

September 2001

## **POVERTY AND THE DRYLANDS**

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### **Introduction**

Since the negotiation of the United Nations Convention to Combat Desertification and Drought (CCD) there have been numerous attempts to estimate the number of people living in the world's drylands, and obtain an idea of the scale of the problems at stake and argue for greater attention to their needs. Unfortunately the figures that are quoted are usually consolidated from many different sources. Thus, it is very difficult to deduce exactly who the poor are, where they live and what they do.

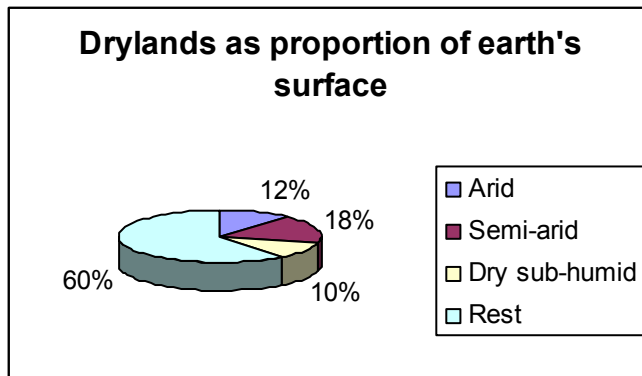
Global statistics need careful handling. Skepticism may be raised when very high figures are quoted with no attempt made to disaggregate them. Equally, by quoting large numbers of people at risk and associating these figures with images of starving people living in hostile arid places, many observers simply conclude that there is little hope for the world's drylands. Instead, they would opt to invest in higher potential areas leaving drylands problems to be dealt with by welfare and crisis management programmes. A third problem is that focusing on drylands peoples ignores the dynamics of movement and trade taking place between the drylands and other areas. The economic opportunities for drylands will not be understood simply by counting the people who are there at any time,

but by understanding the ways that other areas rely on the produce and labour provided by the drylands, and how the drylands in turn import goods and services from outside.

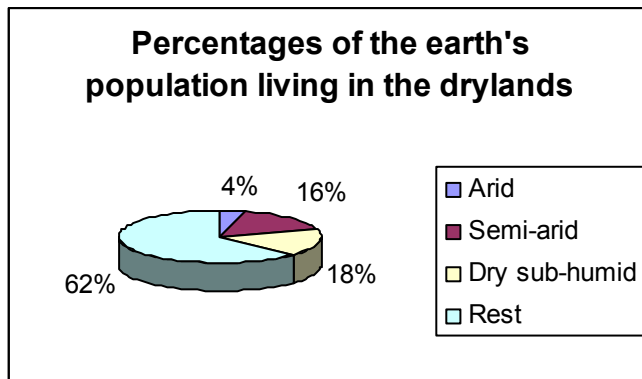
This paper takes as its initial premise the assumption that there are important and significant populations in the world's drylands who, given the right conditions and incentives, can achieve good livelihoods, accumulate assets to reduce vulnerability and escape from poverty. However, to make a convincing case it is necessary to challenge current wisdom on the distribution and condition of drylands populations, and build more realistic scenarios that decision makers can take seriously. This is a major task, and this paper will only set the challenge and introduce some of the new evidence that is required.

### **Commonly quoted statistics**

Two recent publications provide the most comprehensive up-to-date statistics on drylands populations available<sup>1</sup>. They tabulate the extent of arid regions in Africa, South Asia and Latin America, and their respective human populations. Based on the definitions agreed within the CCD, it is shown that about 40% of the earth's surface is made up of drylands.



The remaining category above includes 8% hyper-arid desert and 18% cold drylands according to CCD classifications. The percentage of the world's population living in these drylands was calculated to be about 38%, equivalent to 2.3 billion of today's global population of 6 billion.



These are startling figures for the number of people living in the arid, semi-arid and dry sub-humid parts of the world, and should be better known to policy makers. Indeed, one of the original purposes of the research that led to these figures being published was to draw attention to the very significant numbers of people living in and deriving their livelihoods from the drylands. Closer analysis is needed, however, to understand their full importance.

### **Challenging the figures**

The first challenge in interpreting these data is to get a better understanding of drylands livelihoods. It would be a mistake to assume that all 2.3 billion are poor, rural dwellers. Indeed, the arid, semi arid and dry sub-humid parts of the world contain many of the world's great cities. New Delhi (1993 population 8.96 million<sup>ii</sup>) and Mexico City (1990 population 9.8 million<sup>iii</sup>) are just two examples of mega cities that happen to be in the drylands. In 1995, the level of urbanization in the world was as follows: Africa 34%, Europe 74%, North and Central America 68%, South America 78%, Asia 35%, and Oceania 70%.<sup>iv</sup> By applying these proportions to the number of people living in the drylands, it can be estimated that 800 - 900 million of the world's drylands population live in cities. While this is a very crude estimate, it does serve to emphasize that development can only be tackled through a clear understanding of the regional dynamics in drylands areas containing both urban and rural populations. Therefore, the number of rural dwellers directly suffering from desertification and land degradation are

considerably fewer than the figure of 2.3 billion. However, even more importantly, the figures point to the overall economic vitality of the drylands, with modern cities as well as more traditional agriculturalists.

A second adjustment that needs to be made to global figures is to separate them into developed and developing regions. Again, the data to do so are not readily available. Half of the surface area of the United States of America is classified as drylands. However, most people would argue in favour of excluding the US population (276 million) and that of Australia (19 million) from the estimate of those at risk of impoverishment from desertification<sup>v</sup>.

There are clearly many types of drylands country, facing very different challenges and requiring very different policy responses, as shown below.

	Land area (thousands Km <sup>2</sup> )	Population on productive lands (million)	Population on drylands	Drylands population as % of pop. on productive lands
India	3,275	919	410	45
Nigeria	913	111.7	42.6	38
Botswana	580	1.4	1.4	100
Mali	1,254	10.7	10.3	96
Eritrea	121	3.1	3.1	100

India and Nigeria are examples of large, populous countries that have significant dryland areas and the total numbers of people living in these areas are 410 million and 42.6 million respectively (although many will be urban dwellers and not reliant on livelihoods directly from the land)<sup>vi</sup>. However, the proportion of people living in the drylands in each country is less than half their total population. Countries of this size have the advantage of considerable diversity

within the country, so far as the climate is concerned. There are many other opportunities for alternative livelihoods, and substantial trade in goods and services. India has a highly diversified economy, with a strong industrial sector (26.3% GDP in 1999, including 15.9% manufacturing). (All economic data are *World Bank*<sup>vii</sup>). However, agriculture continues to be a prominent sector (27.7% of GDP). Much of this is dryland agriculture, comprising about 50% of India's agricultural land. The country has made extensive use of irrigation and other forms of water management, and can trade commodities and services between the drylands and other regions.

The ability to benefit from different ecosystems within a single country is also very clear in the case of Nigeria, where agriculture is the dominant sector (39% of GDP in 1998, a figure that has increased over the last twenty years). Nigeria stretches from the humid south coast to the semi-arid lands of the North. Rains that are plentiful in the South extend northwards seasonally, touching the northern regions for only a short period. Thus rainfall is lower and the rainy season shorter the further north one travels. Over centuries, the north has been used for rearing of livestock and growing millet and sorghum – well adapted to low rainfall. Nomadic pastoralists drive animals through the arid and semi arid zones, which can be productive, with good management. The animals are driven south during the dry season, when tsetse fly is absent, to be sold in urban markets in the humid coastal region. In turn, produce from the humid lands (maize, yams and other root crops etc.) is carried north. Obviously, this traditional pattern has become less dominant as a way of life over recent decades, but Nigeria nevertheless provides a good example of how drylands can be used to their best comparative advantage within a national economy. Clearly, simply counting the people in the dry areas reveals little of this complex trading economy.

Mali, by contrast, is a huge West African country, which is almost all dryland and hyper arid desert. Only the valleys of the Niger river system provide opportunities

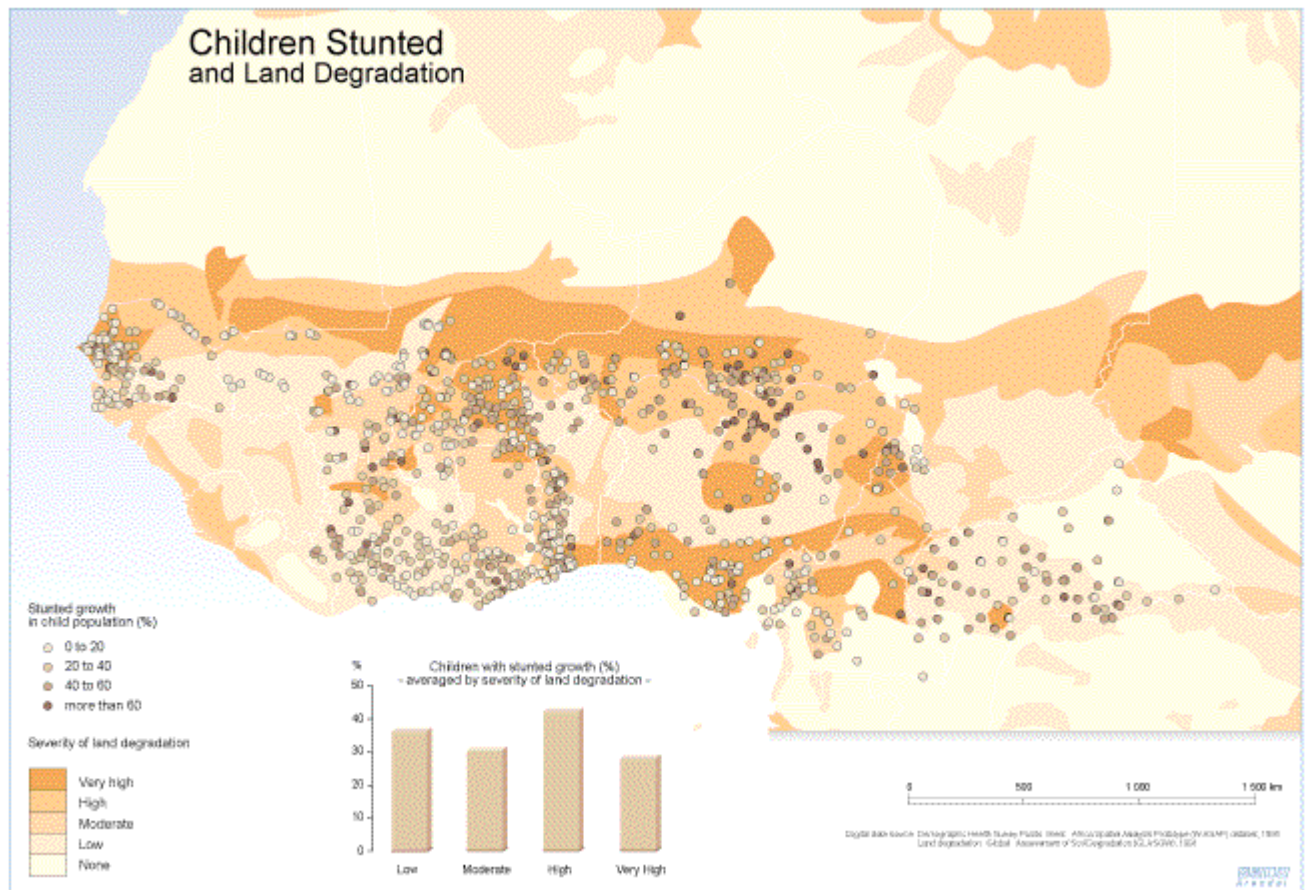
for water management and irrigation. As a result, 96% of Mali's population lives in the drylands, and the economy of the country reflects this. Mali is a predominantly agricultural country, this accounting for 46.5% of the economy in 1999. Apart from intensive rice production schemes on the Niger, most rural Malians are engaged in pastoralism or the production of dryland crops, especially millet and sorghum. Since colonial times, Mali has been growing cotton. More recently, such production has expanded greatly. In 1999 exports of cotton were worth \$244 million, more than 40% of Mali's total exports, and exceeding even gold, Mali's former export leader. Within an international trading context, Mali has been able to make use of the comparative advantage conferred by its drylands. Unlike Nigeria, Mali's north-south trade routes must cross national boundaries and hence makes trading opportunities dependent on trade policies in the broader region - a topic that will be returned to later in this paper. Equally, many Malian farming families depend on migrants' remittances from travel to Côte d'Ivoire and elsewhere. Were such opportunities to be shut down, there would be great impoverishment.

Botswana is an example of a dryland country whose economy has shifted completely from agricultural production, which contributed only 3.6% of GDP in 1999. Industry, especially the mining of diamonds, copper and nickel, dominates the economy. However, Botswana still has many poor people employed in pastoralism and small-scale crop production. The challenge for countries like Botswana is to establish the means by which dryland farmers can trade profitably within a rapidly modernizing economy. The opportunities established under agreements to export beef to the European Union under concessionary terms exemplifies the shifts that are taking place in traditional dryland economies. While minerals, beef and other exports make major contributions to the national economies of some drylands countries, they do not necessarily bring incomes to poor rural dwellers, who may be unable to assert claims on the resources in question. Indeed, exploitation of resources may even lead to the shifting of people from their land.

## **The poverty dimension**

It is clear from the above discussion that while global figures provide insight into the need for support to drylands development, they can only be the first step in understanding how to address poverty reduction. There are strong grounds to believe that the drylands are home to great numbers of very poor people. Four years ago, Nelson et al<sup>viii</sup> estimated that of the world's poor, about 325 million lived on favoured lands, while 630 million lived on marginal agricultural lands, forested areas and drylands. The effects of increasing populations on marginal lands which leads to increased impoverishment have been commented on by many authors. *The most important contributing factor towards degradation of fragile lands in Sub-Saharan Africa is a nexus of poverty, rapid population growth and inadequate progress in increasing crop yields. Poor people in their quest for food and other livelihood needs are increasingly expanding cultivation into forests, steep hillsides and other fragile areas ... reducing fallow periods to the point where soils are inadequately rejuvenated, pursuing land management practices that deplete soil nutrients ... overgrazing pasture ... cutting trees for fuelwood ...*<sup>ix</sup>. When studying the location of poor people in different parts of the world, there is a clear correlation between those living in degraded areas and

high levels of impoverishment.



Source: Bournay & Recacewicz. (1997). Statistics Norway/SSB - Ministry of Environment

Take Cameroon for example, which is characterized by a fairly moist southern region and progressively dryer conditions further north, with the Northern Region being extensively dryland. In 1987 31% of all Cameroonians lived in the Northern Region, and 50% of the country's poor population lived there. Poverty increases from the coastal region northwards. It is below 25% in the urban centres of the south west yet 50% in the dry rural north. Illiteracy and housing conditions are worst in the north, while the highest rate of maternal mortality was recorded in Maroua in the far north. School enrollment rates are lowest in the northern provinces and the enrollment gap between boys and girls widest there<sup>x</sup>. A similar pattern can be discerned in Kenya<sup>xi</sup>. *The highest incidence of poverty (68 – 84% in 1994) is found to be in the Arid and Semi-Arid Lands (ASAL) districts in Northern Kenya.* There is also a great disparity between the most favoured regions and



the dry north. Life expectancy in Nairobi is about 66 years, but 53 in Wajir (in the arid lands of North-East Kenya). Adult literacy in Nairobi is around 93% while it is 12% in Wajir. Secondary school enrollment in Nairobi is 55%, and 5% in Wajir. The Human Development Index in Nairobi is 0.72 and 0.26 in Wajir, a level of disparity similar to the difference in HDI between Thailand and Tanzania.

Data from Kenya 1989 census	
Number of arid and semi arid districts	19
Range of proportion of national population of drylands districts	0.3 – 6.5%
Total people in arid and semi-arid lands	8.6 million
Arid and semi-arid population as proportion of national population	40.1%

(The analysis is based on current district boundaries. There have been considerable changes since 1989, and as a result the analysis misses about one quarter of the population who live in new districts. However, the distribution of new districts will tend to make the figures for total arid and semi-arid populations conservative estimates. New census data will be available soon, and it will be interesting to compare today's data with those presented above, especially in terms of population movement in and out of the dry districts).

Given the competing demands for investment in all parts of Kenya, does it make sense to invest in these dry, fragile areas? Recent research of the Machakos, shows the enormous improvements in productivity, incomes and sustainability that can be achieved when the conditions are right. This semi-arid part of Kenya, once plagued by drought, severe soil erosion and endemic poverty, is now referred to as the "Machakos Miracle". Governance changes have been at the centre of changes that have led farmers to invest their own energies and funds in soil and water conservation, leading to vastly improved fertility and highly profitable agriculture<sup>xii</sup>. Much of the story of the transformation of Machakos - including where the transformation has still to touch all poor people - is summarized in *World Resources, 2000 – 2001*<sup>xiii</sup>). The lesson from Machakos is that farmers with secure rights to their land, a system of governance that permits them to make decisions and access to good marketing opportunities can make even semi-arid lands green and productive.

There are many opportunities for investment in the drylands. Farmers for centuries have been investing their time and limited capital in responding to new options. In many places, cash crop production can be intensified, by focusing on high-value crops, such as fruit and vegetables. Livestock keepers have always kept a close eye on changing prices in near and distant markets and adapted accordingly. Tourism can flourish in the wildlife reserves of Africa, almost all of which fall in dryland areas. Governments need to see how their own investment can add value to the effort provided by local people.

The alternative to investing in the drylands is bleak. Drylands populations are robust, but very vulnerable to drought and other shocks. If the conditions for development in those regions are not improved, even more drylands people will be driven into extreme poverty, and join those who have already left and are adding to the pressures on the cities of both the developing and developed world. Seasonal migration from drylands areas has always been a normal feature of their economies, with export of labour being a fundamental means of improving livelihoods. But, in recent decades the phenomenon has grown with more people migrating permanently, and more escaping civil conflict and serious drought. As more working age men spend more time away from their homes seeking work, it can be expected that there will be a weakening of the capacities of remaining communities to be productive, and an increase in the numbers of female-headed households.

The difficulties and threats of migration must be set against the opportunities that are created. The modern world is very much a creation of migration of people seeking better opportunities. Millions of people migrated from poverty in Europe to seek new opportunities in the Americas, Australia and elsewhere. It is unrealistic to believe that a similar phenomenon will not take place in the drylands. A major difference, however, is that increasingly labour markets are becoming saturated or closed, and there is a risk of people exchanging one form of poverty and isolation for another. They will also contribute to the pressures on

cities and developed countries where they end up. Much more information is needed on land degradation as a driver of migration, and whether migration results more from people seeking a better income. Two studies can be cited. In describing a four-year investigation of migration from Mexico to the United States, Michael Leighton reported that *Although the United States will no doubt continue to attract a large number of migrants from Mexico for a number of economic reasons It is becoming increasingly apparent that the degradation of agricultural lands as a result of preventable, human-induced factors is a major determinant of the migration phenomenon*<sup>xiv</sup>. Following other studies, the United States National Intelligence Council considered that migration from Sahelian countries played a significant role in the recent political destabilization of Coted'Ivoire<sup>xv</sup>.

Despite the additional pressures placed on the drylands by increased population, there are signs that previous development assistance has worked. The author of this paper remembers that during the 1980s, aid workers in Mali were seriously discussing the long-term viability of supporting its drylands peoples, and whether it would be better to move them into more productive areas. Today, Mali's dependence on food imports has been dramatically reduced, its institutions are greatly improved, its agricultural exports have increased, it is moving into the information age by planning to link communities through the internet, and most of those aid workers are long gone.

### **Drylands countries and trade**

The final part of the jigsaw that helps to describe the poverty-environment nexus in the drylands is trade. Drylands populations are not passive victims of their environment, but have excellent coping capacities, are innovative, and extremely responsive to economic signals and opportunities. *Prices and markets play a major role in fashioning the strategies pursued by different [drylands-dwelling] people in the face of changing economic opportunities. The responses of Sahelian farmers and herders to better market conditions generated by*

*devaluation of the CFA franc bear witness to this creativity, as shown by increased livestock exports, and rising cereal prices<sup>xvi</sup>*. It is unfortunate that while there have been many examples of worthwhile projects to make technical improvements to agriculture in the drylands, there are few examples of the drylands being systematically incorporated into economic and trade policies, either nationally or regionally. An excellent discussion of the significance of trade in drylands economies is given in Snrech (1995)<sup>xvii</sup>. This shows that urban growth can be a good thing. The growth in West African cities generates demand for a range of rural produce on their hinterland areas, thereby spurring a process of agricultural investment and intensification.

We need to integrate not only the *needs* but also the *productive potential* of dryland peoples into economic and trade strategies. Taking the Sahel as an example, this region has much to offer trading partners within West Africa and the rest of the world. Instead of focusing on 1 or 2 billion mouths to feed in the drylands, we should remember this implies 1 or 2 billion pairs of hands to work. Unfortunately, where countries have valuable trading assets in their drylands, the poor seldom benefit from them. This applies equally to minerals, cash crops and the extensive wildlife in Africa that brings in valuable tourist revenues. Poverty alleviation is above all an issue of ensuring opportunities, and drylands strategies must ensure the equitable access of drylands populations to opportunities.

The development business is increasingly shifting to "integrated", "comprehensive", "programmatic" forms of development assistance. We need to put drylands development policy where it belongs - right at the heart of macro-economic, social, political and environmental policy. **First we must show how National Action Plans to Combat Desertification and Drought can be dovetailed with other strategy processes, such as Poverty Reduction Strategies. We also need to see a clear demonstration by donors that they will support the CCD and drylands development, not with an attitude of reluctant welfarism, but with an avowed intention to raise productivity and**

**bring the drylands into the modern economy. Lets see how trade rules might positively favour dryland economies.**

## **Round-up**

- Drylands cover more than 40% of the earth's surface.
- There are in excess of 2 billion people living in the drylands.
- But, not all of these people are either primarily dependent upon the land, nor are all of them rural dwellers. The absolute number of poor rural drylands people may be nearer to one billion.
- However, this "numbers game" distracts from the real issues. The absolute numbers of people in the drylands are great, and poverty is particularly associated with dry areas.
- But, the condition of poverty in the drylands is not absolute, and there are many examples that demonstrate the potential of people in the drylands to pursue good livelihoods. The secrets are not in welfare and crisis management, but in establishing the right systems of governance and markets that will provide incentives for people to invest and work.
- Markets and trade are of great importance to drylands farmers and herders. The most important helping action for any of them will be for policy makers to understand the productive capacities of those peoples, and the benefits to be derived through full integration of the drylands into national and regional economic policy.

- The development cooperation community now has a great opportunity to put drylands development where it belongs - at the heart of development policy, especially through integration into poverty alleviation strategies.
  
- While much progress has been made in the development of drylands, the needs continue to increase. In a modern world where goods, services and labour are increasingly traded in a global market, the tendency for large numbers of people to abandon the drylands will increase. This will not be an altogether bad process if educated, capable people choose to seek their future elsewhere. But if societies are left to collapse, there will be a steady attrition of population, placing huge burdens on the places they go to, and leaving increasing numbers of people - predominantly the elderly, women and children - who will require continued and expensive help both from donors and their own nations coffers. However, migration is a continuing phenomenon that has shaped today's world. Migration to escape poverty has created today's economic powerhouses. The purpose of development must not be to keep people in poor circumstances on the land, but to open opportunities to them, and migration to cities and beyond will always be part of this.
  
- And when the economics of the drylands are regenerated, whether through agriculture, tourism or mining, the poor people must be beneficiaries, and benefits should not continue to be siphoned off into capital cities.

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<sup>i</sup> *Aridity zones and drylands populations*, United Nations development Programme Office to Combat Desertification and Drought and World Resources Institute (1997). *Drylands population assessment II (draft)* United Nations development Programme Office to Combat Desertification and Drought and World Resources Institute [www.undp.org/seed/unso](http://www.undp.org/seed/unso) (1999).

<sup>ii</sup> *World Resources 1996 - 1997*, Oxford University Press, published World Resources Institute, ISBN 0-19-521160-X.

<sup>iii</sup> [www.xist.org](http://www.xist.org)

<sup>iv</sup> *World Resources 1996 - 1997*, Oxford University Press, published World Resources Institute, ISBN 0-19-521160-X.

<sup>v</sup> [www.unfpa.org/swp/1999/Swp\\_search\\_C.cfm](http://www.unfpa.org/swp/1999/Swp_search_C.cfm)

<sup>vi</sup> [www.unfpa.org/swp/1999/Swp\\_search\\_C.cfm](http://www.unfpa.org/swp/1999/Swp_search_C.cfm)

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- <sup>vii</sup> [www.worldbank.org/data/countrydata/countrydata.html](http://www.worldbank.org/data/countrydata/countrydata.html)
- <sup>viii</sup> Nelson, M., R. Dudal, H. Gregerson, N. Johda, D. Nyamai, J.P. Groenewold, F. Torres, A. Kassam. (1997) *Report on the studies of the CGIAR research priorities for marginal lands*. Consultative Group for International Agricultural Research, TAC working document, Technical Advisory Committee Working Group, Food and Agriculture Organization, Rome.
- <sup>ix</sup> Babu and Hazell
- <sup>x</sup> Cameroon National Human Development Report 1998, Pub. United Nations development Programme.
- <sup>xi</sup> Kenya Human Development Report 1999. Pub. United Nations Development Programme.
- <sup>xii</sup> Tiffen, M., M. Mortimore and F. Gichuki, (1994) *More people, less soil erosion, environmental recovery in Kenya*. Pub. John Wiley and Sons. Tiffen, M. and M. Mortimer (1992) Environment, population growth and productivity. A case study of Machakos District. *Development Policy Review*, **10**:358-387.
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- <sup>xv</sup> National Intelligence Council Press release.
- <sup>xvi</sup> Toulmin, C. (1999). *Environmental degradation and poverty in Drylands, development and poverty, proceedings of the June 15 and 16, 1999 World Bank Round Table*. Pub. World Bank.
- <sup>xvii</sup> Snrech, S. (1995). *Preparing for the future: a vision of west Africa in the year 2020*. Pub. Organization for Economic Cooperation, African Development Bank and the Permanent Inter-State Committee for Drought Control in the Sahel.