

Sociological Aspects of Land Use Decisions : A Focus on Demography, Livelihoods and Poverty

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Abstract

Human consumption needs are the critical driving forces that induce change in environmental conditions and consequently global change in climate. In particular, the poor tend to be over-dependent on the natural resource-base as they have limited capability for service and product substitution. In the drylands, the conditions of the poor influence the mining of the natural resource base despite their knowledge of implications to the environment. Based on a synthesis of contributions to electronic discussions conducted by ETFRN during April-May 2003 and a review of selected literature, we analyse the current situation of the inhabitants of dryland Africa in relation to population characteristics, poverty and livelihoods as sociological factors that influence consumption patterns against a background of changing policy and institutional frameworks. We examine change in these sociological factors and derive implications for dryland rehabilitation. The review indicates that population increase is projected, but the impact of HIV/AIDS could result in decreases in some countries. The quality of the population in drylands in terms of human capacity and capability is weak and deteriorating because of several factors including persistent poverty, poor nutrition and poor health. The weak population presents a challenge to technical interventions that demand quality labour. Yet labour is a critical factor of production in drylands. The breakdown in traditional institutions because of emerging trends of individualization, change in social norms on gender roles, access and control of forest resources are interweaving with new formal institutional arrangements that aim at incorporating stakeholders in forest resource management. However, the scope for the poor to benefit from the new institutional arrangements is questionable. Promoting forest-based, poverty alleviation-focussed forestry interventions are recent as is evident from the policies of major international research and development financing organizations. Rehabilitation of drylands should be based on community-driven frameworks founded on a comprehensive understanding of people and their needs at local level. This implies that consultations with target communities should prelude design and planning of rehabilitation programmes. Critical to such interventions will be availability of decision-support tools in the form of well-quantified profits from rehabilitation and sustainable management of rehabilitated areas.

Key words: Poverty, dryland forestry, livelihoods, population

Introduction

There is a complex relationship between natural resources and the livelihoods of the people who depend on them; especially the poor. Under conditions of abject poverty, people's consumption needs can override rational exploitation of natural resources. Drylands, like other ecological environments in Africa are noted to be undergoing continuous and accelerated degradation. This common observation has triggered focus on remedial intervention. The principal change associated with the continuous degradation of dryland forest resources is claimed to be the increase in population and related change in demographic structure and composition, and the ensuing changes in patterns of exploitation of the forest and woodland resources to support human consumption needs. Limited appropriate technologies and poor organization for promoting application of technology are augmenting factors.

Based on an extensive review of literature and contributions from electronic mail discussions, this paper examines the interrelationships between changes in the selected sociological factors, implications of remedial intervention for dryland rehabilitation and suggests some research questions.

Indications from the review are that some of these questions that could provide a background for directing research to generate strategies for the future include:

Demography

1. What is the current and projected trend in the demographic structure of Dryland populations?
2. What are the implications of the changes in population numbers, structure and composition for sustainable management of Drylands?
3. Are there appropriate technologies to support sustainable use of dryland resources given the changes in population structure and composition in terms of human resource capacity and capability as well as changes in gender roles?

Livelihoods and poverty

1. What is the appropriate framework for livelihood analysis in the Drylands?
2. What are the appropriate sociological interventions for establishing sustainable livelihoods systems in Drylands through forestry?
3. What has been the effect and impact of chronic, transient, and absolute poverty on degradation of Dryland forests?
4. What should be done to mitigate or alleviate the different types, levels and depth of poverty in drylands using forest-based technologies?
5. What types of changes are apparent in gender dimensions of forest resources management in Drylands and what are the implications of these changes?

Answering some these questions should recast our focus to accommodate a multi-faceted examination of inter-relationships between dryland forest resources, human consumption needs and opportunities for sustainable

management and utilization of the resources. This should augment the current over-focus on the role of forest-based poverty alleviation initiatives¹ to a people centred approach.

Population trends and implications

Knowing the population features of dry lands and projected changes is critical for appropriate design of rehabilitation interventions. It is estimated that 2 billion people, which is about 40 % of the population of Africa, inhabits the drylands (World Summit, 2002; White and Nackoney, 2003). Projections of population growth are confounded by the impact of HIV/AIDS. For example, in the case of Botswana where one in four adults are reported to be infected, negative population growth is predicted between 2000 and 2005 (AAAS, 2003). This situation could also apply to other countries in Africa. Whereas reduction in numbers could imply less pressure on woodland resources, the quality of the population is an important factor. Population distribution and densities are important demographic elements for focus; especially in drylands where spatial and temporary changes in population can be experienced either because of influx of refugees or inter-regional migrations typical among pastoral communities. The actual situation which can be contextual is not known (Dobie, 2001). Population distribution is mainly influenced by relative aridity (Table 1), largely because climatic conditions dictate the economic activities in which inhabitants can be involved in to support their livelihoods and where possible, create wealth.

Table 1 Population distribution in Drylands

Region	Aridity Zone							
	Arid	%	Semi-Arid	%	Dry Sub-Humid	%	All Drylands	%
Asia (Incl.Russia)	161,554	5	625,411	18	657,899	19	1,444,906	42
Africa	40,503	6	117,649	18	109,370	17	267,583	41
Europe	629	0	28,716	5	111,216	20	140,586	25
South America	6,331	2	46,852	16	33,777	12	86,990	30
North America	6,257	2	41,013	16	12,030	5	59,23	25
C. America & Caribbean	6,494	6	12,888	11	12,312	8	31,719	28
Oceania	275	1	1,342	5	5,318	19	6,960	25
World Total	222,043	4	873,871	4	941,922	17	2,038,047	37

Source: UNSO, 1997 Cited by White and Nackoney (2003).

¹ Since the introduction of Poverty Reduction Strategy approaches by the World Bank in 1999 and the re-formulation of the World Bank policy on forestry, a lot of effort has been directed to examining the role of forests in poverty reduction (see Oksanen *et al*, 2003) But this view can overshadow the need to examine the same issues from the beneficiary community's viewpoint and lead to overemphasis on technical interventions.

Given that it is the human actions on the ecosystem that impact on the natural resource-base, negatively leading to degradation, population increase and changes in population structure and composition are a cause for research and development concern. It is not only the number of people inhabiting these fragile environments and the growth rate that should be the focus; rather, it is the health condition and composition of the human population. Knowledge of the demographic structure, detailing the population composition in terms of the proportion of economically active groups against dependants, the health status (especially in relation to HIV/AIDS infection and impact) and technological capacity and capability are important for research planning and implementation as well as translation of generated technologies to useful goods and services. So also are other factors listed by AAAS, (2000) like marital status, age and size of household.

Sustaining the utilization of dryland forest resources in harmony with increasing human consumption demands will require a rapid generation of technologies that can enable fast adaptation to change in consumption needs. However, even if research were to generate viable technologies for drylands, without a healthy, well nourished, technically qualified and informed human population, intervention programs would not necessarily lead to positive change. A critical analysis of livelihoods portfolios of inhabitants of drylands is therefore important as a framework of rehabilitation programs.

Poverty and Livelihoods

The poor are said to mine the environment despite knowing the detrimental consequences, not out of their choice, but the requirement to meet their livelihood needs. This contradictory behaviour and attitude of the poor can be understood through analysis of decision-making framework for the various activities that dryland inhabitants pursue. But let us define the concept of poverty first:

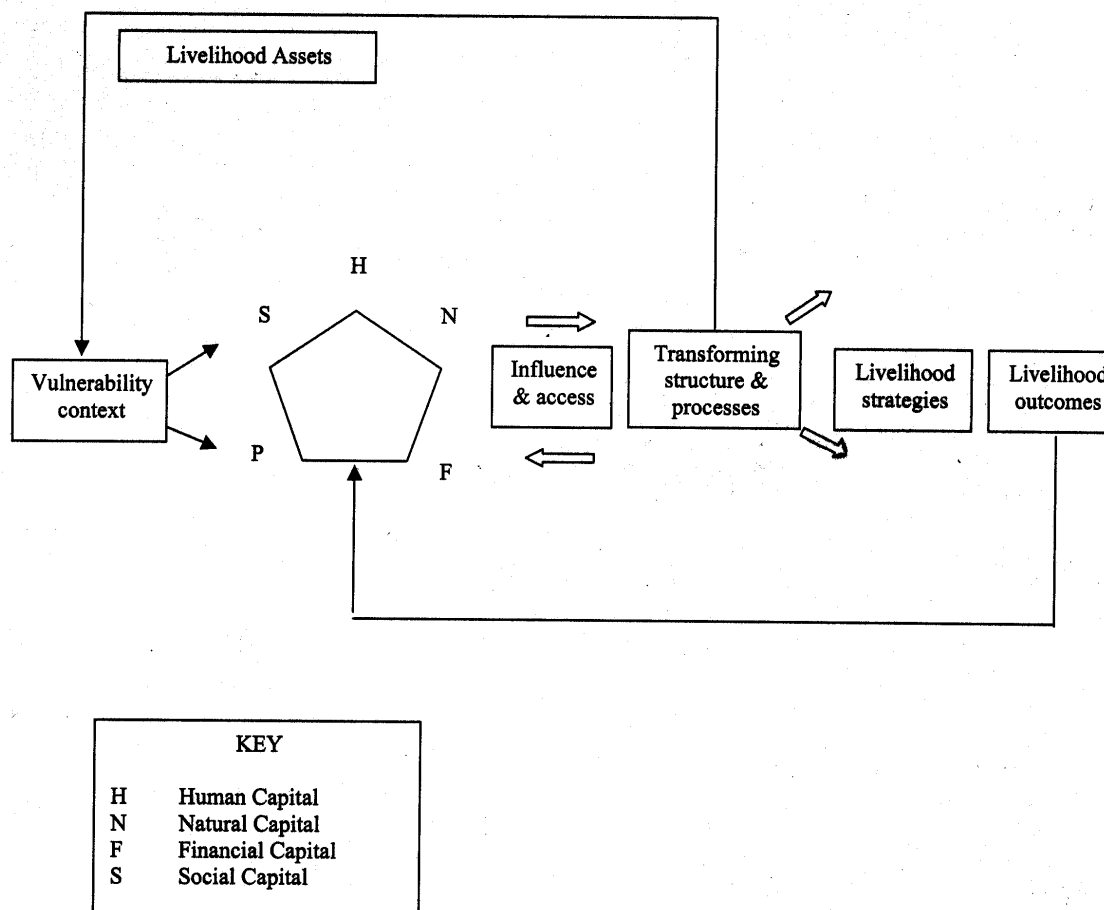
Poverty has been defined as:

“ a pronounced deprivation of well-being related to lack of material income or consumption , low levels of education , vulnerability and exposure to risk , no opportunity to be heard and powerlessness” (World Bank, 2001).

Poverty as a condition of human status affects the lives of many people in Africa who live below the international poverty line of one US Dollar a day. Knowledge of poverty status of a population and the strategies that they adopt to mitigate or alleviate poverty is important to ensure appropriate design of dryland rehabilitation programmes. The sustainable livelihood framework (Campbell *et al* 2002; Schafer, 2002) provides a useful basis for such analysis. The framework shown in Figure 1 has been adapted for this paper with a focus on social and human capital as livelihood assets. This we recognise is a restricted view that has been necessitated by the defined scope for this paper because

there is a strong synergistic association between the various natural and social resources portfolios and livelihood strategies.

Figure 1. Sustainable Livelihoods framework



Source: Schafer, 2002:p.17 NB: More recently, the "Transforming Structures and Processes" has been changed to "Policies, Institutions and Processes" (see www.livelihoods.org)

Human Capital: Labour, Knowledge, Skills and Gender

The human capital segment of the sustainable livelihood analysis framework centres more on people compared to the other elements of the framework and is therefore a useful point of entry for discussions on livelihoods and poverty mitigation and alleviation debate. Within a population the number of economically active members of a household defines the human capital base.

The size of a population, the consumption demand coupled with productive effort invested in regenerating consumptive resources determines the scale and severity of degradation inflicted in an ecosystem by inhabitants. Human capital, that is, the skill and capability status of a population, are therefore important for knowledge-based development. In Drylands, fuelwood, water, pasture and food (crops, livestock and tree products) are major consumption needs. With respect to trees the heavy dependence is well documented (Maydell, 1986), implying a wealth of indigenous knowledge of the value of trees to people.

Labour is a critical factor of production and most households in drylands depend on their own labour. Their major goals are related to risk aversion (Pearson et al, 1995) as they strive to meet their consumption needs. Hence the distribution of labour use aims at diversifying activities in which individual members of a household can be involved to pool benefits to the household. In Zimbabwe, where land use had been dichotomized into commercial farming and communal lands, migration by men to seek non-farm and off-farm employment has been high. In this case, remittance income has been reported to be the factor differentiating wealth status of households (Campbell *et al*, 2002). Hence decision to invest labour is based on evident value of such investment for income generation. Consequently, decision support tools in the form of packaged information on profitability of forest-based investments are necessary. Such tools must clearly indicate the extent to which such income can place households above the poverty line and facilitate wealth accumulation. The optimism shown by Dobie (2001) 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”* can then be attained.

A labour investment in some communities translates to opportunity for ownership, control or user-rights on productive resources like land and livestock contextually set in the traditional and cultural norms of a community. The Maasai, Samburu and Turkana women of Kenya, for example, have rights to the smaller livestock like goats, calves and poultry. But they have key responsibility for rearing such stock. Children also have often been major contributors to livestock rearing. In Senegal where men are absent for a large part of the year, labour roles within the households have changed (Leonard and Toulmin, 2000). In other parts of the Sahel, it has been argued that the absence of men has not greatly changed the status quo because the women have been left in the same compound with other male extended relatives who 'support' them (Leonard and Toulmin, 2000). There are therefore 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. Critical analysis of labour availability patterns in relation to considerations on the types of rehabilitation technologies is therefore appropriate.

Apart from labour quantity, the quality of labour in terms of health and energy-based capability is critical. Poor quality labour can have a negative impact on the environment. A weak labour force will exploit resources in the vicinity at any

cost. For this reason, social development projects like construction of schools, portable water sources, health facilities, food provision and nutrition programs should be components of dryland rehabilitation projects.

In the drylands, the human resource capital is typically weak because of nutritional deficiencies (Jafry, 2000). Consequently, they have limited ability for undertaking tasks needing a high effort. Therefore, in situations where diversification has been pursued by the inhabitants, the low returns to effort maintains households at a subsistence level. And this is because technologies currently applied in dryland rehabilitation, for example, manual construction of gabions and planting trees, demand a lot of human effort and skill. Technologies that promote drudgery are associated with subsequent health problems and low productivity.

Of critical concern is the variation in the quality of human resource capital with status of households and gender. Women are particularly disadvantaged because of the high demand of their labour-time input in the multiple productive and reproductive activities (Jafry, 2000). Some critical questions with regard to human capital are:

1. Is there a critical mass of capable human resource capital to facilitate rehabilitation of drylands?
2. What are the appropriate technologies that can support the quality of human capital in drylands?
3. If appropriate technologies are identified or generated, what are the mechanisms for imparting skills to target populations with opportunities for balanced benefits to households of different socio-economic status and people of varying poverty levels?

Social capital: Labour and resource tenure

The human relations that govern activities that inhabitants of an ecosystem can draw upon to attain their livelihood objectives is social capital. This capital can include clan networks, norms on access to, ownership and user-rights in factors of production, reciprocal labour groups, family and household members' labour. Traditional institutions founded on customary leaders' and elders' committees have been the basis for ensuring sustainable use of communal resources like woodland, forests, water points and grazing land among dryland inhabitants (Barrow, 1987). But where pressure on land has set in, individual ownership or legalized group ownership with exclusion mechanisms has emerged. Exclusion mechanisms such as membership fees for affiliation to a community group or payment of access fees to forest resources are recent and have arisen from apparent resource scarcity.

Dryland rehabilitation programs should therefore be based on well-informed knowledge of types and magnitude of exclusion mechanisms. Such mechanisms tend to disfavour the poor and less powerful (Kaudia, 2002). Despite this, recent

research suggests that emerging institutional arrangements for managing forest resources which incorporate user participation and ownership, could have potential for instilling resource management sustainability (Alden Wily, 2001).

Research question that arise:

1. What are the merits and demerits of institutional arrangements that integrate formal and traditional institutions?
2. Which exclusion mechanisms are applied in various situations and what are the implications of such exclusion mechanisms for equity and equality in resource use by people of different social backgrounds?
3. Are local resource management institutions sustainable?
4. Can demand-driven interventions founded on locally generated action plans with comprehensive involvement of potential beneficiaries be viable options for rehabilitation of degraded lands?.

Summary

Consumption need is the main factor driving inhabitants of drylands to exploit the already fragile resource-base. What best technologies and practices do research and development agencies have to address the situation so as to ensure enjoyment of quality life by current and future generations?

Suggested ways forward

Rehabilitation of dry lands should be based on holistic programs that encompass livelihood support and poverty mitigation and alleviation strategies for dry lands inhabitants. This means that multi-faceted cross-sectoral partnerships should be the basis of program formulation for joint implementation.

Population control and management programmes, food and nutrition security, potable water provision, easily-understood decision support tools, skills development for human resources and education programs will complement macro-level interventions suggested by other contributors to this workshop.

References

- AAAS (2000) Population and Consumption Trends. In: AAAS Atlas of Population and Environment. : <http://www.ourplanet.com/aaas/pages/overview03.html>
- Alden Wily, L (2001). Forest Management and Democracy in East and Southern Africa: Lessons from Tanzania. London, IIED.
- Barrow, E. G. C. (1987). *Report of results and findings from a survey on Ekwar carried out from November 1986 to July 1987*. Typescript. Forest Department, Turkana District, Kenya.
- Campbell B. M, Jefferey S., Kozanayi, W., Lukert, M., Mutambo, M., and Zindi, C (2002). Household Livelihoods in Semi-Arid Regions: Options and Constraints. CIFOR.
- Dobie P (2001). Poverty and the Drylands. In: The Global Drylands Partnership. UNDP. unso@undp.org
- Jafry, T (2000). Women, human capital and Livelihoods: An Ergonomics perspective. Natural Resources Perspectives. London, ODI.
- Kaudia A. A. (2002). Ndombe Harambee Water Project. In: *Impact Assessment Study of the Community Development Project*. Phase One. A report submitted to the European Union. Development Researchers' Network, Rome, FAO
- Leonard R and Toulmin C. 2000. Women and Land Tenure: A review of the Issues and Challenges in Africa. DFID, United Kingdom.
- Maydell, H. J (1986) Trees and Shrubs of the Sahel: Their characteristics and Uses. GTZ. Eshborn.
- Oksanen T, Pajari, B and Tuomasjukka T (Eds). Forests in Poverty Reduction Strategies: Capturing the Potential. European Forest Institute. EFI Proceedings No. 47, 2003.
- Oliver, S.C. (1965). "Individuality, freedom of choice and cultural flexibility of the Kamba. *American Anthropologists*, 76: 2. pp. 421-428.
- Pastanack, D (2003) Rehabilitation of degraded lands in Sub-Saharan Africa-E-discussion.
- Pearson C J., Norman D W. and Dixon J. 1995. Sustainable dryland cropping in relation to soil productivity - FAO Soils Bulletin 72. FAO, Rome, Italy.
- Schafer, J. 2002. *Supporting livelihoods in situations of chronic conflict and political instability: Overview of conceptual issues*. London, ODI. 52 pp.

UNEP (2002) *Global Environment Outlook 3. Past, present and future perspectives*. Earthscan Publications Ltd. London.

UNSO (1997). *Aridity Zones and Dryland Populations: an assessment of population levels in world's Drylands*. UNSO. Office to Combat Desertification and Drought. New York. UNSO/UNDP.23pp.

White R. P and Nackoney J (2003). *Who lives in the world's drylands?*. In: *Drylands, people, and ecosystem goods and services: A web-based geospatial analysis*. http://ideas.wri.org/pubs_content_c.cfm?ContentID=727. Last updated January, 31, 2003

World Bank (2002) *A revised forest Strategy for the World Bank Group*. The World Bank. <http://www.worldbank.org/forestry>