-wage labour supply, including some highly skilled and qualified workers.

Learning from past failures

The barriers to overcome in order to reverse the DLDD trend and its harmful impacts have been identified to be mainly the lack of effective management policies (Zafar Adeel et al 2006). Recognising the extent and costs of the following failures will hopefully drive better policies in the future.

Populations in the drylands were politically marginalized and societal issues were inadequately addressed. Communities in drylands are provided with low social infrastructures such as education, health, access to land and livelihood diversifications to alternate with agricultural practices. These facts lead to full reliance on natural resources. In many cases, dryland populations were the **least represented in formulating national strategies and action programmes** to combat desertification and reduce poverty. Societal solutions have not always been considered. For example, policy makers have often overlooked conciliation on whether policy options were built on local customary patterns and arrangement for grazing and mobility or not.

Furthermore, due to **failure in formulating integrated policy approaches**, and **improper synchronisation of priorities in agendas** (usually in favour of economical development), whether implemented at the national or international level, the societal issues have been insufficiently addressed. It has been observed for example, that several National Action Programmes (NAPs) are mostly oriented on combating DLDD without much regard to policies that address population conditions and implications of such proposal policies. Population movements that take place in reaction to increasing desertification are, for example, inaccurately recorded or not even assessed at all with a view to addressing the issue efficiently. Available literature shows there is no comprehensive and systematic scientific assessment of the social science research completed on the potential outcomes of DLDD and climate change (Hans Gunter 2009).

An insufficient awareness and dissemination of information, on DLDD and its interaction with societies and other ecosystems, among decision-makers and the communities was observed. Subsequently, drylands already fragile ecosystems are being degraded by abusive exploitation of natural resources, over-cultivation, over-grazing, deforestation and poor irrigation practices. When land degradation and desertification occur, it is often too late, inhabitants start to endure decreased agricultural and livestock productivity and depletion of livelihoods forces them to migrate. Despite of existence of some early warning system on drought in some regions (WMO 2006), the unavailability of an early warning system on land degradation and desertification in many localities weakens population preparedness. Likewise, in the context of DLDD, the national and international emergency response mechanisms clearly appear to be organised slow in confronting disruptions and react to disasters and out migration instead of providing early prevention and preparedness policies.

Research on preventing DLDD-induced migration is still challenging. Furthermore the use of available scientific knowledge when formulating public policies is missing. Monitoring drought presents some challenges such as (i) the collection of climatic and hydrologic data which is fragmented between many agencies or ministries in most countries; (ii) inadequacy of data sharing between government agencies and research institutions as well as between meteorological and hydrological data networks; and (iii) the unreliability of data and the high cost of data which limits their application in drought monitoring, preparedness, mitigation and response (WMO 2006).

With regards to slow onset land degradation, studies conducted so far have revealed **difficulties in defining early warning indicators and thresholds of a definitively degraded environment** that trigger migration. These difficulties can be explained for at least two reasons (Mélanie Requier-Desjardins 2006):
(i) Unique and complex environmental conditions could not be the same and depend on the specific carrying capacities of areas; different farming activities have been used by inhabitants including agriculture or livestock breeding; and some areas may support higher population densities than others with the same climatic and soil conditions.
(ii) Possible interventions to improve economic conditions, the restoration of land or other coping mechanisms may allow dwellers to stay in the rural environments.

All of these unanswered questions weaken populations and provide policy-makers with limited guidance, thus paving the way to worsening DLDD and subsequently to migration. Moreover, due to the lack of financial autonomy, scientists in developing countries have almost no opportunities to influence policies and legal frameworks (Zafar Adeel et al 2006). Often scientific findings exist, but they are not made available or are not understandable to decision-makers and dryland communities.

Limited implementation of UNCCD National Action Programmes (NAPs) is observed. This is a result of the lack of appropriate strategic actions in the countries concerned, limited application of appropriate technology and local knowledge, and a general lack of collaboration between scientists and decision makers (Uwe Holtz 2007). In addition, **both national budgets and foreign aid have failed in financing NAPs.** The restriction of aid has been explained mostly by inconsistency of formulated NAPs, the evident lack of capacities to implement the programmes and a risk of political instability or corruption prevailing in developing countries. In reason of such conditionality in disbursement of financial assistances, the Global Mechanism of the UNCCD for example, contributed only for US$7.6 million to country programmes out of an overall funding mobilisation of US$38 million realised during the period 1998-2008 (E.F.Ortiz et al. 2009).

Lack of synergies between the development programmes in the field, in particular those funded under the three Rio Conventions have lessened the

impact of financial resources in terms of improvement of societal conditions and environmental conservation. In parallel, **a lack of national leadership** on development projects funded by foreign aid has been observed. For example most of projects do not address the need to improve livelihoods for those living in drylands. This can reflect an absence of societal motivation in allocating funds. Substantial benefits from **regional policies have been neglected as well**, leading to missed opportunities on leveraging and pooling resources to jointly address common problems related to DLDD and human mobility across borders.

The way forward: An ambitious roadmap to prevent forced migration in drylands

Considering all the challenges developed previously, migration induced by DLDD and climate change should require the utmost attention, as it will increase considerably in the future. A Win-Win Strategy can be applied in upgrading policy measures to tackle DLDD and to prevent further weakening in the livelihood of millions of affected people in drylands.

1. **Mainstreaming the combat against DLDD and its social impact issue in the policy agenda at all levels.** The UNCCD as a global instrument at the disposal of international community aims at reducing the vulnerability of the population and environment in drylands with concrete and feasible actions to enable sustainable livelihoods and prevent migration. At the national level, in addition to measures preserving land and mitigating land degradation, the NAPs should clearly address the first strategic objective of the UNCCD 10-year Strategy related to social issues by envisaging for example (i) a creation of job alternatives and sustainable livelihoods for pastoralists and farmers in order to alleviate pressure on natural resources; (ii) a reorientation of existing institutions to invest in sustainable land management which will generate integrated benefits; (iii) a formulation of gender-responsive interventions to rural depopulation for ending gender discrimination and securing women and youth's access to key resources.

2. **Improving the scientific basis and knowledge** on the interaction between DLDD and migration. Furthermore, research on key issues such as the "**early warning mechanism" related to DLDD** and **"disaster risk management" in drylands** should be initiated. The goal of DLDD risk management is to increase society's coping capacity, leading to greater resilience and a reduced need for government or donor interventions in the form of disaster assistance. Scientific co-operation is necessary on a global scale to collect, compare and draw conclusions from the experiences. This is a central issue for the future of humankind, implying questions of food security, social peace and of international conflict resolution. The UNCCD can offer the enabling framework for comparative studies between affected regions with different cultural and economic

constraints, establishing an historical perspective and fostering environmental education and training initiatives in affected areas, with a view towards developing successful solutions to migration problems (F Gemenne et al. 2006). At the local level, scientists have a strategic role in providing environmental, social and economical evidence to policymakers when defining and implementing public policies, law, regulations and action programmes. They should contribute to shaping sound policies, good governance and education to local drylands communities. This can be fully addressed and funded when there is political recognition of the importance of the issue. Enhancing science in developing countries will help to curve the "brain drain" trend as well.

3. **Building partnerships for research** with existing institutions and national meteorological services already based in affected regions which monitoring climate and maintain early warning systems such as United States Drought Monitor (USDM), Beijing Climate Center (BCC), IGAD Climate Prediction and Applications Centre (ICPAC) covering 24 countries in the eastern and southern African sub-region (WMO 2006) should be reinforced. Besides, in the context of Joint Liaison Group, the three Rio Conventions are exploring opportunities for synergistic activities and increasing better coordination between them. Promotion of complementarities among the national biodiversity strategies and action plans (NBSAPs) under the Convention on Biological Diversity, the NAPs of the UNCCD, and the national adaptation programmes of action (NAPAs) of the UNFCCC are among options for enhanced cooperation (CBD Website). Investing in carbon sequestration in drylands for instance can in fact play a major role in reversing climate change and providing sustainable livelihoods for drylands people while simultaneously addressing DLDD (Zafar Adeel et al 2006).

4. **Increasing awareness among policymakers and the public.** Faced with imminent DLDD and climate change-induced migration in the future; a strong communication strategy throughout the world should be developed. UNCCD is mandated to upgrade the visibility of combating DLDD in the global political agenda and relevant international forums, including those pertaining to agricultural trade, climate change adaptation, rural development, conservation and sustainable use of biodiversity, sustainable development and poverty reduction (UNNCD Website). Furthermore, through its subsidiary bodies, namely the CST and the CRIC, this Convention can offer a suitable framework for independent scientific and expert assessment, dialogue and policy coordination. At the national level, the evolution of knowledge on DLDD and its interaction with societies; on traditional, scientific and technological practices will facilitate the translation of these findings into educational and training programmes in a view to provide appropriate awareness among all stakeholders and engaging them directly.

5. **Enhancing migration among DLDD and climate change adaptation strategies and prioritizing the drylands' most vulnerable populations (K Warner et al 2009).** International policies to control the wave of illegal immigrants should be handled separately with policies optimising the multi-faceted benefits from human mobility. Permanent or short-term, internal or cross-border migration must be integrated into international and national DLDD and climate change adaptation plans. This might include, for example, incentive measures for families that accept to be relocated with a view to restore a given degraded land. It can also concern regulation, which facilitates the flows and strengthens the benefits of migrant remittances. The objective criteria for **assessing vulnerability** to DLDD should be developed to guide the priority of assistance.

6. **Promoting incentive-based mechanisms for sustainable land management (SLM)** based on traditional knowledge blended with modern moderate-impact technologies. This can be implemented through the NAPs and regionally through the regional programmes such a thematic programme networks (TPNs). The formulation of such policies implies an active participation and involvement of societal groups through a **top-down and bottom-up approach** (Hans Gunter 2009). Payments for Environmental Services on completed SLM projects should be envisaged. The key success of SLM policies requires **measures facilitating access to markets** (UNCCD$_a$ 2008). The affected populations would benefit greatly from the predictable access to markets and with knowledge of demands clearly identified on an *ex-ante* basis. This will allow affected populations to be better integrated into national economic activities.

7. **With regards to resource mobilization issues,** the Global Mechanism of the UNCCD, the GEF, World Bank and IFAD, should optimize the wide range of OECD donors already working in the field of agriculture, forestry and environment, as well as on "emergency responses" and "disaster prevention and preparedness" worldwide. Strong allies can be found in the multilateral donor European Commission (through its Development Agency EDF), and in bilateral donors, principally, the United States of America (through USAID) and Japan (through JICA). Climate-related financial mechanism may also offer additional resources for affected rural areas as mitigating and adapting to climate change contribute to soil security (Hans Gunter 2009). National governments should reinforce fund-rising activities for implementing their respective NAPs. The most efficient way to reallocate subsidies in a coherent, complementary and synergic manner should carefully be developed.

8. **Preserving human rights in drylands.** The Convention calls for all Country Parties of the UNCCD to respect and protect appropriate livelihoods strategies and realise the right to food of all their citizens (UNCCD 2007). A responsible government action is to ensure food sovereignty while also asking for timely food aid when necessary (Hans Gunter 2009). Furthermore, as outlined in the rapporteur's report to the

Human Right Council, all Governments have international obligations towards the realization of the right to food, and thus must support other countries including the one billion poor living in the drylands. This duty to protect human rights should motivate all the recommended policies developed previously (UNCCDc 2008).

oOo

BIBLIOGRAPHY

- Almeria statement, II International symposium Desertification and migrations, (2006) http://www.sidym2006.com/eng/eng_ponencias_conclusiones.asp
- Convention on Biological Diversity website, http://www.cbd.int/cooperation/liaison.shtml.
- Guha-Sapir, Debati ; Hargitt D ; Hoyois P. *Thirty Years of Natural Disasters 1974-2003: The numbers*. Centre for Research on the Epidemiology of Disaster (2004).
- E Cameron, World Bank, Social Development Department, *The social dimensions of climate change*. Contribution to UNOHCHR Study on relationship between climate change and human rights, (2008). www2.ohchr.org/english/issues/climatechange/consultation.htm
- E F Ortiz, T Inomata, *Assessment of Global Mechanism of the United Nations Convention to Combat Desertification*, Jointed inspection Unit (2009).
- F Gemenne, D Pattie, R Boulharouf, *Understanding migration choices: the UNCCD as a mechanism for developing coping strategies* (2006).
- Hans Gunter Brauch; Ursula O Spring; . *Securitizing the ground, grounding security*, UNCCD Issue Paper no.2 (2009)
- *Intergovernmental Panel on Climate Change IPCC, 2007: Summary for Policymakers*. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press USA http://ipcc-wg1.ucar.edu/wg1/wg1-report.html
- International Organisation for Migration Website http://www.iom.int/jahia/Jahia/pid/2068 (2009).
- K Touray, *Desertification and youth migration: a global perspective on challenges and opportunities*. International Symposium on Desertification and Migration Almeria, Spain. (2006) http://www.sidym2006.org/eng/eng_ponencias_conclusiones.asp
- Koko Warner, Charles Ehrhart, Susana Adamo, Tricia Chai-Onn, *In search of Shelter – Mapping the effects of Climate Change on Human Migration and displacement* – Care International, CIESIN, UNHCR, UNU-EHS, World Bank (2009).
- Mélanie Requier-Desjardins, *Investing in recovery of arid land,* Working paper, AFD, Global Mechanism, CSFD, AGROPOLIS, YIDD (2006). http://www.csf-desertification.org
- M Leighton, University of San Francisco - School of Law, *Desertification + Migration = Security?* Working Paper Series published in the Desertification and Security Conference Proceedings, Germany (2007).

- Refugee Studies Centre, *Climate Change and Displacement*, Forced Migration Review, Issue 31, Oxford (2008).

- Tamer Afifi & Koko Warner, *The Impact of Environmental Degradation on Migration Flows across Countries*, Working Paper No. 5- UNU / EACH-FOR /Munich Re Foundation (2008).

- United Nations High Commissioner for Refugees (UNHCR) (2002): A critical time for the environment. In: Refugees. No.127.

- UNCCD 10 Year-strategy, Operational objective 1, Outcome 1.2. http//www.unccd. int/main.php

- UNCCD *Ten Year strategy, Part two: Action taken by the Conference of the Parties at its eighth session*, ICCD/COP(8)/16/Add.1 (2007).

- UNCCD Secretariat$_a$, *The relationship between Desertification, Land Degradation and Drought with migration* (2008).

- UNCCD Secretariat$_b$, *Land degradation, Desertification and Drought (DLDD), Forced Migration and Social Vulnerability Conference*, Welcoming discourse (2008).

- UNCCD Secretariat, human Rights and desertification, exploring the Complementarity of International Human Rights law and the United nations Convention to Combat Desertification, Issue Paper no.1 (2008)

- United Nations Secretary-General Says in Desertification Day Message, *Women in Drylands Rank Among 'Poorest of Poor'*, (2005). http://www.unis.unvienna.org/unis/pressrels/2005/sgsm9919.html

- Uwe Holtz, *Implementing the United Nations Convention to Combat Desertification from a parliamentary point of view, Critical assessment and challenges ahead.* Seventh Parliamentarians Forum UNCCD (2007).

- World Meteorological Organization (WMO), *Drought monitoring and early warning: concepts, progress and future challenges* (2006). http://www.preventionweb.net/english/professional

- Zafar Adeel; Janos Bogardi, CBraeuel, P Chasek, M Niamir-Fuller, D Gabriels, C King, F Knabe, A Kowsar, B Salem, T Schaaf, G Shepherd, R Thomas , *Overcoming one of the greatest environmental challenges of our times: Re-thinking policies to cope with desertification*, Policy brief based on the Joint International Conference: "Desertification and the international Policy Imperative' (2006).

- Z G Bai, D L Dent, L Olsson, M E Schaepman; *Global Assessment of Land Degradation and Improvement, 1. Identification by remote sensing*, GLADA Report 5 (2008).