

THE CONCEPT OF ENVIRONMENTALLY - INDUCED CONFLICT: A CASE STUDY OF NORTHERN KENYA, 1963-2012

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ABSTRACT

Population and environment are closely entwined in a complex and dynamic relationship. Over the past three to four decades, some economists, biologists, and environmentalists have been debating the role of population in environmental degradation. The objective of this study is to investigate the concept of environmentally induced conflict. A qualitative approach will be adopted to produce the descriptive data to assess the concept of environmentally induced conflict in Northern Kenya. The findings of the study where that

environmentally induced conflict has hampering development initiatives in Northern Kenya area. This implies an urgent need for restoration and sustainability of a peaceful environment among the target communities as one of the priorities by the Kenyan government partners and other stakeholders. Political, social and economic factors are closely linked to the key factors that have influenced environmentally induced conflict in Northern Kenya.

Key Words: *environmentally - induced conflict, northern Kenya, 1963-2012*

INTRODUCTION

Population and environment are closely entwined in a complex and dynamic relationship. The relationship between population and environment is mediated by a number of socioeconomic, cultural, political, and developmental variables whose relative significance varies considerably from one context to another. Over the past three to four decades, some economists, biologists, and environmentalists have been debating the role of population in environmental degradation.' The developing countries have been blaming the developed countries for pushing them to reduce their birth rates so that the rich countries can continue with their wasteful lifestyles. Such debates and the blame-game have recently heated up with rapidly increasing visibility of and awareness about environmental problems at both the local and global level¹.

Environmental degradation can also affect fertility by increasing the demand for child labor² or by increasing the abstinence periods due to environmentally-induced, sex-selective labor migration. For the most part, the effects of environment on population are also mediated by institutional factors. These factors make the link between population and environment complex. Adding to this complexity is the bi-directional nature of the relationship and a lack of understanding of the relevant variables, their behavior, and the internal dynamics of environmental change³. Moreover, there are considerable uncertainties about the likely course of future demographic and environmental changes. Considerations such as long term versus short

1Shaw, R. Paul. 1992. The impact of population growth on environment: The debate heats up. *Environmental Impact Assessment* 12: 1 1-36.

2Feldman, A. 1990. *Environmental Degradation and High Fertility in Sub-Saharan Africa*. Morrison.

3Lutz, Wolfgang. 1994a. Population and environment--What do we need more urgently: Better data, better models, or better questions? Pages 47-62 in Basia Zaba and John Clarke, eds. *Environment and Population Change*. Liege: Derouaux Ordina Editions.

term, local versus global, and direct versus indirect effects of population on environment and vice versa make the relationship even more unclear. Realizing the complex and dynamic nature of the relationship between population and environment and the contextual idiosyncrasies, some researchers argue that it is not possible to have a single theory which can adequately explain the interactions between population and environment⁴. An attempt to develop such a theory is bound to be so general as to lose any usefulness in a real context (for example,⁵). Nevertheless, the need for a comprehensive theory incorporating major dimensions of population, development, and environment with global applicability has been repeatedly proposed⁶.

Northern Kenya in general and the pastoralist lifestyle in particular is often associated with violent conflict. Disputes over pasture and water access between pastoralists and farmers have led to increasingly violent clashes, while cattle-raiding between pastoralist groups has devastated communities which have become trapped in cycles of violence and counter-violence. While some pastoralist groups bordering the Rift Valley were drawn into the post-election violence of 2008, much of Northern Kenya was not directly affected. However, chronic insecurity and endemic violence in pastoralist areas have been more destructive and claimed more lives over the long term than episodic outbursts of election-related violence elsewhere in the country. Thus far, pastoralist grievances have not become enmeshed into national ethno-political rivalries to the extent that they have elsewhere in the country (⁷). But this does not mean that conflicts in Northern Kenya are not politicised: antagonistic pastoralist groups are often drawn into local political rivalries by politicians seeking to gain votes, and this can exacerbate the violence.

STATEMENT OF THE RESEARCH PROBLEM

Northern Kenya is the most marginalised and under-developed region of Kenya, lacking in basic service provision and receiving a smaller proportion of national resources than other regions of the country. The vast majority of the area is comprised of arid lands, where rainfall is low, temperatures are high throughout the year, and where people's access to and control over critical livelihood resources such as land is insecure. The dominant livelihood in arid districts is pastoralism, a system of production that is characterised by livestock mobility and the communal management of natural resources. Pastoralist communities have been largely marginalised from economic and political resources in recent decades. This marginalisation is due in part to limited capacity or ineffective state institutions in remote areas, but it also reflects the fact that

4Bilsborrow, Richard E. and H.W.O. Okoth Ogendo. 1992. Population-driven changes in land use in developing countries. *Ambio* 2 1 :37-45.

5Turner, B.L., II and W.B. Meyer. 1991. Land use and land cover in global environmental change: Considerations for study. *International Social Science Journal* 130:669-677.

6World Commission on Environment and Development (WCED). 1987. *Our Common Future*. Oxford: Oxford University Press.

7Oba, G. and Lusigi, W. (2009), *An overview of drought strategies and land use in African pastoral system*. Paper 23a Overseas Development Institute, Pastoral development network, March.

pastoralist communities are largely under-represented in government and the wider political process⁽⁸⁾.

Northern Kenya in general and the pastoralist lifestyle in particular is often associated with environmentally induced conflict. Disputes over pasture and resources access between pastoralists and farmers have led to increasingly environmentally induced conflict, while cattle-raiding between pastoralist groups has devastated communities which have become trapped in cycles of environmentally induced conflict and counter- conflict. While some pastoralist groups bordering the Rift Valley were drawn into the post-election violence of 2008, much of northern Kenya was not directly affected. However, chronic insecurity and environmental conflict in pastoralist areas have been more destructive and claimed more lives over the long term than episodic outbursts of election-related violence elsewhere in the country. Thus far, pastoralist grievances have not become enmeshed into environmentally induced conflict to the extent that they have elsewhere in the country⁽⁹⁾. But this does not mean that environmental conflicts in northern Kenya are not politicised: antagonistic pastoralist groups are often drawn into local political rivalries by politicians seeking to gain votes, and this can exacerbate the environmental conflict.

Northern Kenya is the most marginalised and under-developed region of Kenya, lacking in basic service provision and receiving a smaller proportion of national resources than other regions of the country. The vast majority of the area is comprised of arid lands, where rainfall is low, temperatures are high throughout the year, and where people's access to and control over critical livelihood resources such as land is insecure. The dominant livelihood in arid districts is pastoralism, a system of production that is characterised by livestock mobility and the communal management of natural resources. Pastoralist communities have been largely marginalised from economic and political resources in recent decades. This marginalisation is due in part to limited capacity or ineffective state institutions in remote areas, but it also reflects the fact that pastoralist communities are largely under-represented in government and the wider political process⁽¹⁰⁾.

Studies of past famines suggest that environmentally induced conflict can affect different areas and people within the same stricken area very differently⁽¹¹⁾, and the subsequent effects felt by households or individuals and their coping strategies or mechanisms could greatly be influenced

8Fiki, O.C. and B. Lee 2004. Conflict generation, conflict management and self-organising capabilities in drought-prone rural communities in north eastern Nigeria: A case study. *Journal of Social Development in Africa*, 19, pp. 25–48. Final/2, Brussels.

9Hegerl, G.C., F.W. Zwiers, P. Braconnot, N.P. Gillett, Y. Luo, J.A. Marengo Orsini, N. Nicholls, J.E. Penner and P.A. Stott 2007. Understanding and attributing climate change. In: Solomon et al. 2007, pp.665–744.

10Hogg, R. (1982). Destitution and Development: The Turkana of North West Kenya. *Disasters*, 7(2), 156-156.

11 Watson, C. 2003. Pastoral women as peacemakers. Community-based Animal Health and Participatory Epidemiology Unit (CAPE) of the African Union's Interafrican Bureau for Animal Resources (AU/IBAR), Nairobi, Kenya. Available from: <www.eldis.org/fulltext/PastoralWomenAsPeacemakersApril2003.pdf>.

by their previous status in terms of wealth, access to aids and loans. Like in many other developing worlds, most rural households in Northern Kenyan depend largely on agriculture for their source of food and income. Agriculture thus plays a prominent role in the stability of rural communities. During environmentally induced conflict periods and beyond, these communities are often left without their livelihood and investment. Until recently, response to environmentally induced conflict in Northern Kenyan has been reactive and the procedures have followed inconsistent patterns (¹²).

Broad Objective

The objective of this study is to investigate the concept of environmentally induced conflict a case study of Northern Kenya.

Specific objectives

1. To assess how social factors impact on environmentally induced conflict in Northern Kenya
2. To determine how economic factors influence environmentally induced conflict in Northern Kenya
3. To establish how political factors impact on environmentally induced conflict in Northern

LITERATURE REVIEW

This section will examine the literature review of the study more emphasis will be on the four objectives of the study which will be studied at length in order to show their relevance to the research under study.

Nature of Environmental Conflicts

According to Elias et al., (¹³), environmental conflicts have the following characteristics: Environmental conflict is a result of scarcity and represents social struggles against uneven usage and allocation of resources; Environmental conflict reflects poor performance by governments in developing complex public policy; Environmental conflict involves the issues of power and rights and; Environmental conflict is an inevitable consequence of development and can be constructive.

Another important factor according to Sibanda (¹⁴), is that environmental issues tend to involve everybody in the community and often arise over the benefits or trade-offs between environmental and economic issues. This factor is clearly demonstrated concerning proposed

12 Africa Department of Provincial and Local Government, 2002. Disaster management acts 57 of 2002. Government Gazette: Pretoria. South Africa.

13Elias, A.A. , Jackson, L.S., Cavan, R.Y. 2004 Changing positions and interests of stakeholders in environmental conflict: A New Zealand transport infrastructure case Asia pacific Viewpoint Vol 45 (1) p87-104.

14Sibanda, H.M. 2000 The Implemetation of the National environment Youth Corps Project, experiences to date . United Nations Development Programme p 29-52.

nuclear power stations, with the community objecting because of environmental degradation versus the need for alternative sources of power in order to support the energy needs of a developing energy-intensive country.

Environmental conflicts have been defined as fundamental struggles over the different capacities of social groups to meet their needs by gaining access to natural resources. Elias et al.,⁽¹⁵⁾ The potential for group formation increases as people identify with one another because of their shared perception of grievance, and the meaning of group membership is influenced by the degree and character of the grievance. The more high-profile the group is, the greater the perception of group action; it ensures that the costs of challenges to authority are distributed across many individuals, and it increases the probability that these challenges will succeed.

Consensus seems to exist in the field of environmental conflict literature on how to approach the topic; through a causal construct or a “causes of conflict” line of inquiry that qualitatively or quantitatively connects the status of the environment with armed conflict. The basic dilemma of such an approach is best illustrated with an example representative of the literature. In their review of “environmentally-induced conflicts” Carus and Imbusch assert environmental changes and the increasing scarcity of natural resources play a decisive role in the emergence of conflicts. Only shortly afterwards they stipulate that whether environmental stress indeed harbours conflict or leads to violence depends upon a series of socio-economic context variables. According to the authors, these “context variables” encompass “cultural circumstances and traditions, ethno-political factors, civil society mechanisms of peaceful conflict resolution, stability of the interior policy system and, finally, societal, institutional, economic and technological capabilities⁽¹⁶⁾).

Serious doubt arises as to such an approach that first labels conflict as a single-issue and subsequently adds a large number of “intervening” non-environmental variables in a later stage of the analysis. This procedure is characteristic for much of the literature, and it demonstrates that the “causal paradigm”- i.e. the preconceived notion that environmental degradation causes conflict - has not been useful in explaining relations between the environment and inter-group violence. An analogy of “environmental conflicts” proves fruitful in this respect. It applies to the environment when apprehended from the viewpoint of organised violence. Resource scarcity as well as abundance, to take just one example, is first and foremost a property of a relationship between groups and their ecosystem⁽¹⁷⁾. As such it does not designate a specific ecological status of resources regardless of the degree of biophysical degradation or depletion one might observe. Furthermore, this property of relationship between groups and ecosystem is always and by definition the product of a social process. Similar to ethnicity that is manipulated as a political

¹⁵Elias, A.A. , Jackson, L.S., Cavan, R.Y. 2004 Changing positions and interests of stakeholders in environmental conflict: A New Zealand transport infrastructure case Asia Pacific Viewpoint Vol 45 (1) p87-104.

¹⁶Percival, V., Homer-Dixon, T. 1995 Environment Scarcity and Violent Conflict : The case of South Africa Project on Environment Population and Security p1-17.

¹⁷Redcliff, M. 2000 Addressing the Causes of conflict : Human security and Environmental Responsibilities Review of European Community and International Environmental Law Vol. 9 (1) p34-46.

resource, political entrepreneurs and ruling classes influence the perceptions people have of “their” natural resources.

Dominant groups do so instrumentally in order to achieve their political goals, which are often linked to illegitimate resource appropriation in a context of state decay. Societal perceptions of natural resources are furthermore conditioned by socially defined property rights and by symbolic meanings shaped by the interactions between the social and the ecological sphere. Consequently, one cannot reasonably postulate that the status of a specific kind of resource constitutes a sufficient or even necessary condition to explain violent conflict if the property of relationship between human beings and nature is not understood (¹⁸).

The question arises as to where this capacity stems from. Intrinsically natural phenomena such as earthquakes, flooding, or rapid processes of soil degradation provoke immediate responses by human beings. However, these events are bare of intentionality and do not embrace agency in the sociological sense. The question as to why and how nature possesses the capacity to stimulate and transform human behaviour remains unanswered. This challenge cannot be resolved through definitional exercises, methodological innovations, or large empirical samples. It depends fundamentally on whether one adopts a more eco-centric or more anthropocentric philosophy. At first sight the idea of environmentally induced conflict reflects an eco-centric assumption, as the environment is portrayed as being capable of modifying the behaviour of people. A closer examination of the literature reveals that collective action, mostly inter-group conflict, is represented as the outcome of the interaction of environmental scarcity with non-environmental factors. Thus scholars ultimately fall back on an anthropocentric argument to explain human behavior (¹⁹). As long as research philosophies intermingle eco-centric and anthropocentric philosophies that are not made explicit, coherent knowledge on the subject of environmental conflicts is difficult to achieve.

Conflicts are emerging and developing on the basis of the meaning and interpretation people involved attach to action and events. However, the existing body of literature provides little insights about the perceptions, meanings, and strategies of those actors confronted with environmental degradation, discrimination or resource capture. Rather conflict parties are reduced to functional categories (ethnic groups, marginalised groups, etc.) or casualty numbers. This shortfall is partly due to the somewhat biased conception of conflict that guides a great number of works on environmentally induced conflicts. Conflict is identified exclusively when manifest in armed inter-group relations that result in a significant number of casualties. Focusing research agendas on the explanation of violent conflict is unquestionably a legitimate strategy.

¹⁸Fig, D. 2008 Environmental flashpoints in South Africa Group for Environmental Monitoring (GEM) March 2008.

¹⁹Eerkens, J.W. 2006 *The Nuclear Imperative : A Critical look at the Approaching Energy Crisis* Netherlands: Springer.

However, it bears the constant danger of neglecting the social dynamics that produce and shape collective mobilisation and action before the outbreak of violence (²⁰).

Possible Environmentally Induced Conflict Risks

A few specific scenarios, with more or less scientific roots, illustrate common assumptions and fears about environmental change causing conflict. International attention in literature and in the media appears to have centred on four main types of conflict: (i) drought and migration pitting different groups against each other in competition over resources, especially prevalent in the Sahel, (ii) unequal access to land with large landowners dominating over poor labourers; (iii) conflicts over scarce freshwater resources, within and across international borders; and (iv) failure to regulate pollution and compensate for externalities (²¹).

Land Degradation and Migration

The Darfur crisis is said to be about reduced rainfall and soil degradation leading in turn to migration and increased competition over scarce land. In the entire Sahel region, this is often associated with conflicts between sedentary farmers and migrant herders. Migration and competition over resources appear to combine with issues of governance, patronage, historical religious and ethnic affinities in a complex political dynamic (²²).

Unequal Access to Land

Dating back to the French and Russian revolutions, and more recently the Nepal conflict, access to land has historically been an important source of conflict, whether it results from soil degradation, population growth, or policies underpinning unequal distribution (²³).

Water Scarcity

In 2001, the Global Policy Forum identified over 50 countries on five continents that might soon be caught up in water disputes unless they move quickly to establish agreements on how to share reservoirs, rivers, and underground water aquifers (²⁴). According to the Woodrow Wilson International Center for Scholars and their Environmental Change and Security Program, these water issues are often related to fast-paced development that is straining water resources around the world.

20Deutsch, M., Coleman, P.T., Marcus, E.C. 2006 *The Handbook of Conflict Resolution Theory and Practice* San Francisco : Jasssey-Bass.

21Wu, H. and Wilhite D.A., 2004. An operational agricultural drought risk-assessment model for Nebraska, USA. *Natural Hazards*. 33: 1-21.

22 Sweet, J., 1998. *Livestock-Coping with Drought: Namibia-A Case Study*. Northern Regions Livestock Development Project, Tsumeb, Namibia.

23 Sivakumar, M.V.K., and Wilhite, D.A., 2002. *Drought Preparedness and Drought Management*. World Meteorological Organization, Geneva, Switzerland. Available at: <http://drought.unl.edu/monitor/monitor.html> (Accessed 19-05-2009).

24 Urdal, H. (2005): People vs. Malthus: Population Pressure, Environmental Degradation, and Armed Conflict Revisited. *Journal of Peace Research* 42(4): 417–434.

Failure to Regulate Pollution and Externalities

Externalities constitute a key economic concept in any discussion over natural resource management and pollution. Unregulated, a situation of opposing interests may create conflict between the user/polluter and the polluted: the interest of the polluter is to continue his polluting activities without taking notice of the polluted party, ⁽²⁵⁾. The interest of the polluted party is naturally to make the polluter stop his activities. There is extensive literature on what constitutes a good rule of law, i.e. how to alleviate the problem, which ultimately will depend on the will and the capacity of a Government to articulate and sanction such regulations.

Environmental Link to Violent Conflict

Empirical studies on the environmental link to violent conflict are emerging. Most of the literature on conflict and environment uses existing knowledge about environment and economics on the one hand, and conflict and economics on the other to infer direct relations between environmental change and conflict. Analysis also includes some time series multiple regression studies (Raleigh and Urdal, 2006) and an ongoing research project on climatic and hydrologic variability influence patterns of civil war outbreak.

One exception is a study from 1993 covering Thailand, Guatemala, the Sahel, and India among others (Suhrke, 1993), analyzing the interaction of economic factors and inequality, ethnicity and patronage, in relation to migration and possible conflict. In a multiple regression study of land degradation, freshwater scarcity, population crowding, and social, economic, and political conditions, Raleigh and Urdal ⁽²⁶⁾ find that environmental and demographic factors both directly and indirectly – although only moderately – affect the risk of violent conflict. Population growth is not a strong indicator of conflict; however land degradation increases the risk of violent conflict over territory. The study found that environmental and demographic factors did not change significantly when controlling for economic, political and social factors.

In another study Urdal tests neo-Malthusian theories against resource-optimism hypothesizing that population density may drive economic development and in turn build more stable societies ⁽²⁷⁾. A quantitative cross-national time-series study covering the 1950-2000 period does not provide strong support for either perspective. Countries experiencing high rates of population growth, high rates of urbanization or large refugee populations do not face greater risks of internal armed conflict. However, when land scarcity combines with high rates of population

25Verhagen, A and Van Keulen, H. 1999. Analysis of rainfall variability and agricultural risk in sub-Saharan West Africa. Poster presentation at 20-23 September 1999, Reading UK. Food and Forestry: Global change and global challenges.

26 Raleigh, C. and H. Urdal (2006): Climate Change, Environmental Degradation and armed Conflict, Paper presented to the 47th annual Convention of the International Studies Association, San Diego, CA, 22-25 March 2006.

27 Urdal, H. (2005): People vs. Malthus: Population Pressure, Environmental Degradation, and Armed Conflict Revisited. *Journal of Peace Research* 42(4): 417–434.

growth, the risk of armed conflict increases somewhat, particularly for cases dating back to the 1970s.

Lately, Brown and Crawford studied the security implications of climate change in West Africa for the IISD. More specifically, the authors arranged scenarios workshops in Ghana and Burkina Faso to estimate the conflict risk related to climate change. The report concludes that only in the worst case scenarios did climate change seem to incur a threat to stability⁽²⁸⁾

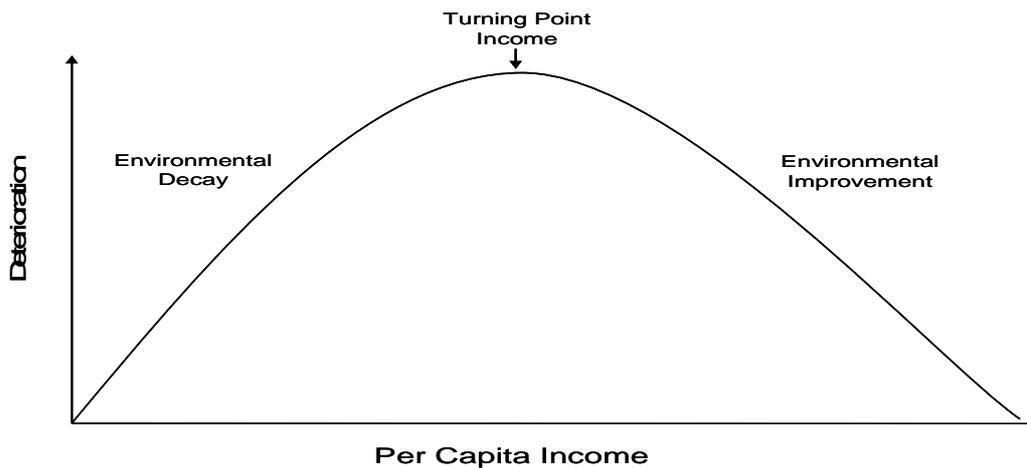


Figure 1: The Environmental Kuznet's Curve

Social Factors

Externalities constitute a key economic concept in any discussion over natural resource management and pollution. They signal the specific environmental importance of the more general importance of regulation. Unregulated, a situation of opposing interests may create conflict between the polluter and the polluted: the interest of the polluter is to continue his polluting activities without taking notice of the polluted party. The interest of the polluted party is naturally to make the polluter stop his activities. There is extensive literature on what constitutes a good rule of law, i.e. how to alleviate the problem, which ultimately will depend on the will and the capacity of a Government to articulate and sanction such regulations. This includes public policy, involving regulation of the polluter and compensation to the polluted; and institutions, i.e. the courts. Also, the extents to which property rights are defined affect the chances for peaceful solutions. This is often complicated by migration, traditional vs. modern concepts of property rights, nomadic vs. sedentary populations and so on. Regulations, effective courts and well defined property rights all require strong institutions⁽²⁹⁾.

28Brown, O. and A. Crawford (2008): Assessing Security Implications of Climate Change in West Africa, IISD Report – Country Studies of Ghana and Burkina Faso.

29GTZ (2007): Protection and Management of the Watershed Area of the Miyun Reservoir – Background, Implementation and Achievements (1998 – 2007), Project Report.

Economic Factors

Even though the exact impact of climate change remains uncertain, environmental deterioration is likely to affect poorer economies disproportionately higher than richer ones. Climate change is expected to impact on precipitation and temperatures, both of which have implications for agricultural productivity and outputs. The IPCC has estimated that a 3°C increase in global temperatures could lead to a loss of GDP in developing countries of 2-9% per year. It should be noted, however, that the direction of change in precipitation is uncertain. Such changes will affect countries dominated by agriculture the most, and these tend to be the poorer countries. Climate change can affect the agricultural sector in at least three ways. First, changes in temperature and precipitation leads to changes in soil moisture. The impact of this can be mitigated by irrigation but only to the extent that water is available. Second, temperature directly impacts crop yields, and third, elevated concentrations of carbon dioxide may favour the growth of certain crops over others⁽³⁰⁾.

Political Factors

It has also been found that changes in access to natural resources may affect different population groups differently. If fuelled by government policies or underpinned by existing animosities, such inequalities could contribute to increased risk of conflict. This dynamic may be further exacerbated by patronage and poor governance, for example where authorities favour one group over another. In the African Sahel, population movements caused in part by environmental change put additional pressure on existing rivalries or grievances or are purposefully used to mobilize around existing/ dormant schisms⁽³¹⁾. A study from Nepal in 2006 concluded that “resentment over discriminatory natural resource access is one of the underlying political causes” of the conflict in Nepal⁽³²⁾. The same study reports that “socially dominant and relatively wealthier villagers capture most of the benefits from community forests, while poorer members bear a disproportionate share of the management costs”. According to Barnett, well financed government, infrastructure, democratic participation, among other factors, contribute to the resilience of a state against environmental stress.

RESEARCH GAPS

The review of existing literature reveals that there are several important research topics in the study of environmentally induced conflict. This section identifies a number of research gaps that this study tries to address to contribute to current literature base. First, environmentally induced conflict has become an increasingly important concept in conflict management research. The

30 World Bank (1985). *The Smallholder Dimension of Livestock Development*. Operation and Evaluation Department. Internal Report. The World Bank, Washington D.C.

31 Suhrke, A. (1993). *Pressure Points: Environmental Degradation, Migration and Conflict*. In, *Workshop on Environmental Change, Population Displacement, and Acute Conflict*, held on June, 1991, Institute for Research on Public Policy, Ottawa.

32 USAID (2006): *Crop-sharing Improves Lives in Darfur*, Available at: http://www.usaid.gov/stories/sudan/ss_sudan_crop.html

existing literature fails to provide a clear definition of “environmentally induced conflict,” and the use of this concept has been rather inconsistent. This study defines environmentally induced conflict as a conflict induced by scarcity of resources with focus on drought and empirically tests these two dimensions of diversification by investigating their relationship with other variables.

Second, the concept of environmentally induced conflict has not been systematically studied. Insufficient attention has been paid to examine the factors that impact the level of the concept of environmentally induced conflict mostly in East Africa. There is therefore a need in developing a conceptual model that explains complex causal relationships between various contextual factors and environmentally induced conflict. This study fills in this research gap by exploring the concept of environmentally induced conflict in Northern Kenya region. Finally, previous studies have identified a number of structural and environmental factors that impact on environmentally induced conflict. However, relatively little research has been conducted to systematically examine the impact of various contextual factors induced conflict and an overall theory of environmentally induced conflict remains to be developed. Some scholars have proposed diversifying environmental conflict and improve conflict management. Unfortunately there has been very fragmented empirical evidence to evaluate this diversification proposal. This study proposes an integrated model to explore the predictors of scarce resource conflict by including an analysis drought as a potential determining factor of environmentally induced conflict.

HYPOTHESIS

The study will be guided by the following four hypotheses:

Hypothesis 1

H₁ -Social factors impact on environmentally induced conflict in Northern Kenya.

H₀ -Social factors don't impact on environmentally induced conflict in Northern Kenya.

Hypothesis 2

H₁ -Economic factors influence environmentally induced conflict in Northern Kenya.

H₀-Economic factors don't influence environmentally induced conflict in Northern Kenya.

Hypothesis 3

H₁ -Political factors impact on environmentally induced conflict in Northern Kenya.

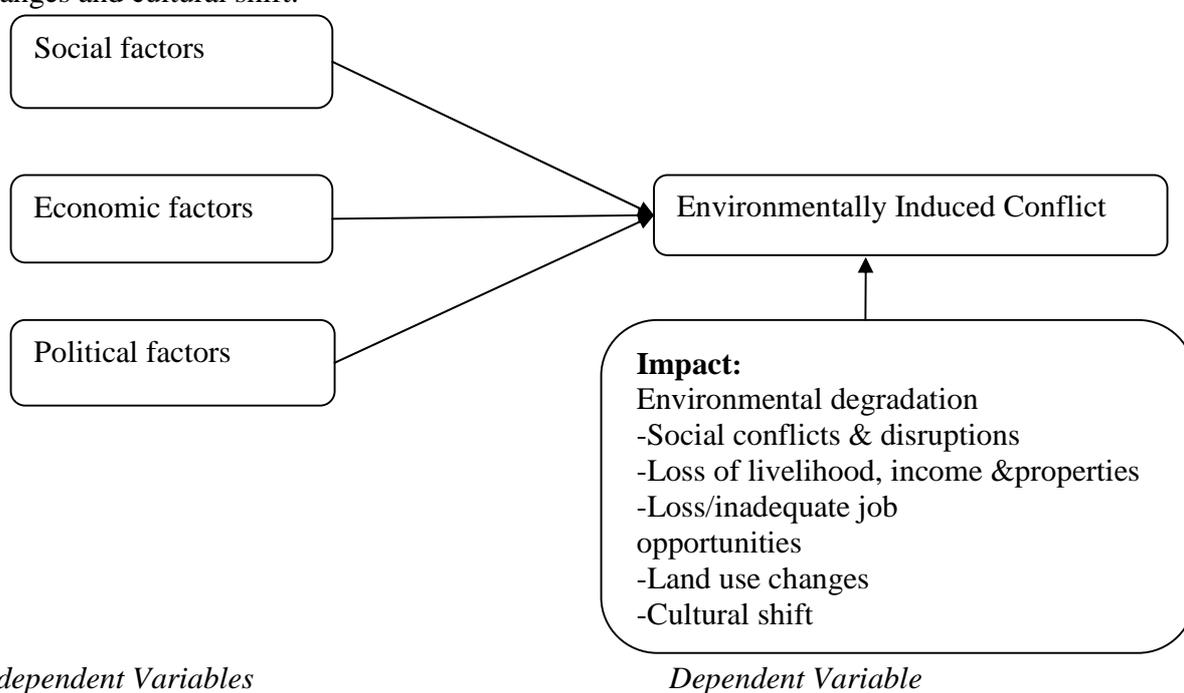
H₀ -Political factors don't impact on environmentally induced conflict in Northern Kenya.

CONCEPTUAL FRAMEWORK

A conceptual framework is a diagrammatical research tool intended to assist the researcher to develop awareness and understanding of the situation under scrutiny and to communicate this. A conceptual framework is used in research to outline possible courses of action or to present a preferred approach to an idea or thought. It can be defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. The interconnection of these blocks completes the framework for certain expected outcomes.

An independent variable is one that is presumed to affect or determine a dependent variable. It can be changed as required, and its values do not represent a problem requiring explanation in an analysis, but are taken simply as given. The independent variables in the study will be the three objectives under study which include: social factors (e.g. education, health, population pressure, and expectations), economic factors (e.g. income, job multiple work opportunities, and short term work) and political factors (e.g. capacity, financial inadequacy, instability, and willingness).

A dependent variable is what is measured in the experiment and what is affected during the experiment, it responds to the independent variable. The dependent variable in the study will be Environmentally Induced Conflict which lead to environmental degradation, social conflicts and disruptions, loss of livelihood, income and properties, loss/inadequate job opportunities, land use changes and cultural shift.



Independent Variables

Dependent Variable

Figure 2: Conceptual Framework

RESEARCH METHODOLOGY

The study was descriptive. This gave a clear picture of the study under investigation. A qualitative approach was adopted to produce the descriptive data to assess the concept of environmentally induced conflict in Northern Kenya. A qualitative study was chosen, and as a result, non-probability sampling methods were made use of. The implications of making use of non-random samples, are that the sample size is often unknown in advance, with the qualitative researcher selecting cases as the research process unfolds. According to the literature, for qualitative researchers “it is their relevance to the research topic, rather than their

representativeness which determines the way in which the people to be studied are selected”⁽³³⁾ Whereas quantitative researchers tend to make use of mathematical theory with a great deal of pre-planning, the focus of the qualitative researcher is based on specific content of a case for selection purposes. As a result, information rich subjects was chosen for focused, in- depth study, so that the researcher can obtain an in- depth understanding of the situation in question.

Primary data was collected by use of direct personal interviews, self-administered questionnaire, and group discussions. Secondary data was also employed. Review of the available literature on the concept of environmentally induced conflict in Northern Kenya either published or unpublished was explored. Journals, Periodicals, newspaper and on-line resources like internet also formed part of the secondary data.

After collecting and recording the data from the research participants, a process of open coding was used to in order to break down the categories into key themes which arise from the data and can then be grouped. Once key themes were established, the information which speaks to individual key themes was entered into a computer by making use of a cut- and- paste technique. Relationships were then looked at, as well as causes and changes within each theme, until a pattern emerges. Both the explanations and conclusions which arise from the data analysis procedure were verified with the participants of the study. This was done, to ensure that the participants agree that the conclusions which the researcher had made are indeed a reflection of their perspectives and responses. SPSS computer software was employed to analyze data and interpretation in order to draw conclusions.

A CASE STUDY: THEORETICAL DISCUSSION

Theory of Population and Environment Outlined

A general theory of population and environment can be conceived by modifying the demographic transition theory. Simply stated, the demographic transition theory refers to a shift from high to low mortality and fertility as a consequence of economic and social development. Because mortality decline tends to start before fertility decline, population usually grows rapidly during the transition. Eventually, both mortality and fertility tend to stabilize at low levels, completing the demographic transition^(34, 35;36). This is more so in the case of mortality. Fertility has not yet stabilized even in most industrialized countries where very low levels of fertility have been achieved over the last few decades. When fertility stabilizes it may amount to irregular

33Preece, R. 1994. *Starting Research – An Introduction to Academic Research Dissertation Writing*. Great Britain. Pinther.

34Davies, S. (1996). *Adaptable Livelihoods. Coping with Food Insecurity in the Malian Sahel*. New York: Macmillan Press limited.

35Davies, S., 1993. Are Coping Strategies a cop out? *IDB Bulletin*, 24: 60-72.

36Cohen R., and Bradley M. (2010), *Disasters and Displacement: Gaps in Protection*, in *Journal of International Humanitarian Legal Studies*, vol. 1, 2010.

fluctuations within certain limits. In the proximate determinants of mortality are not categorized in the demographic literature as such. However, many factors such as disasters, accidents, wars, famines, and epidemics can be labeled as the proximate determinants of mortality and migration. There is obviously need for more research in this area. General, before transition the death rate usually fluctuates more than the birth rate, but after transition, the birth rate is likely to fluctuate more than the death rate. The demographic transition theory is based mainly on the experience of Western European and North American countries. In these countries, the transition from high-high to low-low has typically been accompanied by increased standards of living through improved education, urbanization, technological development, and economic growth. The demographic transition theory, in this sense, can be conceived as a part of a general theory of modernization. For the most part, the demographic transition theory, like most other demographic, sociological, and economic theories, takes the natural resources and biophysical environment as given and assumes that they affect demographic processes only through sociocultural and economic conditions. The development is perceived as independent of demographic changes and changes in the resource base and the environment. The demographic transition theory has also been criticized for its poor predictive power. Despite its criticisms and weaknesses, the demographic transition theory still presents the single most useful broad theoretical framework for understanding changes in population size, growth, structure, and distribution in an area, as these evolve along some developmental path.

Migration Theory

Migration is considered as one of the defining global issues of the early twenty-first century, as more and more people are on the move today than at any other point in human history⁽³⁷⁾. Ravenstein⁽³⁸⁾ concluded that migration was governed by a “push-pull” process; that is, unfavorable conditions in one place (oppressive laws, heavy taxation, etc.) “Push” people out, and favorable conditions in an external location “pull” them out. Ravenstein's laws stated that the primary cause for migration was better external economic opportunities; the volume of migration decreases as distance increases; migration occurs in stages instead of one long move; population movements are bilateral; and migration differentials (e.g., gender, social class, age) influence a person's mobility. Lee (1966), reformulated Ravenstein's theory to give more emphasis to internal (or push) factors and outlined the impact that intervening obstacles have on the migration process. He argued that variables such as distance, physical and political barriers, and having dependents can impede or even prevent migration. Lee pointed out that the migration process is selective because differentials such as age, gender, and social class affect how persons respond to push-pull factors, and these conditions also shape their ability to overcome intervening obstacles.

37IOM (2007). Discussion Note: Migration and the Environment. MC/INF/2008, International Organization for Migration.

38Ravenstein, E. G. (1889). The Laws of Migration. *Journal of the Royal Statistical Society*, 52(2):241-301.

Furthermore, personal factors such as a person's education, knowledge of a potential receiver population, family ties, and the like can facilitate or hinder migration (³⁹). In the case of Bangladesh, migration significantly take place towards cities specially Dhaka after the independence in 1971. Increasing industrialization, commercialization, education and job opportunities highly influence the people for this movement. Economic forces are one of the root causes of migration and people tend to search for a better living condition anywhere, but this alone cannot shape the migration patterns (⁴⁰). Other factors are role of nation states, geographical proximity, institutions, social networks, and cultural and historical factors in creating new migration patterns (⁴¹). Land degradation and other environmental problems can also one of the root causes of migration motivation especially for those who depends on their livelihoods. According to the World Migration Report (2010), estimated number of international migrants is 214 million in 2010 that could reach 405 million by 2050. This is the case of migration theories in 21st century. As for example Dual Labour Market theory, where migrants are influenced by pull factors of developed countries (⁴²). They also sent home remittances to their families, that also contributing country's economic development. For example, remittances are the major sources of foreign currency in Bangladesh.

Resilience Theory

Holling et al., (⁴³) introduced the term resilience as a concept to help conceive the capacity of ecosystems with alternative attractors to be sustained in its original form with subject to perturbations, as discussed by Gunderson (⁴⁴), Folke (⁴⁵), Scheffer (⁴⁶) and Folke *et.al.* (⁴⁷). The theory originally developed to explain multiple coping capacities of ecological systems but applied to human system the theory provides linking ideas whether the migration is forced or voluntary and why people still remain in their origin to resist themselves by several persistence, adaptation and transformational strategies. However, the stability of the ecological system is crucial to support the rural communities. Simply put, the vulnerable rural communities are less

39B. Lee 2004. Conflict generation, conflict management and self-organising capabilities in drought-prone rural communities in north eastern Nigeria: A case study. *Journal of Social Development in Africa*, 19, pp. 25–48. Final/2, Brussels.

40Salt, J. (1987). Contemporary Trends in International Migration Study. *International Migration*, 25:241-51

41Hass, H. (2008). Migration and Development: A Theoretical Perspective. Working Paper No. 09, International Migration Institute, James Martin 21st Century School, University of Oxford.

42Jennissen, R. (2007). Causality Chains in the International Migration Systems Approach. *Population Research and Policy Review*, 26(4):411-436.

43Holling, C. S., Carpenter, S. R. and Kinzig, A. (2004). Resilience, Adaptability and Transformability in Social-ecological Systems. *Ecology and Society*, 9(2), Art.5.

44Gunderson, L. H. (2000). Ecological Resilience: In Theory and Application. *Annual Review of Ecology and Systematic*, 31:425-439.

45Folke, C. (2006). Resilience: The Emergence of a Perspective for Social-ecological Systems Analyses. *Global Environmental Change*, 16:253-267.

46Scheffer, M. (2009). *Critical Transitions in Nature and Society*. Princeton University Press, Princeton, New Jersey, USA.

47Folke, C., Carpenter, S. R., Walker, B., Scheffer, M., Chapin, T. and Rockström, J. (2010). Resilience Thinking: Integrating Resilience, Adaptability and Transformability. *Ecology and Society*, 15(4), Art. 20.

aware of the complex environmental systems and subsequent change in their territorial system, and thus have little capacity to address the challenges made by environmental disasters, e.g. dynamics of climate change. However, they do perceive the risk and apply multiple survival strategies until the system collapses and reaches the critical threshold levels as indicated by Folke *et. al.* (⁴⁸). In that case, urban regions must accept the collapsed rural communities in the different ranges of time as they need to regain the capacity to sustain them as well as support household resilience in their origin. Two main aspects have been highly linked to resilience of the local system/areas viz., adaptation and collapse and both of them have been linked to several multiple aspects that perceive the strength of resilience e.g. diversification of livelihoods/income choices, social networks, flexibility of mechanisms/choices and transformation.

To measure the impacts of environmental changes on a community, three independent variables should be taken into consideration viz., the strength and magnitude of the change; the socio-economic, cultural and political implications of the change; and the relative capacity of the vulnerable community to cope up with the change. Resilience theory focuses on the third variable as the key in determining to what extent the system will be able to cope with the disorder without transformation to a qualitatively new state (⁴⁹). Resilience theory abandons the idea of coping capacity as a function of a system's rigid response to change and the crucial point is not whether the system is able to resist a quantitative change, but the more important consideration that whether it is able to retain its qualitative structure: a dynamic, rather than static, stability. Thus a resilient system is one which has the capacity to withstand shocks and surprises and, if damaged, to rebuild itself. Thus this approach fits with uncertain and multiple challenges of environmental change and also incorporate other aspects of change e.g. social, political and economic as compensatory of each other to support the resilience. For example, an environmentally stressed community might get support from other external resilient communities either socially, economically or politically to avoid the collapse. Interdependence exists in that context when motivations for migration often explicitly describe a result of environmental change or economic factors but has a significant link with social, political or even cultural factors (e.g. for example in the slums, people from different regions may have different cultural characteristics and in the rural areas cultural bonding, events etc. are related to paddy harvesting period that might be restrain factors for migration).

48Folke, C., Carpenter, S. R., Walker, B., Scheffer, M., Chapin, T. and Rockström, J. (2010). Resilience Thinking: Integrating Resilience, Adaptability and Transformability. *Ecology and Society*, 15(4), Art. 20.

49Galaz, V., Moberg, F., Downing, T., Thomalla, F. and Warner, K. (2008). Ecosystems under Pressure. A policy brief for the International Commission on Climate Change and Development. Stockholm Resilience Centre, Stockholm Environment Institute, United.

Conflict and Human Needs Theory

Burton et al.,⁽⁵⁰⁾ maintains ascertains that conflicts are deeply rooted in human needs, and when fundamental human needs become threatened, superficial compromises are not considered for conflict resolution. Burton et al., supports reinforces this approach, stating ascertaining that conflict exists when fundamental human needs for security, identity, recognition and development are not met. Basic human needs theory has many non-psychological components which have found expression in the physical needs, such as the need for safety, but is an approach which originates in the psychological group of approaches to the causes of conflict, generally following the ideas of Abraham Maslow, who recognized the existence of psychobiological needs as a universal human characteristic. According to Sibanda⁽⁵¹⁾, environmental conflicts are normally based on human needs, and at a local level tend to be over the allocation, distribution and management of natural resources. Because needs are universal and fundamental to human nature, it is often theorized that much of conflict is occurs when basic human needs become threatened, such as the need for security, identity, recognition and development. With regard to the relationship between development, environment and conflict, it is development which is imposed on a society that results in conflict, rather than negotiated development. The very nature of development is potentially conflictual, as it destroys some things, (in this case that is the environment) in this case and on the other hand creates some things, that is such as an alternative source of power in the form of nuclear power on the other hand. However, where needs theory further aligns itself with environmental conflict further is that, although superficially it might appear that people are competing over resources, the real causes of the conflict are usually much deeper. The actual cause maybe that the community needs to be involved, recognized and acknowledged in the development process which is taking place. Should the developer not address or recognize these needs, conflict may.

By taking into account the needs for the community to be involved, recognized and acknowledged in development, conflict direct negotiations between the parties may be eliminated. Direct negotiations which allow parties to deal with differences in perceptions which they may have of one another which may reduce have lead to conflict escalation maybe eliminated. Open exchanges of information and understanding each others' interests is important in order to prevent alienation. Identity theory stresses that human beings will strive to satisfy their needs at any cost, until they are met satisfactorily⁽⁵²⁾. With regard to the environmental conflict at Thyspunt, Oyster Bay in the Eastern Cape, all the stakeholders involved from environmental

50Burton T., Dawkins S., Young L., Coram A. (2008), *Towards a Convention for Persons Displaced by Climate Change: Key Issues and Preliminary Responses*, available at: <http://www.ias.uwa.edu.au/new-critic/eight/?a=87815>.

51Sibanda, H.M. 2000 The Implemetation of the National environment Youth Corps Project, experiences to date . United Nations Development Programme p29-52.

52Wu, H. and Wilhite D.A., 2004. An operational agricultural drought risk-assessment model or Nebraska, USA. *Natural Hazards*. 33: 1-21.

groups, government, homeowners and so forth others, all have the need to be involved and acknowledged.

The Present State of Theory

Population and resource relationship is the most basic underlying subject to all the social sciences. In recent years, the literature on population, resources, and environment has grown rapidly. The majority of the literature on population and environment can be categorized into three groups. The first group presents a pessimistic future environmental scenario under rapidly expanding Third World population, a worsening poverty situation, and the pressing needs for improving the quality of life for large masses in the developing world.

In direct contrast with the environmentalists' view are the views of a few "technological optimists," mostly neoclassical economists. This group presents a world view that does not acknowledge any limits to growth. From this perspective, market mechanisms and technological developments are seen as answers to all resource problems, and population growth is seen as an asset, not a hindrance, to development. There are, however, many researchers who fall between these two extremes (^{53;54}). These researchers recognize the significance of population growth in environmental degradation but do not see population as the main or direct cause of it. This middle perspective can be divided into several categories depending on what it emphasizes in the study of population and environment. Working within the "world systems" perspective, some researchers argue that in developing countries both demographic and environmental conditions are shaped by international economic and political forces. Slightly different from this perspective is what is sometimes labeled as the "neo-Marxist political economy" perspective. According to this perspective, profit seeking and capital accumulation require the unsustainable exploitation of natural resources, and socioeconomic differentiation in a society creates a situation in which the "haves" place heavy demands on the world's resources, primarily driving environmental changes while the subsistence needs of the "have nots" put marginal environments under pressure (⁵⁵). This viewpoint emphasizes the role of the means of production in the global economy of international capitalism.

Some researchers argue that the obstacles to the proper allocation of costs are the main cause of environmental degradation. These obstacles may originate from an imperfect information regarding resources or due to an artificial distortion of prices through subsidies for many environmentally destructive services and technologies (⁵⁶). This viewpoint is sometimes categorized as the "neoclassical political economy" perspective. There is another middle perspective which argues that improper use of technology is the main cause of environmental

53Myers, N. 1992. Population/environment linkages: Discontinuities ahead. *Ambio*2 1: 116-1 18.

54Shaw, R. Paul. 1992. The impact of population growth on environment: The debate heats up. *Environmental Impact Assessment* 12: 1 1-36.

55Myers, N. 1992. Population/environment linkages: Discontinuities ahead. *Ambio*2 1: 116-1 18.

56 World Bank (2007b): West Africa Agricultural Productivity Program (WAAPP) Project (Burkina Faso, Ghana, Mali, Senegal): environmental and social management framework plan (ESMFP). Report Number E1553.

degradation. According to this perspective rapid increases in population can worsen the problems created by the improper use of technology. Although the growing concern about the role of population growth in environmental degradation is a relatively recent phenomenon, the study of the population-resources (especially food) relationship is not new. Malthus and Boserup are the two most important names in the literature on population and environment. As early as the late 18th century, Thomas Malthus laid the foundation for a theory of population-resource interrelationships by proposing that a geometrically growing population tends to outrun an arithmetically growing food supply.

According to Malthus, over the long run population and resources remain in a state of equilibrium mediated by the available technology of food production and the prevailing living standard⁽⁵⁷⁾. Malthus assumed that the natural resources are fixed and he is often criticized for not including a possibility of technological change. Ricardo and Mill, in general, supported Malthus' thesis that population growth beyond a certain density is harmful to human welfare and the economic development⁽⁵⁸⁾. Other classical social theorists of the 18th and 19th century such as Marx, Weber, and Durkheim, also paid some attention to natural resources and the environment.

Malthus' views were the basis for discussion of population and resources for more than 150 years until challenged by Ester Boserup in 1965. Malthusian theory on the grounds that it exclusively focuses on food-production technology and ignores the effects of technological changes in other sectors and the effects of environmental changes. She also criticized Malthus for not considering the effects of population change on both technology and environment. Refuting the Malthusian assumption about unchanging technology, Ester Boserup postulated that increasing population pressure itself induces technological change, leading to a more intensive use of land. This became popularly known as "Boserup's land-intensification hypothesis." Boserup argued that under given agroclimatic conditions, the agricultural system slowly shifts from forest fallow to annual multiple cropping due to increasing population pressure. Recently, Bilsborrow⁽⁵⁹⁾ presented a theoretical framework for studying the effects of population change on agricultural development in rural areas of developing countries. Bilsborrow builds upon Ester Boserup's land-intensification hypothesis and Kingsley Davis' theory of demographic change and response⁽⁶⁰⁾, and he suggests a set of several possible demographic and non-demographic responses to

57 Lee, R.D. 1986. Malthus and Boserup: A dynamic synthesis. Pages 96-130 in D. Coleman and R. Schofield, eds. *The State of Population Theory: Forward from Malthus*. Oxford: Basil Blackwell.

58 Keyfitz, Nathan. 1991. Population and development within the ecosphere: One view of the literature. *Population Index* 5 1 5-22.

59 Bilsborrow, Richard E. and H.W.O. Okoth Ogenko. 1992. Population-driven changes in land use in developing countries. *Ambio* 2 1 :37-45.

60 Lee, R.D. 1986. Malthus and Boserup: A dynamic synthesis. Pages 96-130 in D. Coleman and R. Schofield, eds. *The State of Population Theory: Forward from Malthus*. Oxford: Basil Blackwell.

increases in population density, such as land intensification through irrigation, fertilizer, and pesticide use, land intensification, higher age at marriage, contraception, abortions, increased abstinence, and net out-migration. He has argued that a particular response or a combination of responses depends upon the stage of agricultural development in that region. Several factors, such as the existing level of living, availability of potentially cultivable land, availability of off-farm employment opportunities, size and distribution of land holdings, potential for labor and technological intensification, rural fertility level, rural-urban population distribution, and existing crop structure, determine the type of response(s) to be expected. He emphasizes the role of socioeconomic and institutional factors in determining the nature of such responses. Bilsborrow has criticized Kingsley Davis for not including non-demographic responses to increases in population pressure and not specifying the nature, importance, and relationships between different possible responses in his change-response formulation. He has also criticized Boserup for not including "land intensification," mainly through rural-to-rural out-migration, as a response to increases in population density.

The theory of demographic change and response builds on the demographic transition theory by specifying socio-demographic responses to mortality decline and population growth during the transition phase. Bilsborrow's criticism of Boserup for not including "land extensification" in her theory is somewhat problematic. In fact, according to Boserup⁽⁶¹⁾, the opportunities for land extensification are exhausted first; then further increases in population density lead to land intensification by substituting traditional farming practices with mechanization or bio-chemical intervention or both. Another author, notably Kumar⁽⁶²⁾ have also recognized that Boserup's formation fully included opportunities for land extensification. However, the manner in which Boserup included land extensification in her theory is problematic because in most populations, land intensification does not necessarily wait for an exhaustion of land-extensification opportunities. Land intensification starts well before all potentially cultivable land is put to use.

This phenomenon is quite evident in many Latin American and Asian countries. For example in the case of India, several irrigation schemes started in the second half of the 19th century, while considerable land extensification continued until after the middle of the 20th century. This argument is further supported by Binswanger and Pingali, who argue that medium and large-scale government-induced infrastructural investments become essential long before all potentially cultivable land is brought into agriculture⁽⁶³⁾. Pingali and Binswanger believe that infrastructural investments can play an important role in speeding up the process of land intensification. They distinguish between farmer-based innovations, and science and technology-

61 Lee, R.D. 1986. Malthus and Boserup: A dynamic synthesis. Pages 96-130 in D. Coleman and R. Schofield, eds. *The State of Population Theory: Forward from Malthus*. Oxford: Basil Blackwell.

62Kumar, Joginder. 1973. *Population and Land in World Agriculture: Recent Trends and Relationships*.

63Pingali, P.L. and Hans P. Binswanger. 1987. Population density and agricultural intensification: A study of the evolution of technologies in tropical agricultural. Pages 27-56 in D.G. Johnson and R.D. Lee, eds. *Population Growth and Economic Development: Issues and Evidence*. Madison: University of Wisconsin Press.

based innovations. The farmer-based innovations include changes in land use, land investments, development of organic fertilizer use, and the evolution of the tool systems. Science and technology-based innovations include development of agricultural industry, science-based induced technological change, and development of agricultural research institutions. The authors argue that the farmer-based innovations can only support slow growing populations. For rapid population growth they need to be supplemented with science and technology-based innovations. Kumar (64) in a detailed analysis of country-level data finds support for Boserup's intensification hypothesis. Kumar observes that high agricultural density, resulting from increasing population, leads to more intense cultivation of land rather than land abandonment and migration to urban areas.

Although Kumar does not explicitly refer to the "change and response theory," its implicit application is apparent in his work. Kumar also finds responses to rural population pressure similar to those mentioned in Bilsborrow (65). One important difference between Kumar's findings and Bilsborrow's formulation is that, for Kumar, migration to nonagricultural areas is more due to "pull" factors than to "push" factors. Around the same time, Boano (66) also finds support for Boserup's hypothesis and formulates both demographic and non-demographic responses to increasing rural population density. His findings were similar to those discussed in Kumar's work and those later conceptualized by Bilsborrow (67).

In a historical study of population growth, agricultural productivity, and land degradation in Machakos district in Kenya, Tiffen and Mortimore (68) also find support for Boserup's hypothesis. They observe that colonial policies before the Second World War, when population growth was relatively slower, were mainly responsible for low agricultural productivity and widespread land degradation in the district. But after the Second World War, when the population of the district grew much more rapidly, it was accompanied with improved food production and considerable improvements in land degradation.

In a review of population pressure effects on environment and land intensification in six sub-Saharan African countries, Lele and Stone (69) question the appropriateness of Boserup's hypothesis by showing that higher population densities do not necessarily result in higher yields, better inputs, and larger incomes, especially for small farmers in resource-poor areas. They point

64Kumar, Joginder. 1973. *Population and Land in World Agriculture: Recent Trends and Relationships*.

65Bilsborrow, Richard E. and H.W.O. Okoth Ogendo. 1992. Population-driven changes in land use in developing countries. *Ambio* 2 1 :37-45.

66Boano C., Zetter R., Morris T. (2008), *environmentally displaced people. Understanding the linkages between environmental change, livelihoods and forced migration*, Oxford: Refugee Studies Centre.

67Bilsborrow, Richard E. and H.W.O. Okoth Ogendo. 1992. Population-driven changes in land use in developing countries. *Ambio* 2 1 :37-45.

68Tiffen, M. and M. Mortimore. 1992. Environment, population growth and productivity in Kenya: A case study of the Machakos District. *Development Policy Review* 10:359-387.

69Lele, Uma J. and Steven W. Stone. 1989. *Population Pressure, the Environment, and Agricultural Intensification: Variations on the Boserup Hypothesis*. Washington, D.C.: The World Bank.

at a number of inherent limitations in Boserup's formulation, such as: Boserup did not hypothesize rapidly-rising densities and highly-skewed distribution to land in the developing countries; she did not conceptualize substantial concentration of population even in the land-abundant countries; she did not visualize the land-mining tendency among poor farmers; and she overlooked the fact that for poor households there is often a built-in conflict between social and private gains in having a large family. Lele and Stone suggest that in such situations a "policy-led intensification" is needed to supplement the demand-driven (autonomous) intensification suggested by Boserup. In a more recent descriptive study of 38 sub-Saharan African countries, in sub-Saharan Africa a "population, agriculture, and environment nexus" exists in which the effects of rapid population growth, stagnation in agriculture, and environmental degradation are mutually reinforcing. The findings from Cleaver and Schreiber's study are similar to those from Lele and Stone's work. Dasgupta (⁷⁰) also argues that in situations of extreme poverty and highly-degraded environment, Boserup's theory does not work. According to Dasgupta, in such societies people are often caught in a "vicious cycle" of poverty-population growth-environmental degradation-poverty. The 1992 World Development Report (⁷¹) and the World Resources 1994-95 (⁷²) also refer to such vicious cycles often observed in the poor areas of developing countries.

There is a set of important ideas for understanding population-environment dynamics. According to Lele (⁷³), the complex dynamics of population and the environment should be visualized as a family of transitions. He describes nine different sets of transitions: demographic, epidemiologic, forestry, energy, education, urbanization, agriculture, technology, and toxicity, and suggests that efforts should be made to study their interconnectedness in order to understand the dynamics of population and the environment. He, however, does not identify the possible relationships between various members in his family of transitions and fails to integrate these transitions into a theoretical framework. Lele et al., present yet another useful theoretical idea, popularly known as the "induced innovation hypothesis. According to this hypothesis, in agriculture the constraints imposed on development by an inelastic supply of labor may be offset by advances in mechanical technologies, while the constraints imposed by an inelastic supply of land may be offset by biological technology. The examples of the first situation are typical of developed countries, while examples of the second type are found in developing countries in general. The Lele et al., hypothesis helps to explain why large-scale mechanization of agriculture is not very appropriate in developing countries that have an unlimited supply of labor and limited land.

70Dasgupta P. 1993. *An Enquiry into Well-Being and Destitution*, Clarendon Press, Oxford.

71World Bank (1985). *The Smallholder Dimension of Livestock Development. Operation and Evaluation* Department. Internal Report. The World Bank, Washington D.C.

72World Resources Institute (WRI). 1992a. *Computerized Data Base 1992*. New York. World Resources Institute (WRI). 1992b. *World Resources 1992-93*. New York: Oxford University Press.

73Lele, Uma J. and Steven W. Stone. 1989. *Population Pressure, the Environment, and Agricultural Intensification: Variations on the Boserup Hypothesis*. Washington, D.C.: The World Bank

A small group within sociology emphasizes the need and importance of including ecological variables in sociological analyses. This minority group is often labeled as the "human ecology" perspective. There is considerable variation within human ecology in the manner in which different proponents of human ecology have visualized the relationships between population and environment. The major building blocks in all these formulations are population, organization, environment, and technology, to use Duncan's terminology. By combining these four basic components (P, O, E, T), White (⁷⁴) created his famous "ecological complex" where the relationship between human population (P) and its environment (E) is mediated by socioeconomic organization (O) and technology (T). However, population is also seen as directly interacting with the environment. Before Duncan proposed his ecological complex, there were two other major perspectives within human ecology. Ogburn, conceptualizing the link between population and environment differently from Duncan, argued that humans must adapt not only to their natural environment as other animals but also to a social and a technological environment; society and technology are also viewed as environment and humans are expected to adapt to all three environments. Park differed considerably from Ogburn in his formulation in that he argued that technology and social organization should be regarded as an extension of humans. He defined a "social complex" consisting of population, its artifacts, and its non-material culture inside an environment interacting with it.

The contemporary sociological human ecology is based mainly on Amos Hawley's work and places major emphasis on the social organization. According to this perspective, changes in environment and technology affect the organizational structure which in turn brings about changes in population. From this perspective the relationship between population and environment must be formulated in organizational terms as organizational context is central to both population and environment changes. Frustrated with main stream sociology's neglect of biological and physical environment in general, and contemporary sociological human ecology's over-emphasis on social organization, recently Catton and Dunlap proposed a new perspective called "environmental sociology" (⁷⁵). Their environmental sociology paradigm is based on three basic assumptions which environmental sociologists believe have become essential to understand social change: (a) human beings are but one species among the many that are interdependently involved in the biotic communities that shape our social life; (b) intricate linkages of cause and effect and feedback in the web of nature produce many unintended consequences from human action; (c) the world is finite, so there are potent physical and biological limits constraining economic growth, social progress, and other societal phenomena.

74White, G. (1974). *Natural Hazards: Local, National and Global (Eds)*. New York: Oxford University Press.

75UNSO (1999). *Drought Preparedness and Mitigation in Sub-Saharan Africa*. New York: United Nations Office to Combat Desertification and Drought.

Much like the contemporary human ecology, the work of Urdal (⁷⁶) emphasizes the role of social organization in mediating the relationship between population and environment. Urdal, however, deviates from human ecology in that to him changes in population can also bring about changes in the social structure and technology which in turn can change the relationship between population and environment.

The equation $I=PAT$ developed by Ehrlich and Holdren more than two decades ago provides a multiplicative framework for studying the impact of population growth on the environment. In the equation, the impact (I) of a society on the environment is viewed as the product of its population size (P), per capita consumption or affluence (A), and a measure of environmental damage done by the technologies (T) used in providing each unit of consumption. In recent years, this equation has been extensively used by a number of researchers to demonstrate the role of population growth in environmental degradation. This equation has been criticized on several grounds. The main criticisms of the equation are that the results of this equation depend upon the level of aggregation and that the components P, A, and T in the equation are not independent, as implied by the equation (⁷⁷). In addition, the equation ignores international trade, assumes same causal components for all types of environmental impacts, and does not take into account the socio-cultural, political, and other institutional aspects of consumption and technology. In recent years, several attempts have been made to develop conceptual frameworks linking population, environment, and many related socioeconomic, cultural, and political factors diagrammatically. These efforts vary in their degree of complexity depending upon whether the model is generalizable or not, the direction of hypothesized causal links, and the variables included in the framework. While these efforts, usually in the form of box-and-arrow diagrams, cannot be called theories in any strict sense, they often provide useful structures for empirical research because they list specific variables and directions of causality. The examples of such efforts range from complex frameworks, such as UNFPA (⁷⁸), Turner and Meyer (⁷⁹) to simplistic ones, such as Kim (1993), Li (1991), May (1993). Some of these important frameworks are briefly reviewed in the following.

The conceptual framework developed by Shaw (⁸⁰) subsumes the $I=PAT$ formulation discussed above, and includes political considerations in addition to demographic and economic in determining environmental damage. Shaw distinguishes between "proximate" and "ultimate"

76 Urdal, H. (2005): People vs. Malthus: Population Pressure, Environmental Degradation, and Armed Conflict Revisited. *Journal of Peace Research* 42(4): 417–434.

77Lutz, Wolfgang. 1994a. Population and environment--What do we need more urgently: Better data, better models, or better questions? Pages 47-62 in Basia Zaba and John Clarke, eds. *Environment and Population Change*. Liege: Derouaux Ordina Editions.

78United Nations Population Fund (UNFPA). 1991. *Population, Resources and the Environment: The Challenges Ahead*. New York.

79Turner, B.L., II and W.B. Meyer. 1991. Land use and land cover in global environmental change: Considerations for study. *International Social Science Journal* 130:669-677.

80Shaw, R. (2011). Climate Disaster Resilience of Dhaka City Corporation: An Empirical Assessment at Zone Level. *Risk, Hazards & Crisis in Public Policy*, 2(2), Art.6.

causes of environmental degradation. He views population growth as a proximate cause or an aggravating factor in environmental degradation which if controlled can provide the much needed time to deal with more ultimate causes, such as poverty, consumption levels, and polluting technologies. The framework emphasizes the role of mismanagement policies in causing environmental degradation.

Lutz (⁸¹) developed a conceptual framework for studying population-development-environment interactions in Mauritius. The basic underlying philosophy of this model is that population is viewed as embedded in the socioeconomic sphere which in turn is embedded in the environment. People interact with air, water, land, and energy (the four basic life-support systems) through the man-made physical and organizational infrastructure. Humans also interact with other species which directly interact with life-support systems. The framework developed by Turner and Meyer (1991) for the "Earth Transformed Program" links the determinants and consequences of land-use/land-cover changes. The human activities that directly alter the physical environment by altering the characteristics and distribution of land surface are identified as proximate sources of change. These are governed by five underlying human driving forces: population growth, technological change, economic development, socioeconomic organization, and attitudes and beliefs. These driving forces are hypothesized to influence proximate sources of change via a host of factors operating at the "regional to local" level. None of the available frameworks for the study of population-environment interrelationships incorporates demographic processes and their proximate determinants. Moreover, none of the existing frameworks includes the possibility of direct links between population and environment variables. The relationship between population and environment is seen as mediated only through institutional variables.

THE FRAMEWORK

To understand the basic structure of relationships between population, development, and environment, a conceptual framework in the form of a box-and-arrow diagram has been presented in Figure 2.3. This framework draws considerably from Lutz (⁸²) and UNFPA (⁸³). The framework differentiates changes in population and environment from their underlying processes and proximate determinants and incorporates these processes and proximate determinants in the study of population and environment.

81Lutz, Wolfgang. 1994a. Population and environment--What do we need more urgently: Better data, better models, or better questions? Pages 47-62 in Basia Zaba and John Clarke, eds. *Environment and Population Change*. Liege: Derouaux Ordina Editions.

82Lutz, Wolfgang. 1994a. Population and environment--What do we need more urgently: Better data, better models, or better questions? Pages 47-62 in Basia Zaba and John Clarke, eds. *Environment and Population Change*. Liege: Derouaux Ordina Editions.

83United Nations Population Fund (UNFPA). 1991. *Population, Resources and the Environment: The Challenges Ahead*. New York.

Figure 1. A conceptual framework for the study of population and environment.

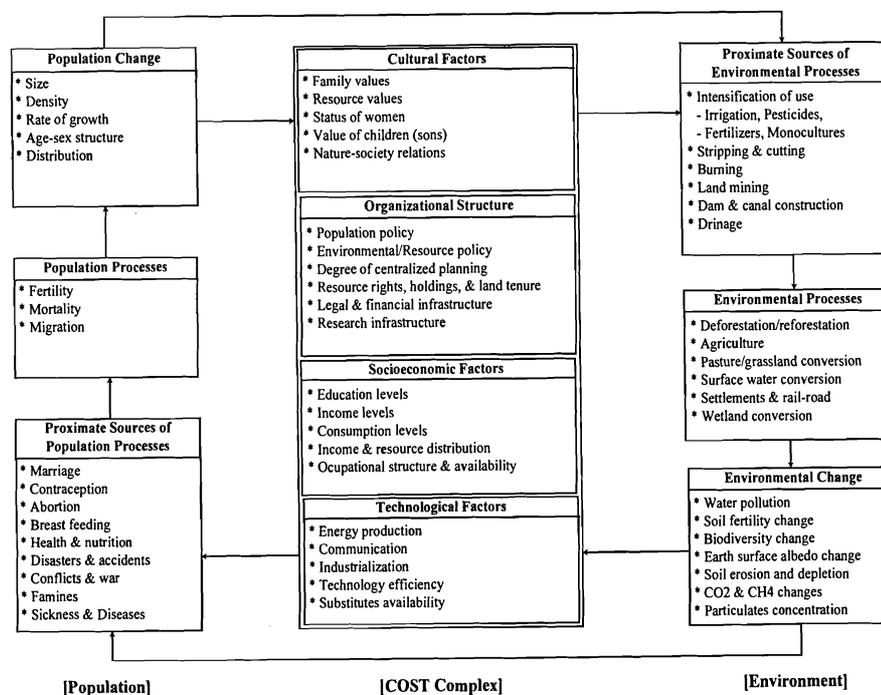


Figure 2.3: A conceptual framework for the study of population and environment
[Population] [COST Complex] [Environment]

On the population side, changes in population characteristics are caused by levels and trends in the three basic demographic processes: fertility, mortality, and migration. At the next higher level, the proximate determinants of these demographic processes are included. The proximate determinants of fertility are better known in the literature than those for mortality and migration. The proximate determinants of migration are by far the most complicated and vary considerably from one context to another. On the environment side of the framework also, environmental changes are seen as caused by a set of environmental processes, which are in turn governed by their proximate determinants. There are two major sets of processes--industrial metabolism and land-use, land-cover changes-that bring about changes in environmental dimensions⁽⁸⁴⁾. For simplicity, in the conceptual framework presented in Figure 2.3, only environmental changes relating to changes in land use and land cover and their proximate determinants are included. However, the framework can be generalized by including environmental changes due to changes

84Turner, B.L., and W.B. Meyer. 1991. Land use and land cover in global environmental change: Considerations for study. *International Social Science Journal* 130:669-677.

in the processes relating to industrial metabolism and their proximate determinants. It is also possible to replace land-use, land-cover changes and their proximate determinants with processes and proximate determinants relating to industrial metabolism. The proximate determinants of industrial metabolism are relatively more difficult to identify.

In this framework, changes in population and environmental characteristics are linked with changes in cultural, organizational, socioeconomic, and technological factors. In any society, these factors continually interact with each other and form a dynamic complex. This dynamic complex can be labeled the "COST Complex" if cultural (C), organizational (O), socioeconomic (S), and technological (T) factors are arranged in that order. The selection of the COST acronym is arbitrary and there is no reason for this particular ordering of factors. In the framework, this dynamic COST complex represents "development" broadly defined. In any society, a major part of the relationship between population and environment is expected to be mediated by the factors included in the complex. The COST complex is seen as directly affected by changes in population and environmental characteristics but affects them only through the proximate determinants of population and environmental processes on either side of the diagram. Specific variables under each category of the complex are listed in the framework. However, the list of variables included in the figure is not comprehensive and needs to be changed depending upon the context under investigation. The framework also hypothesizes direct links between population change and the proximate determinants of environmental processes, and between environmental change and the proximate determinants of population processes. The strength of these direct links is expected to depend upon the resource base and the institutional structure of a particular society.

According to the proposed theory, countries with shorter demographic transition periods are likely to experience rapid increases in the overall environmental degradation for a shorter time and the peak in the environmental degradation curve may be reached sooner than in those countries where mortality declined abruptly but fertility is either stagnating at a high level or declining very slowly. In such countries, the rapid rise in environmental degradation is likely to continue for a longer period of time. Changes in the global environmental dimensions are likely to aggravate individual country situations and make the tasks of environmental protection, demographic transition, and development increasingly difficult at the regional to local level. No discussion on population and environment can be complete without addressing the role of technology.

Technology plays a significant mediating role between population and environment. The importance of technology in sustainable development has been repeatedly stressed. Cleaner technologies and alternative life systems in the developed countries and the transfer of cleaner technologies to the developing countries are seen as most fundamental to a cleaner, healthier, and sustainable world. The use of advanced technology is the only answer to poverty eradication and development in poor developing countries experiencing rapid population increases. Verhagen

and Keulen ⁽⁸⁵⁾ argues that the sustainable development during the 21st century, when the population is likely to continue increasing, can only be achieved through changes in technology and efficient resource use, both human and physical. However, technological development is no panacea. It is both a cause and potential remedy of environmental problems. Simonse ⁽⁸⁶⁾ calls it the "paradox of technology." As societies modernize, often as a result of technological development, the sources of environmental degradation tend to change from traditional to modern, for example, in the case of air pollution from biofuels to fossil fuel combustion, and in the case of water pollution from poor sanitation to pesticides and other chemicals runoff. In general, one can say that technological development tends to reduce the traditional causes of environmental degradation while it increases the modern (or new) causes. In most societies, there is a period of overlap between traditional and modern sources of environmental degradation.

During this overlap period, there are often significant interaction effects that can magnify or mask the effects of two types of causes ⁽⁸⁷⁾. Because most developing countries are in the overlap stage, the transfer of technology to the developing countries may both increase and decrease the environmental degradation in those countries. Introduction of a new technology in a country may improve some dimensions while degrading some others. While the overall impact of technology transfer to the developing countries is expected to reduce overall environmental degradation, the individual projects can have both positive and negative impacts on the environment.

The production technologies now in use in most developing countries are far less efficient and more polluting than those available in the developed countries. A rapid transfer of cleaner and more efficient technologies from developed countries to the developing countries can play an important role in determining the course of economic development and environmental degradation in developing countries. As a result of progress in technology, the environmental degradation curves are expected to shift somewhat downward but overall maintaining their shape. This downward shift in environmental degradation curves may provide an opportunity for countries to develop in a less damaging manner than was possible earlier ⁽⁸⁸⁾.

85Verhagen, A and Van Keulen, H. 1999. Analysis of rainfall variability and agricultural risk in sub-Saharan West Africa. Poster presentation at 20-23 September 1999, Reading UK. Food and Forestry: Global change and global challenges.

86Simonse S. (eds.) 1998. *Conflict, Age & Power in North East Africa. Age Systems in Transition*, James Currey, Oxford.

87Goldsmith P. 1997. Cattle, Khat, and Guns: Trade, Conflict, and Security on northern Kenya's Highland- Lowland Interface. A Case Study, A paper prepared for the USAID Conference on Conflict Resolution in the Great Horn of Africa, June 1997, draft.

88World Bank (1985). The Smallholder Dimension of Livestock Development. Operation and Evaluation Department. Internal Report. The World Bank, Washington D.C.

Relatively new area of Conflict

Conflict is the result of two or more parties (individuals or groups) having, or perceiving to have, incompatible goals and interests and acting upon these differences. Conflicts arise from imbalances in human relations, whether in social status, access to resources, or power, which can lead to discrimination, poverty and oppression and environmental degradation. Conflict is a natural phenomenon that is an expression of a changing society. It does not necessarily lead to negative outcomes, but may be a constructive process of change. Violent conflict, on the other hand, always has negative repercussions. It refers to the actions, attitudes or systems that cause physical, psychological, social or environmental damage. Killing and intimidation are the most visible forms of violent conflict. Following the December 2007 elections exposed the fragile foundations beneath what appeared, to many observers, to be a relatively stable country. It revealed the extent to which ethnic divisions remain entrenched, the limitations of Kenya's security forces and the role of organized militias in politics. Furthermore, it suggested that beneath the institutions of democracy, politics in Kenya is characterized by an ethicized struggle for control of the state and the resources that come with it. These problems have not been banished or resolved by the National Accord, which brought an end to the post-election violence, nor by the limited reforms that have taken place subsequently. Peace and stability in Kenya remain fragile. Based upon ten years' experience of working to prevent violent conflict in Kenya, and drawing from a number of specific conflict analyses, *safer world* identifies two primary structural causes of conflict in Kenya. First are the national structures and policies which govern the way that state and natural resources are allocated between different regions and ethnic groups.

Secondly, a feature of the competition for access to resources has been mobilization around ethnic identity, resulting in deeply embedded mistrust and intolerance between some communities. In the context of these two structural causes a range of factors interact and fuel conflict at a local level across Kenya. Key factors include: poor leadership and governance, which prevents state institutions and policies from responding effectively to the needs of local people; the politicization of ethnicity, whereby ethnic identities are manipulated and inflamed to serve political agendas; ineffective and unaccountable security provision, and indeed in some places a complete absence of state security; the role of non-state armed groups, ranging from criminal gangs to rebel movements; high levels of youth unemployment; and the easy availability of small arms and light weapons. It is clear from this summary of conflict causes in Kenya, that clashes during election periods, such as the outbreaks of violence in 2007–8, are linked to deeper structural issues, and especially to the issue of access to natural resources. Land is particularly significant since this resource underpins the economy and livelihoods of much of Kenya's population. Historical grievances about the distribution of land between different ethnic groups have become highly politicized. Insecurity of access and tenure, poor land administration and weak land policy and legal frameworks are also important conflict factors, while forced evictions and resettlement processes are potential triggers of violence. These conflicts are

exacerbated by socio-economic marginalization, especially among unemployed youth. High levels of youth unemployment give rise to a cheap, disaffected and accessible pool of recruits for temporary political mobilization or longer-term induction into armed groups.

Nature of Environmental Conflicts

According to Jackson and Pradubraj (2004), the nature of environmental conflicts involve have the following characteristics: Environmental conflict is a result of scarcity and represents social struggles against uneven usage and allocation of resources; Environmental conflict reflects poor performance by governments in developing complex public policy; Environmental conflict involves the issues of power and rights; Environmental conflict is an inevitable consequence of development and can be constructive. Another important factor according to Sibanda (⁸⁹), is that environmental issues tend to involve everybody in the community and often arise over the benefits or trade-offs between environmental and economic issues. This factor is clearly demonstrated concerning proposed nuclear power stations, with the community objecting because of environmental degradation versus the need for alternative sources of power in order to support the energy needs of a developing energy –intensive country as South Africa.

Environmental conflicts have been defined as the fundamental struggles over the different capacities of social groups to meet their needs by gaining access to natural resources. The potential for group formation increases as people identify with one another due to because of their shared perception of grievance, and the meaning of group membership is influenced by the degree and character of the grievance. The more high- profile the group is, the greater the perception of group action; it ensures that the costs of challenges to authority are distributed across many individuals, and it increases the probability that these challenges will succeed. Examples of environmental disputes, when people were removed from their land in South Africa during apartheid onto land with limited resources, a lot great deal of conflict arose. This was so, because people attached value to the land from which they were being removed from. During the oppression years, conflict over the land went into a latent phase, only to erupt after 1994 when and all the tribes demanded restitution of the land. According to Saff (⁹⁰), the weakness of the state during South Africa’s political transition provided an opportunity for a small minority of urban poor to seize prime land previously unavailable to them, resulting in the establishment of informal settlements within affluent previously white suburbs such as Milnerton, Hout Bay, and Noordhoek. The affected communities were sympathetic to the plight of the squatters, but wanted them re- settled as case of “Not in my backyard syndrome”, by the communities affected

89Sibanda, H.M. 2000 The Implemetation of the National environment Youth Corps Project, experiences to date . United Nations Development Programme p29-52.

90Siddiqui, T. (2010). Climate Change and Human Insecurity: Migration as an Adaptation Strategy. Refugee and Migratory Movement Research Unit, Dhaka University, Bangladesh.

by the influx of squatters into their area. However was unsuccessful owing due to the nature of South Africa's transition.

Demonstrating the intrinsic value which land may have for individuals, and because the land is scarce, due to scarcity of it, conflicts may erupt. The Zimbabwean conflict over land is a prime example of a conflict which has taken place at great expense of the environment. It also demonstrates an important issue with regard to mishandled conflicts, which they never go away, but just go into a latent phase and are triggered by an incident which leads them into the escalation phase once again (⁹¹). The Zimbabwean conflict over land involving environmental degradation may be divided into five stages;-1) 1890 -1929: Colonialists grabbed the land and imposed white rule over the country. 2) 1930 – 1959: By the Land Appointment Act, fertile and good land was legally removed from the black population and millions of black Zimbabweans were pushed to marginal lands with limited resources, which resulted in land degradation setting in. 3) 1966-1979: Armed conflict arose, primarily over the land issue. The destruction of the farming infrastructure came into being, with dip tanks broken, streams polluted with chemicals, and forests were burnt by soldiers as they tracked the freedom fighters. 4) 1980-1997: The "Land resettlement programme which resulted in the opening of former conservation acres to a land-hungry black population, which cut down trees, overstocked and overgrazed the land, gradually de-vegetating areas. 5) The economy of the country declined rapidly, and the ruling party went about refocusing on the land issue which was unresolved. This resulted in land invasion, fragmentation of the land, and further plundering of natural resources (Sibanda, 2003).

Sibanda (⁹²) also refers to the impact of refugee activities, and how they may affect the environment. Refugees are usually a large number of people who enter into areas without any planning or any provisions made for them. We are currently experiencing this phenomenon in South Africa at the moment. In the area in which refugees they choose to settle in, they cause competition for resources like fuel-wood, timber for reconstruction, water and fertile land for cropping, thus and creating tensions between them and their receiving communities. Assistance maybe given, but only in the format of food; and not included is the energy to cook the food. In these camps, deforestation and cropping lead to de-vegetation. South Africa has enormous tourism potential, part of which arises from protected areas set aside for conservation purposes. St Lucia is a case in point, where in the past; conservation competed as a land use with subsistence agriculture, sugar plantations, afforestation and the Defense force. More recently, it has competed with the mining industry. Coastal dunes on Lake St Lucia's eastern shores contain significant mineral deposits, such as titanium. Ricahrds Bay Minerals, a subsidiary of Gencor

91Deutsch, M., Coleman, P.T., Marcus, E.C. 2006 *The Handbook of Conflict Resolution Theory and Practice* San Francisco : Jasssey-Bass.

92Sibanda, H.M. 2000 *The Implemetation of the National environment Youth Corps Project, experiences to date* . United Nations Development Programme p29-52.

and Rio Tinto Zinc, secured a prospecting right in the 1980's. After a lengthy EIA process, the question became whether tourism could outperform mining in enhancing the local development, and mining was found to be a less viable option, and the plans for mining were discarded. Though this was a victory for the conservationists, the expectations of job creation and ecotourism have not been met. Environmentalists are however extremely active regarding the importation of toxic materials into South Africa.

The most notorious case is that of Thor chemicals with a plant in the KwaZulu Natal midlands. Thor chemicals, took advantage of weak environmental regulation to import mercury waste for recycling. No evidence of successful recycling has ever been shown. Management of the mercury was so poor that it seeped into local rivers at lethal concentration levels and a number of workers at the plant died, while the health of others was seriously damaged by exposure to mercury. A commission of inquiry, by Professor Dennis Davis is currently under way. Hazardous waste landfills have often been highly contentious in South Africa. Local objections to poor management of sites have caused their closure, for example at Margolis in Gauteng, and Umlazi, south of Durban. Over a hundred years of mining have left a legacy of severe degradation (⁹³). Often, unfortunately, the companies who have caused the damage no longer exist, and the scale of the environmental damage. Recently, the Chamber of Mines revealed that over forty40 years of uranium mining has left a legacy of radioactivity in slimes on the Witwater and that will be too expensive to remedy. South Africa urgently needs a vigorous policy on the environmental impacts of mining.

With regard to development conflicts in coastal holiday towns, have come to light. The case of Arniston, a quaint coastal town in the Southern Cape was riven by strife over developmental profits and principles. The local ratepayers' association describes the undermining of transformation, a disregard for democracy at local level, and the manipulation of politicians by the wealthy in the town. With the result has been that, the local Rratepayer's' association has had to go to the high court to force its own council and a property developer to stop the building of an unauthorized structure. The local council officials behaved in a manner patently serving the interests of wealthy business people – to the detriment of the local fishing community – in the process flaunting local and national policy directives (⁹⁴).

The highly sensitive biodiverse hotspot and internationally renowned birding destination of Wakkerstroom is where the Department of Minerals and energy (DME) has handed a coal company prospecting rights to over 20 000 hectares of the district's pristine grasslands and wetlands. This permission was granted to the mining company, Delta Mining, without the

93Shaw, R. Paul. 1992. The impact of population growth on environment: The debate heats up. *Environmental Impact Assessment* 12: 1 1-36.

94Seifert R. 1993. *War and Rape. Analytical Approaches*, Women International League for Peace and Freedom (WILPF), Geneva.

knowledge or approval of any of the interested and affected parties, including the farmers whose properties the mining company intended invading with drill rigs and Lorries. The farmers concerned reacted by barricading their roads, and the farmers and local community have been joined by the country's most influential environmental organizations in two high- court applications to have the prospecting. The World Wildlife Foundation of South Africa (WWF-SA) , the Botanical Society and Birdlife South Africa are mobilizing their members for what is expected to be the most concerted challenge yet to the supremacy of mining over natural systems. At the same time the objectors are also challenging the Department of Mineral and Energy (DME) , that and the process by which the DME granted Delta mining prospecting rights was "fatally flawed" (95).

Overview of Northern Eastern Province

Northern Kenyan residents are seriously affected by environmentally induced conflict and cross-border conflicts over natural resources are mainly pastoralists. Pastoralism is a lifestyle most adapted to the harsh environments of ASALs. It involves moving animals, exchanging animals and sometimes selling animals to deal with cyclical droughts. The dry and pastoral lands occupy more than 80% of Kenya, and are home to approximately 4 million pastoralists who constitute more than 10% of Kenya's population (96). Livestock is their major source of livelihood and food security. Kenya's livestock production accounts for 24% of total agricultural output. Over 70% of the country's livestock and 75% of the wildlife are in the ASALs. Northern Kenyan's temperature ranges between 24 and 38°C, and the mean temperature is 30°C. The driest months are January, February and September.

The region experience longer rains (which are usually erratic and unreliable, however) between April and July, while short rains are experienced between October and November. The rainfall ranges between 300 and 400 mm per annum, with the lowest rainfall being 120 mm. According to the Welfare Monitoring Survey, the overall poverty in Northern Kenyan was 74% and food poverty 81%. Northern Kenyan is the poorest area in Kenya. The overall poverty, also known as absolute poverty, in Kenya was 46% in 2005 (97).

Northern Kenyan is already experiencing problems related to climate variability and change, mainly droughts and floods. Climate is generally described in terms of the mean and variability of temperature, precipitation and wind over a period of time, ranging from months to millions of years – the classical period being 30 years. According to Hegerl et al. (98), climate change refers

95Sen, A. K. (1981). *Poverty and Famines: An Essay on Entitlements and Deprivation*. . Oxford: Clarendon press.

96Kirbride, M. and R. Grahn 2008. Survival for the fittest: Pastoralism and climate change in East in East Africa. Unpublished edition.

97GoK 2002. *Turkana District Development Plan 2002–2008*. Ministry of Planning and National Development. Nairobi, Government Printer. Gender and climate change-induced conflict in pastoral communities.

98Hegerl, G.C., F.W. Zwiers, P. Braconnot, N.P. Gillett, Y. Luo, J.A. Marengo Orsini, N. Nicholls, J.E. Penner and P.A. Stott 2007. Understanding and attributing climate change. In: Solomon et al. 2007, pp.665–744.

to a shift in the mean state of climate or its variability persisting for an extended period of time (decades or longer), which might be due to natural changes or persistent anthropogenic changes in the composition of the atmosphere or in land use. While climate variability refers to variation in the mean state of climate on a temporal and spatial scale beyond that of individual weather events, examples of climate variability include extended droughts, floods and conditions that result from periodic El Niño and El Niña events. However, despite the marked progress made in recent environmentally induced conflict in pastoral communities' years, particularly with model assessments, the environmentally induced conflict in many parts of Africa is still not fully understood. In relation to climate variability and change, resource competition amongst pastoralist groups of land users significantly increases the risk of conflict. The risk is greatest during times of stress (for example, during droughts or floods), when available resources are even more restricted.

According to Barnett and Adger (⁹⁹), environmental change – in isolation from a broader range of social factors has not undermined human security. These may include poverty, the degree of support (or discrimination) communities receive from the state, their access to economic opportunities, the effectiveness of decision-making processes, and the extent of social cohesion within and surrounding vulnerable groups. All these factors determine people and communities' entitlements to economic and social capital that in turn determine their capacity to adapt to environmentally induced conflict so that the things that they value are not adversely affected. It has been predicted that climate change will accentuate the gaps between the worlds' rich and poor. In the developing world, it is an accepted view that women are amongst the poorest and most disadvantaged groups in society and 70% of the 1,3 billion people in the developing world living below the poverty threshold are women. In many societies vulnerability differs between women and men. Women are vulnerable to environmental changes because of their responsibilities in the family, which are exacerbated by the impacts of climate change. Since access to basic needs and natural resources, such as food, water and fuel, becomes hampered, women's workload has increased (¹⁰⁰). This article is based on a study entitled '*Enhancing adaptive capacity of pastoralists to climate change induced vulnerability in northern Kenya*'. The first phase of the project started in January 2008 and ended in December 2009.

Northern Kenyan was selected for the study on the basis that it has been subjected to historical and recurrent droughts that have left the region vulnerable. The area is in Arid and Semi Arid Lands (ASALs) where managing short-term climatic fluctuations as well as adapting to long-term changes is critical to sustaining livelihoods. Furthermore, the districts experience structural challenges characteristic of low levels of development, that is, high poverty levels, high illiteracy

99Barnett, J. and Adger, W. (2007), Climate change, human security and violent conflict, *Political geography*, 26, 639–655.

100Dankelman, I. (2002). Climate change: learning from gender analysis and women's experiences of organising for sustainable development. *Gender and Development*, 10 (2): 21-29.

levels and continuous food insecurity (¹⁰¹). The selection of the study sites in Northern Kenyan was based on variability of socioeconomic activities/types of livelihoods (that is, pure/primary pastoralists and agro-pastoralists), the distance of case study areas from each other (to provide ecological and livelihood differences), existence/non-existence of outside interventions to reduce community vulnerability to droughts/floods (for example, the Arid Lands Resource Management Project [ALRMP] which is being implemented by the Government of Kenya with the support of the World Bank and non-governmental organizations [NGOs] because these interventions have an influence on community level vulnerability, and security/access of the study site (this is because of frequent inter-ethnic and cross-border conflicts related to access to natural resources like water and pasture).

OBSERVATIONS

Analysis of the Environmentally Induced Conflict

Since the beginning of the 1990s, an ambiguous body of literature has emerged on the topic of environmentally induced conflicts. Claims that increasing resource scarcity and environmental degradation contribute to violent conflict have met with scepticism ever since they were first raised. When empirical studies by environmental conflict scholars replaced alarmist assertions in the mid-1990s, this initial doubt evolved into methodological and theoretical criticism. Numerous controversies have occurred in the past decade between members of the environmental conflict school and those opposed to their findings³. Much has been said and written about challenges to environmental conflict research and strategies to overcome the current deadlock. Prominent authors like Le Houerou (¹⁰²) report that the debate on environmentally induced conflicts has reached a theoretical impasse unhelpful for policy makers and those wishing to prevent conflict. Little et al., (¹⁰³), who reasons from the perspective of a political ecologist, comes to the same conclusions. Davies (¹⁰⁴) also subscribes to a fairly pessimistic assessment of the state of the study of environmental causes of conflict. Finally, Dietz (¹⁰⁵) concurs that the field's value has been depressed by simplified renderings of environment and security literature.

101 Davies, S. (1996). *Adaptable Livelihoods. Coping with Food Insecurity in the Malian Sahel*. New York: Macmillan Press limited.

102 Le Houerou, H. (1980). The Rangelands of the Sahel. *Range Management*, 33(1), 41-46.

103 Little, P., Mahmood, H., and Coppock, D. L. (2001). When Desert Flood: Risk Management and Climatic Processes among East African Pastoralists. *Climate Research*, 19, 149-159.

104 Davies, S. (1996). *Adaptable Livelihoods. Coping with Food Insecurity in the Malian Sahel*. New York: Macmillan Press limited.

105 Dietz, A. J. (1987a). The State, the Market and the Decline of Pastoralism; Challenging Some Myths, with Evidence from West Pokot. In J. Markakis (Ed.), *Conflict and Decline in Africa* (pp. 19). Oxford: Macmillan Press.

This article posits that the inconsistency of environmental conflict research is not limited to methodological weaknesses and theoretical shortcomings. Haagsma and Hardeman (¹⁰⁶) argue that the concept of environmentally induced conflict is itself fundamentally flawed, as it neither allows for convincing empirical substantiation nor for sound theory-building. A critical review of the literature reveals the shakiness of the concept's core assumption: the idea that environmental concerns are indeed associated with greater conflict. Three elements are central to my argument. First, research on the "ecologic sources of conflict" has been characterized by a one-sided fixation on causality. Second, environmental conflict literature amalgamates eco-centric and anthropocentric conceptions of agency that are incompatible. Third, the field has failed to take into account how social factors contribute to, perceive, and cope with environmental change and degradation.

The impacts of climate change on the environment and human mobility are becoming increasingly worrying: the number of natural disasters has doubled over the past two decades. Every year 30 million people worldwide are forced to move because of serious degradation of environmental conditions, natural disasters and depletion of natural resources. This figure is expected to soar by the middle of this century. Moreover, international protection and operational frameworks are deficient, leaving several categories of people forced to flee or seeking safer existence without effective national or international protection. The report argues for the development of inclusive definitions of environmentally induced migration and environmental migrants/displaced persons, taking into account the full range of human mobility caused by environmental factors, the length of displacement and possibility to return. New concepts should not be feared, yet they should not limit the applicability of universally recognized protection standards prescribed in international law and normative frameworks. The report calls for a further investigation of existing gaps in law and protection mechanisms with a view to an eventual elaboration of a specific framework for the protection of environmental migrants, either in a separate international convention or as parts of relevant multilateral treaties (¹⁰⁷).

Historical Background to Drought and Famine in Pastoral Lands

Sub-Saharan Africa contains one-half of the world's pastoral people (¹⁰⁸). These pastoralists live in the marginal areas of the continent often with variable rainfall both in space and time resulting in low resource base or uneven and unpredictable levels of forage productivity. This environment

106Haagsma, B., and Hardeman, J. (1998). *Pastoral Development in East Africa: Facts and Findings*. Zeist Netherlands: I/C Consultants.

107Baxter P.T.W. and Hogg R. (eds) 1990. *Property, Poverty and People: Changing Rights in Property and Problems of Pastoral Development*, University of Manchester, Department of Social Anthropology and International Development Centre, Manchester.

108Fratklyn, E. (2001). East African Pastoralism in Transition: Maasai, Boran, and Rendile Cases. *African Studies Review*, 44(3), 1-25.

offers limited opportunities for subsistence activities apart from keeping livestock (¹⁰⁹). The people raise domestic animals including cattle, camels, goats, sheep and donkeys, which are used for milk, meat, blood, transport and trade.

Despite environmental challenges, African pastoralists practiced a relatively resilient and ecologically sound mode of production during the pre-colonial times (¹¹⁰). Pastoralists were able to cope with ecological stresses by different strategies within their social networks, for example, diversification of activities, dispersion of animal and human groups, and forms of redistribution and reciprocity. Today, however, land degradation and competing land use practices put pastoral resiliency into jeopardy. The scenario is such that pastoralists appear trapped between the advance of the desert and the onslaught of cultivators, agro-business concerns, ranchers and wild game conservationists. Several authors (¹¹¹), also observe that the role of the state during the colonial and post-independence administrations and the historical processes of impoverishment and economic stagnation have given rise to an interesting phenomenon where pastoralists currently find themselves faced with serious adjustment problems caused by recurrent drought, diseases and famines. But the pertinent and persistent question is: Can pastoralists adapt to their changing environment? For instance, at the advent of colonialism, pastoralists were considered to be born hostile, aloof and unreceptive.

The colonial administrators saw pastoralism as an undesirable form of land use and wanted to bring pastoralists within the orbit of the state as obedient taxpayers. The colonial policies also aimed at pacification of pastoralists. For example, in East Africa, the colonial administration denied the power and legitimacy of existing pastoral institutions. This was done through a reduction in livestock numbers, importing new breeds and providing permanent reserves. The objective was to establish meat producing centres. These intervention policies had negative effects on pastoralists' livelihoods, as improved animal health resulted in an increase in livestock that led to the overuse of common resources such as water. The provision of permanent watering points changed former migratory patterns, leading to large concentrations of livestock in areas that were previously not used for dry season grazing (¹¹²).

The colonial governments also viewed African pastoralism as an obstacle to development (¹¹³). They imposed boundaries in pastoral areas and this accelerated hostility to local societies, and

109Lamprey, H., and Yusuf, H. (1981). Pastoralism and Desert Encroachment in Northern Kenya. *Ambio*, 10(2), 131-134.

110Bovin, M., and Manger, L. (1990). Adaptive Strategies in African Drylands. In Casciarri,

111Dietz T. 1993. The State, the Market, and the Decline of Pastoralism: Challenging some Myths, with Evidence from Western Pokot in Kenya/Uganda. In: Markakis J. (ed.) *Conflict and the Decline in Pastoralism in the Horn of Africa*, Macmillian, London.

112Umar, A. (1994). *Symposium for Sustainable Development of North Eastern Kenya: Pastoralists Forum*. Nairobi: Crescent of Hope.

113Hendrickson, D., Armon, J., and Mearns, R. (1998). The Changing Nature of Conflict and Famine Vulnerability: The Case of Livestock Raiding in Turkana, Kenya. *Disasters*, 22(3), 185-199.

constrained their existing interactions and networks. The colonial policies also favoured sedentary agriculture and ranching strategy. This policy of taking land from pastoralists appeared to have seriously undermined the pastoral economy. For example, in West Africa, the colonial policies were aimed at the powerful pastoral societies of the Sahara and the Sahel. The long conflict between nomadic pastoralists and sedentary agriculturalists was resolved in favour of the cultivators. In Niger, the colonial regime from 1930 to 1950 aimed at developing groundnut cultivation for the market. This led to expansion of cultivated areas that compressed pasture in pastoral lands (¹¹⁴). Tanzania under German colonialism evicted the Borana from rich grazing land around the base of Mount Kilimanjaro and opened the areas for white settlers and indigenous farmers. Similarly, in Northern Kenya, colonial intrusion cut Borana land in half with an international boundary between British Northern Kenya and German Tanganyika in 1885. Treaties in 1904 and 1911 allowed the British to push the Northern Kenyan Borana south of the Mombasa-Uganda railroad (which passes through Nairobi) into a single reserve in southern Northern Kenya later administered as Kajiado and Narok districts.

The Borana lost their prime water and grazing lands for European ranches, particularly near Nairobi around the Ngong Hills and Lakes Naivasha and Nakuru. The Borana were also excluded from 60 percent of their dry season pastures and drought reserves highlands of Laikipia (¹¹⁵). In Somalia, the colonial government took control of the livestock sector, limiting pastoralists' access to pastures and watering points. In Ethiopia's Awash River basin, home to pastoral communities, land was taken over in the 1950s and converted for irrigated agricultural production. The colonial policies on development of the Awash basin led to eviction of pastoralists from their land to give way for the establishment of large state farms to produce cotton and sugarcane. The shrinkage of grazing areas meant a decline of the pasture quality, water resources, and productive and reproductive capacity of domestic herds. Circumscribing grazing lands which offered greatest strategic value for subsistence also meant a destruction of basic pre-requisites for pastoral existence (¹¹⁶).

During the post-independence period, Sub-Saharan African governments continued with the colonial policies of suppression. They adopted a modernization theory. Some of the tenets of the modernization theory were privatization and individualism. The national governments lured by the investments and aid from the international donor community, have increasingly curtailed pastoral livestock production on communally held lands and promoted expansion of export and local market agriculture including beef and dairy marketing, as private land owners are assumed to better conserve their resources. Sen (¹¹⁷) argued that there is evidence of discrimination against the pastoral communities, and a firm suggestion that the Sahelian governments are

114 Sutter, J. (1982). Commercial Strategies, Drought and Monetary Pressure: Wo'daa'be Nomads of Tanout Arrondissement Niger. *Nomadic peoples 11*, 26-60.

115 Spear, T., and Waller, R. (1993). *Being Maasai : Ethnicity and Identity in East Africa*. London: James Currey.

116 Flood, G. (1976). *Nomadism and Its Future. The Afar*. London: IAA.

117 Sen, A. K. (1981). *Poverty and Famines: An Essay on Entitlements and Deprivation*. . Oxford: Clarendon press.

closely tied to (and more responsive to the needs of) the majority of sedentary communities. For instance, in Sudan, the state gave priority to large public and private schemes based on political influence at the expense of pastoralists and other small-scale land users.

The Sudanese government designed and implemented programmes to settle nomads and thus exposed them to urban centers, where they could be involved in the exchange market. By this policy, nomads were forced to change their livestock keeping from sheer subsistence to exchange mode of production (¹¹⁸). As a result, nomads became more vulnerable to the dictates of the market environment. In Tanzania, cultivation was extended to the pastoral areas. For instance, in 1980s the Tanzanian Government, with assistance from the Canadian International Development Agency (CIDA) sponsored a large wheat cultivation project around mount Hanang, displacing Barabaig herders from 10,000 hectares of their land. This led to the degradation of common pastoral resources as Barabaig pastoralists could no longer practice their complex system of land use that involves movement (¹¹⁹). A similar predicament to that of the Barabaig pastoralists befell the pastoral Turkana, Borana, and Samburu of Northern Kenya in the post independence period. The Northern Kenya government concentrated on the development of higher potential agricultural areas to the detriment of pastoral areas. This led to high population growth and land shortage in high potential agricultural areas. This encouraged the migration of cultivators onto marginal lands, depriving pastoralists of access to their dry season areas, and making them more vulnerable to drought.

Exclusion of pastoralists from drought reserves (as a consequence of such areas being set aside for wildlife and tourism and cultivation) has drastically altered the pattern of pastoral land use. Losses of such dry season ranges results in increased deterioration of the remaining fragile lands, (¹²⁰). In the light of the above discussion, it is clear that the policies during colonial and post independence periods weakened internal management and leadership capabilities of pastoral societies. Development initiatives undermine the traditional management system, based on communal rangelands, and push pastoralists into different forms of privatization.

These private holdings reduce the size of their rangelands and makes access to distant dry-season and drought reserve pastures difficult. The growing population pressure in pastoral areas contributes to degradation of grazing lands and consequent overgrazing. In addition, Sub-Saharan African governments seek to settle the pastoralists so that they could be controlled and

118Babiker, M. (2007). Resource Alienation, Militarisation and Development. Adaptability, Identity and Conflict among the Hawaweer in Northern Sudan. In B. Derman, R.

119Lane C. and Moorehead R. 1994. New directions in rangeland and resource tenure and policy. In: Scoones I. (ed) *Living with Uncertainty: New Directions in Pastoral Development in Africa*, Intermediate Technology Publications Ltd, London.

120Kenya's Commissioner for Refugee Affairs et al. (2011), *Socio-economic and Environmental Impacts of Dadaab Refugee Camps on Host Communities*, available at: <http://www.ambnairobi.um.dk/NR/rdonlyres/8E1CC5EB-6B25-4531-A7E0CDC32A0961B7/0/FinalReport30092010.pdf>.

taxed. Most livestock development projects stress the need to supply meat to urban centers and thus concentrate on raising cattle rather than goats and camels. While this strategy may have been beneficial to urban consumers, shifting livestock preference from drought-resilient animals to species that are more prone to suffer during droughts put pastoral people increasingly at risk. Therefore, the colonial and post independence policies in Sub-Saharan Africa resulted in the disruption of the ecological balance and pastoral flexibility, and accelerated deterioration of natural resources. It then led to an increasing number of conflicts over available resources, and affected the resilience of pastoral systems, thus rendering pastoralists more vulnerable to environmental hazards such as drought (¹²¹).

The Drought A Concern for Pastoralist

Drought is a relative term that can mean different things to people from different backgrounds and with different viewpoints. What is drought in one place may not be drought in another place. Even in the same region, what one farmer considers as drought, the other farmer may view as normal. UNDP (¹²²) defines drought as a sustained period of deficient precipitation with a low frequency of occurrence. In the context of pastoral settings, drought implies two or more consecutive years when rainfall is less than 75 per cent of the long-term average. However, following Nikola (¹²³), drought is defined in this study as lack of rainy season that is repeated consecutively for three seasons in a row leading to loss of pastures and death of livestock. It is important to stress here that it is a loss of dry season pastures, because according to my respondents, it is only in such conditions that their animals begin to starve and die.

Drought is not a new phenomenon in Sub-Saharan African pastoral lands. Climatologist Glantz (¹²⁴) states: drought is a part of (Africa's) climate and not apart from it. Historically, pastoral areas have suffered numerous such disasters. It has been documented that in Sub-Saharan Africa, eight major droughts have occurred in the last four decades: 1965/66, 1972/74, 1981/84, 1986/87, 1991/92, 1994/95, 1999/2001 and 2005/06 (¹²⁵). These conditions reduce forage production and water supplies, thus placing serious pressure on the livestock industry (¹²⁶). Although these drought problems are increasingly apparent, many countries in Sub-Saharan Africa lack clearly defined long-term plans especially for pastoral areas where generally

121Gulliver P.H. 1991. *A Preliminary Survey of the Turkana. A Report compiled for the Government of Kenya.* Communications from the School of African Studies, New Series No. 26, University of CapeTown, Cape Town.

122UNDP (2000). *Report on the Status of Drought Preparedness and Mitigation in Sub-Saharan Africa.* United Nations (Volume 1). New York: Office of Combat Desertification and Drought, United Nations Development Programme (UNDP).

123Nikola, R. (2006). Policies and Strategies to Address the Vulnerability of Pastoralists in Sub-Saharan Africa. Retrieved March 18 2008, from <http://www.fao.org/ag/pplpi.html>

124Glantz, M. H. (1987). *Drought and Hunger in Africa; Denying Famine a Future.* Cambridge: Cambridge University Press.

125Nikola, R. (2006). Policies and Strategies to Address the Vulnerability of Pastoralists in Sub-Saharan Africa. Retrieved March 18 2008, from <http://www.fao.org/ag/pplpi.html>

126UNSO (1999). *Drought Preparedness and Mitigation in Sub-Saharan Africa.* New York: United Nations Office to Combat Desertification and Drought.

speaking, development has not been a national priority. For instance, during 1968-1973, drought increased dramatically in the Sahelian countries (Senegal, Mauritania, Mali, Nigeria, Chad, and Sudan). This pointed to the vulnerability of pastoral production systems to prolonged droughts as herders lost up to 80 percent of their small stock and 50 percent of the 10 million cattle in the region, both to starvation and infectious diseases. This also resulted in a famine which claimed at least 100,000 human lives in the Sahel and another 100,000 in Ethiopia. These disasters opened peoples' eyes, and, as a way to stem future disasters and make pastoralism more resilient, resulted in an upsurge in drought management studies (¹²⁷).

This need to study and find new ways of improving pastoralists' adaptive capacities does not exclude Northern Kenya. This is basically because Northern Kenya's arid and semi-arid lands (ASAL), inhabited by more than 3 million pastoralists, incorporate as much as 88 percent of the country's land surface, and carry approximately 50 percent of its livestock (Republic of Kenya 2002). They are drought prone areas of the country and seem to have a regular timetable of natural disasters. They are hit hardest whenever there is a national drought which occasions shortfall in food production. Evidence suggests that Northern Kenyan nomads are just as vulnerable to droughts as the people of the Sahel and Ethiopia. For instance, during 1960-1961 droughts, Borana nomads lost between 300,000-400,000 cattle. This was estimated to be between 65-80 per cent of their total herds. Many Borana nomads were therefore left stockless and hungry. The nomadic Turkana suffered equally badly at that time and lost two thirds of their livestock. According to Dames (¹²⁸), 10,000 Turkana pastoralists were registered as destitute and had to be fed by the government in famine relief camps.

During the 1971-1974 drought, the Northern Kenya nomads once again suffered heavy losses, and the subsequent famines were compounded by an outbreak of cholera and high incidence of malnutrition, tuberculosis, meningitis, and measles. The young, the old, the sick and the weak suffered most severely. Wisner records 768 cholera cases in 1971 and 402 in 1974. Wisner (¹²⁹) suspects that 50 percent of those reported could have died from the combination of famine and diseases. This was followed by the 1979-1980 droughts which hit the northern part of Northern Kenya particularly hard and obliged many herders to give up pastoralism as a way of life at least temporarily. More than 90 of cattle, nearly 80 of small stock, and 40 of camels died in Turkana. The 1990-1992 droughts also had bad effects on nomads' livelihood and forced them to move to relief camps. As a result, external food assistance became more fully integrated into the nomads arsenal of survival strategies, although at the great cost of dependence on outsiders.

During the 2005-2006 droughts, Turkana pastoralists were among the hardest-hit victims in Northern Kenya. Experts who had been watching the crisis in northern Northern Kenya

127White, G. (1974). *Natural Hazards: Local, National and Global (Eds)*. New York: Oxford University Press.

128Dames, T. (1964). *Reconnaissance of the Agricultural Potential of the Turkana District*. Rome: FAO.

129 Wisner, B. (1977). *The Human Ecology of Drought in Eastern Kenya*. Phd Thesis. Clerk University, Massachusetts.

described it in one report as a “pervasive pre-famine condition” (¹³⁰). This condition was extremely costly to the Turkana people. It had a devastating impact on their livelihoods and changed the resource flows critical for their livelihood sustainability. It triggered a humanitarian crisis in which famine, disease, chronic poverty and loss of human life are all too evident. Access to food was reduced and costs of obtaining food increased. This sequence of events was facilitated by the fact that fewer animals were available for sale, and less milk was available for consumption and sale. Social costs were the most devastating. Famished children were highly susceptible to disease infection as they became victims of various diseases such as exophthalmia (acute vitamin A deficiency). A brief assessment conducted by the United Nations Children Fund (UNICEF) in Northern Kenya indicated that 25 per cent of the population suffered from malnutrition, that a large number of livestock died, and that a number of people dropped out of pastoralism and either now depend on food aid or have settled in periurban areas in search of employment (¹³¹).

With specific reference to recurrent drought problems in Africa, Glantz (¹³²) in his study proposed that livelihood intervention efforts in Africa should take drought into account as an expected event, and that for intervention programs to be viable, they must be designed with the ability to cope with the stress associated with drought. While supporting this line of thought, O’Leary (¹³³) in their findings, recommended that since drought stress has continuously caused long term economic disruption in African arid and semi-arid lands, occupied by pastoralists, a proper formulation of sustainable livelihood intervention policy should begin with an understanding, and analysis of local perceptions of drought, and the indigenous knowledge of drought mitigation.

Land Conflict in Northern Kenya

The violence in Northern Kenya following the December 2007 elections exposed the fragile foundations beneath what appeared, to many observers, to be a relatively stable country. It revealed the extent to which ethnic divisions remain entrenched, the limitations of Northern Kenya’s security forces and the role of organised militias in politics. Furthermore, it suggested that beneath the institutions of democracy, politics in Northern Kenya is characterised by an ethnicised struggle for control of the state and the resources that come with it. These problems have not been banished or resolved by the National Accord, which brought an end to the post-

130Daily Nation (15th May 2007). Violent Attacks among Pastoral Communities in Northern Kenya.

131UNICEF (2006). As Drought Lingers, Kenya's Nomadic Turkana Tribes Are among the Worst Affected. Retrieved May 1, 2006, from http://www.unicef.org/infobycountry/kenya_31798.html

132Glantz, M. H. (1987). *Drought and Hunger in Africa; Denying Famine a Future*. Cambridge: Cambridge University Press.

133O’Leary, M. F. (1990). *Drought and Change Amongst Northern Kenya Nomadic Pastoralists: The Palsson*: The Scandinavian Institute of African Studies

election violence, nor by the limited reforms that have taken place subsequently. Peace and stability in Northern Kenya remain fragile (¹³⁴).

Based upon ten years' experience of working to prevent violent conflict in Northern Kenya, and drawing from a number of specific conflict analyses, Saferworld identifies two primary structural causes of conflict in Northern Kenya. First are the national structures and policies which govern the way that state and natural resources are allocated between different regions and ethnic groups. Secondly, a feature of the competition for access to resources has been mobilisation around ethnic identity, resulting in deeply embedded mistrust and intolerance between some communities (¹³⁵). In the context of these two structural causes a range of factors interact and fuel conflict at a local level across Northern Kenya. Key factors include: poor leadership and governance, which prevents state institutions and policies from responding effectively to the needs of local people; the politicisation of ethnicity, whereby ethnic identities are manipulated and inflamed to serve political agendas; ineffective and unaccountable security provision, and indeed in some places a complete absence of state security; the role of non-state armed groups, ranging from criminal gangs to rebel movements; high levels of youth unemployment; and the easy availability of small arms and light weapons. Land is particularly significant since this resource underpins the economy and livelihoods of much of Northern Kenya's population (¹³⁶).

Historical grievances about the distribution of land between different ethnic groups have become highly politicised. Insecurity of access and tenure, poor land administration and weak land policy and legal frameworks are also important conflict factors, while forced evictions and resettlement processes are potential triggers of violence. These conflicts are exacerbated by socio-economic marginalisation, especially among unemployed youth. High levels of youth unemployment give rise to a cheap, disaffected and accessible pool of recruits for temporary political mobilisation or longer-term induction into armed groups (¹³⁷).

Resources and Conflicts in Northern Kenya

Northern Kenya is the most marginalised and under-developed region of Kenya, lacking in basic service provision and receiving a smaller proportion of national resources than other regions of the country. The vast majority of the area is comprised of arid lands, where rainfall is low, temperatures are high throughout the year, and where people's access to and control over critical livelihood resources such as land is insecure. The dominant livelihood in arid districts is pastoralism, a system of production that is characterised by livestock mobility and the communal

134Fratklyn, E. (2001). East African Pastoralism in Transition: Maasai, Boran, and Rendile Cases. *African Studies Review*, 44(3), 1-25.

135Hogg, R. (1980), Pastoralism and impoverishment. The case of the Isiolo Borana of Northern Kenya, *Disaster*, 4(3), 299-310.

136Hjort, A. (1979) Savanna town: rural ties and urban opportunities in northern Kenya. *Stockholm Studies in Social Anthropology*, Vol 7. Stockholm: University of Stockholm.

137 Osamba, J., Sociology of insecurity: cattle rustling and banditry in north-western Kenya, , http://www.accord.org.za/ajcr/2000-1/accodr_v1_n2_a2.pdf (accessed 16 June 2008).

management of natural resources. Pastoralist communities have been largely marginalised from economic and political resources in recent decades. This marginalisation is due in part to limited capacity or ineffective state institutions in remote areas, but it also reflects the fact that pastoralist communities are largely under-represented in government and the wider political process (¹³⁸).

Northern Kenya in general and the pastoralist lifestyle in particular is often associated with violent conflict. Disputes over pasture and water access between pastoralists and farmers have led to increasingly violent clashes, while cattle-raiding between pastoralist groups has devastated communities which have become trapped in cycles of violence and counter-violence. While some pastoralist groups bordering the Rift Valley were drawn into the post-election violence of 2008, much of Northern Kenya was not directly affected. However, chronic insecurity and endemic violence in pastoralist areas have been more destructive and claimed more lives over the long term than episodic outbursts of election-related violence elsewhere in the country. Thus far, pastoralist grievances have not become enmeshed into national ethno-political rivalries to the extent that they have elsewhere in the country (¹³⁹). But this does not mean that conflicts in Northern Kenya are not politicised: antagonistic pastoralist groups are often drawn into local political rivalries by politicians seeking to gain votes, and this can exacerbate the violence.

A number of characteristics specific to pastoralist and agro-pastoralist conflicts can be identified. Many of these are concerned with access to natural resources, notably pasture and water, since these underpin both pastoralist and agricultural economies and livelihoods. Access to pasture often leads to clashes between pastoralist groups and with settled farmers. When pastoralists move cattle into areas considered private property, such as wildlife reserves or cattle ranches, tensions are heightened. Similarly tensions rise when different pastoralist groups converge on a single area seeking to graze their cattle on the same pasture. This is made more complex by different perceptions of property rights, which pastoralists regard as shifting and negotiable rather than fixed and exclusive (¹⁴⁰). Access to water can also lead to tensions between pastoralists and settled farmers when access is blocked by fences, crops are damaged by cattle, or when water resources become depleted as a consequence of over-use. Clashes over water access or over control of water points also occur between pastoralist groups.

These sorts of natural resource disputes are linked to scarcity. Scarcity arises when the supply of a resource cannot keep up with demand, which may result from increased demand –e.g. growing numbers of cattle or from decreased supply. Decreased supply may be the result of an expansion of privately-owned land, environmental degradation or, as we focus upon in this case, climate

138Hogg, R. (1982). Destitution and Development: The Turkana of North West Kenya. *Disasters*, 7(2), 156-156.

139Oba, G. and Lusigi, W. (2009), *An overview of drought strategies and land use in African pastoral system*. Paper 23a Overseas Development Institute, Pastoral development network, March.

140Brauch, H. G. (2002), Climate change, environmental stress and conflict, in Federal Ministry for Environment (ed), *Climate change and conflict*, Berlin: Federal Ministry of Environment, , 9–112.

change. Natural resources, and disputes over their scarcity, are managed as a key determining factor. Access to both pasture and water can often be peacefully mediated between communities, through the agency of traditional institutions and mechanisms that have historically served this purpose, such as reciprocal grazing rights. But natural resource competition and scarcity, while highly significant, are not the only factors that drive conflict in Northern Kenya. As noted above, the region is marginalised in a number of inter-related ways. It is isolated by its topography and poor infrastructure, especially roads that serve it. This is compounded by ineffective security provision, which means for instance that many roads are considered unsafe to travel due to the threat of bandit attacks⁽¹⁴¹⁾. The region is not well integrated into the national economy, and it has very limited political leverage. In addition, as elsewhere in the country, ethnic identities and divisions inform and often intensify conflict.

Among pastoralist groups in particular there is a significant interplay between group identities and historical feuds. This generates cycles of attacks and revenge attacks that can lead to embedded ethnic hatreds between groups. The prevalent form of violent conflict among pastoralist groups is cattle-raiding. Cattle-raiding is linked to resources (since it is generally a means of restocking herds after periods of drought), but it is also closely tied to pastoralist identity and cultural practices. These relate to the traditional role of the moran or young warrior, whose participation in cattle-raiding represents his transition from youth to manhood. Dowry payments required for marriage often take the form of cattle, which becomes another reason for cattle-raiding⁽¹⁴²⁾. Other cultural factors are also significant, such as the social status attached to the ownership of cattle which characterises all pastoralist societies. However, economic drivers of cattle-raiding are increasingly significant. In recent years it has become a more commercialised phenomenon sometimes described as ‘cattle-rustling’ to distinguish it from the traditional practice of cattle raiding.

Cattle-raiding in Northern Kenya

Increasingly, raids are carried out by young men who are funded and directed by outside actors, and often without the sanction of community elders. This form of cattle-raiding is commercially driven, in some cases by local political actors seeking to raise revenue for elections or by criminal networks. Cattle-raiding in Northern Kenya has been made more violent by the proliferation of small arms and light weapons (SALW). SALW are often given as payment for stolen cattle, and are regarded as valuable assets and sources of prestige by young men. Porous borders with countries that have experienced prolonged conflict mean that weapons cross easily into Northern Kenya although there is no shortage of domestic sources of arms and ammunition

141 Osbahr, H. and Viner, D. (2006), *Linking climate change adaptation and disaster management for sustainable poverty reduction*, Kenya country studies, European Commission Report, Geneva, Switzerland.

142 Barnett, J. and Adger, W. (2007), Climate change, human security and violent conflict, *Political geography*, 26, 639–655.

¹⁴³). The easy availability of SALW, especially amongst pastoralist communities, has led to the intensification of violent conflict. As one group acquires more arms, other groups scale up their own armaments to match them and so that they can protect their communities and livestock. What was once limited to low-intensity cattle-raiding incidents has transformed into large-scale violent clashes, killing from dozens to hundreds at a time. While these pastoralist 'wars' go largely unreported, the Conflict Early Warning Network (CEWARN) estimates that from 1996 to 2002 about 300,000 cattle were rustled on the Northern Kenyan side of the Sudan-Northern Kenya Somalia triangle, killing 1,200 people.

The government's standard response to the problem of SALW proliferation in Northern Kenya has been to launch coercive disarmament operations. These operations have been relatively ineffective however, and have served to highlight another characteristic of the region, namely weak or absent security provision by state authorities which contributes to the need for arms in the first place. Without adequate security provision there is little deterrence to prevent attacks, and little likelihood of a rapid response when they do occur. In general, enforcement of the rule of law in these areas is weak and access to justice is limited. In this context, conflict actors are able to operate relatively freely and with a high degree of impunity. Communities often defend themselves by mobilising and arming their youth, increasing the number of conflict actors and making the use of violence to resolve disputes far more likely. An incident in Isiolo district in July 2009 clearly illustrates these dynamics: when competition over access to pasture and water between Samburu, Turkana, Borana and Somali groups was not resolved peacefully, the resulting violent conflict led to the deaths of 32 people, the displacement of thousands and extensive livestock theft (¹⁴⁴). The decision by the government to supply 300 guns to Isiolo residents in the name of bolstering security through the Northern Kenya Police Reserve (KPR) compounded the problem by introducing more weapons to the area, and antagonising other groups who felt they were now at greater risk. The conflict manifested the deep-rooted divisions between communities, but was also politicised by local leaders already maneuvering in advance of the 2012 national elections (¹⁴⁵).

The original problem of natural resource scarcity and competition between different groups which sparked the conflict was subsequently exacerbated as the displaced populations put increased pressure on limited resources, resulting in a major humanitarian crisis. The above case highlights the centrality of natural resource scarcity and competition, as well as demonstrating the complexity of conflict causes and dynamics in Northern Kenya. It also underlines the self-perpetuating nature of these dynamics: scarce resources contribute to violent conflict which makes an area insecure, causing displacement into more secure areas where limited resources

¹⁴³Meier, V., Bond, F. & Bond, G. (2002), Environmental influences on pastoral conflicts in the Horn of Africa.

¹⁴⁴Omosa, E. (2003). *Natural Resource Based Conflicts and Pastoral Livelihoods: The Impact of Water Resource Based Conflicts on Pastoralism, Wajir District*. University of Nairobi, Institute of Development Studies.

¹⁴⁵Elliot, F. (2010), East Africa pastoralism in transition. Maasai, Boran, Rendille cases, *African Studies Review*, 44(3), 1–25.

come under additional stress, potentially leading to further outbreaks of resource-based violence⁽¹⁴⁶⁾.

Climate Change and Conflict in Northern Kenya

It is sometimes assumed that climate change will lead to the depletion of natural resources, which will lead to increased demand for reduced supply, which will in turn generate socio-economic tensions leading to violent conflict. However, none of the links in this chain of causality is as straightforward as that suggests. Firstly, as noted above, the impacts of climate change will vary from region to region: in some cases there may actually be an increase in rainfall. Secondly, climate change is only one of a number of factors causing the depletion of natural resources, so it would be blinkered albeit perhaps politically convenient to ascribe all blame to this factor. Thirdly, it is not just a simple equation of supply and demand; crucially it is how people manage the reduced supply which will determine if natural resource scarcity generates increased conflict⁽¹⁴⁷⁾. Lastly, despite the centrality of natural resources to many conflicts in Northern Kenya, this is only one aspect in a complex web of conflict-generating factors. This section explores these links in order to gain a better understanding of the conflict threat posed by climate change in Northern Kenya.

Vulnerability to climate change impacts in Northern Kenya is likely to vary across and within villages and households. The poorest may also not be the most vulnerable: their climate adaptation and coping strategies may be more developed than those of others. Many rural communities have already developed methods of adapting to climate variation, albeit on a less dramatic scale. Indeed some suggest that pastoralists are inherently well placed to cope with climate change since their whole livelihood and lifestyle is based upon adaptation to extreme climatic conditions and scarce resources. Bearing in mind these qualifications, there are a number of ways in which climate change is likely to affect the availability of natural resources, which may in turn contribute to violent conflict. Rainfall feeds vitally important water sources such as rivers and lakes⁽¹⁴⁸⁾. Depletion or disruption of established water supply will affect livelihoods, while lack of access to clean drinking water may have negative implications for people's health and well-being. Attempts to secure control of water sources are likely to be divisive and may become politicised along ethnic lines, or even lead to inter-state tensions with neighbouring countries. Moreover, many people in Northern Kenya rely on rainfed agriculture for their livelihoods as small farmers or as employees in the commercial agricultural sector. Changes in the distribution and amount of rainfall (potentially longer dry spells interspersed with

146GoK 2005b. *Sessional paper on sustainable development of arid and semi-arid lands of Kenya*. Ministry of Planning and National Development. Nairobi, Government Printer.

147Bonte, P. (1975). *Pasteures Et Nomads: I Exemple De La Mauritanie, in Secheresse Et Famine Du La Sahel*. In Casciarri, B. 2002. *Local Trends and Perceptions of Processes of Commodisation in Central Sudan: The Responses of Ahamda Pastoral System to State Pressures and Capitalist Dynamics*. *Nomadic Peoples*, 6(2), 32-50.

148Glantz, M. H. (1987). *Drought and Hunger in Africa; Denying Famine a Future*. Cambridge: Cambridge University Press.

damaging floods) will impact on food security, which is already under pressure from the country's rapidly-growing population (projected to increase from 35.6 million in 2005 to 46.2 million by 2015) (¹⁴⁹).

Environmental Conflict and Growing Population in Northern Kenya

Not only will this growing population stress food supply, but access to land will come under pressure from increased demand, exacerbating what is already a highly politicised issue. If rural people's livelihoods and a vital economic sector are undermined by climate change, this is likely to lead to displacement and urban migration. This will put additional stress on Nairobi and other urban areas that are already manifestly ill-equipped to provide services for their current population which could generate social unrest. In the longer term, any changes to the distribution of economic wealth, assets and resources caused by changing climatic conditions will potentially be disruptive in a country where access to these assets is already politicised along ethnic lines. While recognising the potential impact of climate change upon the availability of natural resources, other factors, such as deforestation, also impact negatively upon the environment and in turn upon conflict dynamics. In the case of the above-mentioned drought in the Narok area of Western Northern Kenya, deforestation of the Mau forest is primarily blamed for altering the micro-climate leading to environmental degradation (¹⁵⁰). Borana groups are angry with the predominantly ethnic Kalenjin settlers upstream, accusing them of 'stealing' their forest and water. This has prompted fear that the resulting human suffering could precipitate inter-ethnic conflict in an area where the wounds of Northern Kenya's post-election violence are still raw.

As noted above, vulnerability to the effects of climate change depends to a considerable degree upon adaptive capacities, both at national and community levels. It has long been recognised that poorer countries bear the biggest burden since climatic variability increases with the degree of aridity³⁶ and many of the world's dry land areas are located in developing countries. In these countries livelihoods are more reliant on the natural resource base and on environmental goods and services, but their capacity to invest in adaptive technologies, such as improved varieties or water systems, is lower (¹⁵¹). The ASALs of Northern Kenya share many of these socio-economic challenges, such as endemic poverty and restricted access to capital, making adaptation more difficult. Governance structures concerned with the distribution and management of natural resources will be critical in determining whether resource scarcity arising from climate change leads to violent conflict. It also requires the political will and capacity to utilise these structures, which has often been lacking in the past, for instance in the case of land administration.

149Gulliver P.H. 1991. *A Preliminary Survey of the Turkana. A Report compiled for the Government of Kenya*. Communications from the School of African Studies, New Series No. 26, University of CapeTown, Cape Town.

150Little P.D. 1996. *Cross-Border Cattle Trade and Food Security in the Kenya/Somalia Borderlands*, University of Kentucky.

151Omosa, E. (2003). *Natural Resource Based Conflicts and Pastoral Livelihoods: The Impact of Water Resource Based Conflicts on Pastoralism, Wajir District*. University of Nairobi, Institute of Development Studies.

Nevertheless, the impacts of climate change in Northern Kenya are potentially highly destructive, given that people rely heavily on natural resources and food security is already fragile. Pre-existing developmental challenges and weak governance in the area make the climatic stresses more threatening. Indeed pastoralist groups have been referred to as the 'climate change canaries' since their livelihoods are so vulnerable to environmental changes. Research in pastoralist areas in Northern Kenya indicates that an increasingly adverse climate has already contributed to lowering income levels, the expansion of settlements lacking basic services, migration, deforestation and growing aid dependency⁽¹⁵²⁾. However, others challenge this view of pastoralists as helpless victims, arguing that the livelihood patterns of pastoral communities hinge upon strategies that continuously adapt to a limited, highly variable and often unpredictable resource endowment. There may therefore be opportunities to learn from the flexibility and mobility that characterise pastoralist adaptive capacities. This more hopeful analysis is, however tempered by recognition that the traditional coping strategies of pastoralists, especially widespread mobility, are increasingly constrained given the socio-economic realities of modern Northern Kenya⁽¹⁵³⁾.

A number of potential connections between climate change and conflicts in the ASALs can be identified. Pasture and water availability is largely determined by the distribution and incidences of rainfall. Less predictable and decreasing rainfall due to climatic change (combined with rising evapo-transpiration rates) mean that supply of these resources may decrease. Other climatic extremes, such as extremely high rainfall and flash floods, may also stress resources by damaging top soil and the vegetation that grows on it. Rising scarcity is likely to lead to increased conflict among pastoralist groups and between pastoralist groups and sedentary farmers. Long periods of drought in the past seem to confirm this pattern. These conflicts may manifest themselves in short-term clashes over specific pastures and water points or in longer-term struggles as groups attempt to control and secure their own access to resources. Indeed more structural disputes over exclusive land use (on which resources are found) and land boundaries are likely to increase⁽¹⁵⁴⁾. Coupled with this, pastoralist coping strategies like migration can also contribute to conflict dynamics. In periods of low climatic stress, migration is limited to a relatively small area; in periods of high stress pastoralists will take their herds as far as necessary to find water and pasture supplies. Wider migration leads to increased contact with other migrating pastoralists, with whom historical conflicts may already exist, which can lead to inter-community violence. It also pushes pastoralists into areas that are increasingly claimed for farming, ranching, conservation or other forms of exclusive use and private property. In the short term, these tensions usually arise on a seasonal basis in the dry seasons. However, the potential for such conflicts is likely to increase if climate change forces greater migration of pastoralist groups. Since climate change is predicted to cause increased variability, these adaptive strategies

152Coppock, D. L. (2001). When Desert Flood: Risk Management and Climatic Processes among East African Pastoralists. *ClimateResearch*, 19, 149-159.

153Hogg, R. (1982). Destitution and Development: The Turkana of North West Kenya. *Disasters*, 7(2), 156-156.

154Gudrum, D., and Hjort, A. (1976). *Having Herds: Pastoral Growth and Household Economy*: Stockholm.

are likely to be more ad hoc and unpredictable, making the conflicts that arise from them more difficult to manage.

Environmental induced conflict and migration affects

The interaction between climate change and migration affects more than just pastoralist communities. The effects of climate change on natural resource scarcity and competition is likely to influence broader migration patterns, both temporary and permanent migration, and migration within Northern Kenya as well as cross-border. Migration adds extra pressure on resources in destination areas urban as well as rural and increases the number of conflict actors, potentially complicating conflict and stressing otherwise effective micro-level natural resource management mechanisms. When migration leads to crossing state borders, state security forces may be drawn into conflicts. As explained above, cattle-raiding is integral to conflict dynamics in Northern Kenya, and the practice is likely to be affected by the impact of climate change. Cattle-raiding was traditionally used as a means for restocking herds after a particularly harsh drought for example, and so a rising incidence of cattle loss due to adverse weather might lead to a growing number of raids and counter-raids (¹⁵⁵). On the other hand, raiding is traditionally more prevalent in the rainy season when there is more pasture for cattle and so newly-acquired cattle are not an extra burden. Following this logic, one might expect raiding to decrease as pastoralists focus more on nurturing their existing livestock in the face of diminishing resources.

In general, increasing insecurity will undermine the adaptive strategies that sustain livelihoods in Northern Kenya and thus make communities more vulnerable to climate change. For example, conflict and general insecurity may constrain pastoralist mobility and migration, restricting communities to smaller and resource-exhausted safer areas. This may lead to a negative cycle whereby conflict over diminishing resources increases insecurity which undermines adaptive strategies, itself feeding further insecurity (¹⁵⁶). In a more extreme scenario, shrinking and degraded pastures and water arising from climate change, may seriously threaten the foundations of pastoralist livelihoods. Without alternative economic opportunities to rearing livestock, young men may be drawn into cattle-rustling gangs and other forms of armed violence. Furthermore, without adequate state security provision, communities may arm themselves due to perceived threats from such groups, leading to a self-perpetuating escalation of armed violence.

This exploration of the connections between climate change and conflict in Northern Kenya highlights that natural resource scarcity and competition are central to their interaction. It also makes clear that this is not a simple connection, rather there is a complex interaction in both directions: on the one hand, climate change is one of a range of factors causing natural resource

155 Wisner, B. (1977). *The Human Ecology of Drought in Eastern Kenya. Phd Thesis.* Clerk University, Massachusetts.

156Dahl, G., and Hjort, A. (1976). *Having Herds : Pastoral Herd Growth and Household Economy:* Stockholm : Department. of Social Anthropology, University ofStockholm.

scarcity and competition; on the other, natural resource scarcity and competition is one of a range of factors causing conflict. Thus climate change is regarded as a conflict ‘threat multiplier’ a factor that will compound and fuel other drivers of conflict. The question then is how potent will the threat-multiplying effect of climate change be in the context of Northern Kenya, and what can be done to pre-empt or mitigate the threat? In order to answer this question, Saferworld commissioned field research into two areas of Northern Kenya with a view to analysing how climate change interacts with other factors that cause conflicts ‘on the ground’. The aim of the field research was to drill down beneath the assumptions and apparent connections, and to understand better the significance of the various factors influencing natural resource scarcity and competition, and how this in turn contributes to conflict. Two community conservancies in Northern Kenya were selected for the field research, identified on the basis of both their vulnerability to climate change and conflict, and for the existence of well-developed structures and mechanisms for NRM (¹⁵⁷).

Prolonged and frequent periods of drought degrade rangeland resources and lead to starvation and the death of livestock. The decimation of livestock has severe implications for pastoralists as their survival depends on their livestock. The impact of drought has been witnessed in most parts of Northern Kenya. For example, between 1979 and 1980, the Turkana of Northern Kenya lost about 70 per cent of their livestock because of drought. The Borana lost large herds of livestock to the multiple droughts of 1983/1984, 1991 and 1992, which were experienced in Obbu and other Borana pastoral regions. Drought periods also correlate positively with increased incidences of ethnic conflicts over stiff competition for water and pasture, which sometimes extends across borders. Pastoral insecurity determines grazing areas. When insecurity is high, livestock herds tend to concentrate in small secure grazing zones, while leaving large tracts of land unused in most of Northern Kenya. However, in certain extreme circumstances such as severe drought, insecurity becomes a secondary issue to the pastoralists. Access to dry-period grazing areas is limited by the fact that cattle raids among neighbouring communities increase during droughts (¹⁵⁸). A good example is the abandoned grazing land on the borders between the Gabra and Borana of Marsabit and Moyale, the Somalis and Borana of Isiolo, the Garre and Ajuran of Wajir and the Garre and Murule of Mandera.

Because government security forces are inadequate or absent in most pastoral areas owing to their vastness and remoteness, most pastoralists acquire illegal arms for self-protection, hence aggravating the problems of proliferation of small arms and light weapons and creating an environment conducive for criminals engaged in commercialised livestock raids. During droughts pastoralists are faced with two tragic situations which affect their capacity to cope with the drought and feed their families. There is decreased herd productivity owing to the high

157Hogg, R. (1980), Pastoralism and impoverishment. The case of the Isiolo Borana of Northern Kenya, *Disaster*, 4(3), 299–310.

158Meier, V., Bond, F. & Bond, G. (2002), Environmental influences on pastoral conflicts in the Horn of Africa.

mortality rate, reduced or no milk production, no calving, and animal weight loss that affects the market value of the livestock. Pastoralists tend to reduce their livestock numbers during a drought out of desperation and to provide food for their families. Unfortunately, during droughts, livestock become emaciated and lose weight and do not attract competitive bids because buyers do not wish to take risks (¹⁵⁹).

Marginalization of the Pastoralists Due To Environmental Conflict

The livelihoods of pastoralist communities largely depend on livestock. Pastoralism is practised in a sensitive and insecure environment characterized by highly spatial and temporal rainfall distribution, which often results in long, dry periods. Therefore, pastoralism, as an economic activity, is indeed a precarious enterprise because it depends heavily on sensitive ecological systems. Climate change has been primarily caused by selfish and shortsighted human activities such as massive industrial production and deforestation, among others. Currently, climate change poses a threat to human development in terms of security and livelihood (¹⁶⁰). This sentiment has been underscored abundantly by various scholars and renowned personalities in many forums. Climate change and pastoralists' livelihood are interlinked processes: pastoralists and their livestock depend directly or indirectly on the environment; hence threats from climate change, particularly persistent drought, have far reaching consequences for them. Severe drought affects the availability of water resources and forage for livestock, and long periods of drought have led to the loss of large numbers of livestock in most pastoral areas.

The Borana pastoralists have adapted to the cyclic tendencies of the droughts, and with time have come to rely on traditional coping strategies aimed at minimizing losses from drought or facilitating recovery thereafter (¹⁶¹). These coping mechanisms include manoeuvres aimed at managing natural resources through flexibility and spreading risk, and include strategies such as mobility and/or migration, communal land ownership, large and diverse herds, herd separation and splitting, informal social security systems, forming economic alliances with non-pastoral communities, and engaging in non-pastoralist activities like farming and charcoal burning. Unfortunately, these strategies that have served the communities very well in the past are inadequate in the light of the frequent occurrence of droughts, rapid social and economic changes and deteriorating climatic conditions. This is in addition to the presence of other factors such as cattle rustling, the proliferation of small arms, social and economic marginalisation, poor government policies, illiteracy, population explosion and the displacement of pastoralists, which exacerbates their vulnerability amid the challenges already posed by climate change. There are about 200 million pastoral households with an estimated billion head of livestock worldwide.

¹⁵⁹Victor, A O, Anthony, N. & Mario, H. *Pastoral livelihood adaptation to drought and institutional interventions in Kenya*, Geneva, Human Development Report 2007/2008.

¹⁶⁰Omiti, J M. (2003) Development issues in pastoral areas: setting agenda for policy advocacy in Kenya.

¹⁶¹Mario, I A. (1998) *Being Oromo in Kenya*. Trenton NJ: African World Press Inc.

The pastoral system uses about a quarter of the available land worldwide and provides ten per cent of the world's meat production (¹⁶²).

In Kenya, about 16 per cent of the total land surface is utilised for arable farming and dairy production, while the remaining 84 per cent is classified as arid and semi-arid, and this sustains the pastoral livestock production system and wildlife. Livestock production contributes significantly to the national GDP of the Kenyan economy. It is estimated that about 70 per cent of livestock are found in the arid and semi-arid areas of Northern Kenya. This shows that the contribution of the arid and semi-arid areas is crucial for the development of the country. However, over many years, the pastoralists of Northern Kenya have faced challenges that have undermined their economies and traditional way of life. Among other things, these challenges include recurring drought, climate change, ethnic conflict, political and economic marginalisation, high population growth and competition for rangeland (¹⁶³).

The genesis of the marginalisation of the pastoralists of Northern Kenya can be traced to the beginning of the colonial era when colonists introduced grazing blocks to curtail the free movement of livestock in search of water and pasture. This was meant to limit the mobility of the pastoralists to make them amenable to the new governance system and minimise pastoral ethnic conflicts over natural resources. However, this division created ethnic consciousness and disrupted the traditional mode of access to the natural resources, reciprocity among different ethnic groups and mutual assistance during droughts and other calamities. After independence, nothing much improved for the pastoralists. Indeed, both ecological and political relations deteriorated following the extensive droughts of 1968 and 1973, and the secessionist war popularly called 'Shift a' in the northern part of Northern Kenya (¹⁶⁴). It was also between 1968 and 1973 that donor countries and international development agencies initiated programmes aimed at improving the livestock production and market integration of the pastoralists.

Traditional Pastoral Production Systems on Environmental Conflict

The guiding philosophy for this programme was predicated upon the argument propounded by Garret Hardin's 'tragedy of the commons', which held that traditional communal land ownership was wasteful and inherently degraded the environment. The government was therefore encouraged to promote the private ranching of livestock to conserve the environment better. Traditional pastoral production systems demand mobility, but the actions of the government prevented this movement through land alienation, the demarcation of grazing boundaries and the

¹⁶²Markakis, J. (2004) *Pastoralism on the margin*. Report for Minority Right Group International, Kavita Graphics, UK.

¹⁶³Hjort, A. (1979) Savanna town: rural ties and urban opportunities in northern Kenya. *Stockholm Studies in Social Anthropology*, Vol 7. Stockholm: University of Stockholm.

¹⁶⁴Food and Agricultural Organisation (FAO). *Pastoralism in the new millennium*. Rome: FOA, 2001.

mechanisation of boreholes, which encouraged pastoralists to remain in one place (Doti, 2005). Yet, the essence of pastoralism is constant movement from one place to another in pursuit of water and pasture, and hence the proposed limited mobility of the pastoralists challenged the very mode of their production systems and realities. Pastoralism continued to suffer as the government priority was dominated by the need to conserve the environment, eliminate poverty and spur economic growth through export agriculture. Pastoralism was seen to offer less to the state in terms of resources for the export market, hence was of less economic value to the government. Also because some pastoral communities like the Borana, Turkana and Pokot cross state boundaries in search of pastures and water, they are believed to lack reliability, political loyalty and even to pose a threat to national security (¹⁶⁵).

The challenges of pastoralism go beyond political governance. In recent years, the impact of inherent problems associated with climate change on people's livelihoods has generated public debate. A substantive report by the Intergovernmental Panel on Climate Change (IPCC) confirmed the occurrence of potential threats such as increases in temperature, heat waves, flooding, storms, droughts leading to famine, population displacement, the possible outbreak of diseases, decline in agricultural production and migration to urban areas. In Northern Kenya, climatologists project a substantial increase in the annual average temperature of between 3–5°C by the end of the millennium because of climate change. The increase in temperature brings consequences such as a loss of moisture and an increased evaporation rate. Coupled with declining precipitation, climate change worsens the aridity of the pastoral rangelands and affects a number of resources such as water, pasture and the edible fruits that pastoralists depend on. The ensuing consequences would be the decimation of livestock in large numbers, which could significantly affect pastoralist livelihood and security (¹⁶⁶).

Livestock define the economic, social and political hub of the pastoralists. For pastoralists to lose their livestock is to lose their entitlement, which makes them vulnerable and valueless in the society. While climate change affects crop and livestock production, the impact is felt even more keenly for pastoralists, because they inhabit fragile arid and semi-arid areas where the possible occurrence of drought becomes more frequent with climate change. Furthermore, pastoralists depend on an ecologically sensitive environment which responds drastically to changes in the climate. They also face other non-climatic stressors such as poor soil quality, weak infrastructure, armed violence, poverty and poor governance. All these factors combined render the pastoral communities even more vulnerable to climate changes. Interestingly, pastoralism has

165 Osamba, J., Sociology of insecurity: cattle rustling and banditry in north-western Kenya, , http://www.accord.org.za/ajcr/2000-1/accordr_v1_n2_a2.pdf (accessed 16 June 2008).

166Hendrickson, D., Armon, J., and Mearns, R. (1998). The Changing Nature of Conflict and Famine Vulnerability: The Case of Livestock Raiding in Turkana, Kenya. *Disasters*, 22(3), 185-199

been resilient despite all these challenges (¹⁶⁷). Pastoralists have implemented a wide range of adaptive mechanisms to cope with socioeconomic, political and environmental stresses.

Climate as a Catalyst of Environmental Conflict

People living in Northern Kenya face myriad challenges that undermine development in the region. Recurrent drought, violent conflict, cattle rustling and inadequate government attention are among the major constraints that hinder livelihood strategy in the area. The bulk of the population in Northern Kenya depends on pastoralism. A livelihood derived mainly from livestock foraging on the natural woody vegetation, grass and use of water resources as common property resource where opportunities for alternative livelihoods, including agriculture are limited due to high rainfall variability, recurrent droughts, harsh climatic and environmental conditions (¹⁶⁸). It is the way of life of some 13.2 percent of Northern Kenya's estimated 39 million people (2009 estimates) and contributes around ten percent to the Northern Kenyans Gross Domestic Product in 2002 and twenty five in 2001 (¹⁶⁹).

Pastoralist communities in Northern Kenya are almost solely dependent on the livestock products mainly milk, meat, blood, hides and skins for their livelihood (¹⁷⁰). It is estimated that 70% of the livestock in Northern Kenya are domiciled in the arid and semi arid areas and in possession of the pastoralists valued at Ksh 70 billion (¹⁷¹). Pastoralists are also actively involved in safeguarding the natural environment in the dry land through proper range management practice that promote biodiversity conservation and wildlife tourism in the country. It is estimated that 90% of the gazetted national parks and game reserves are located in drylands areas predominantly occupied by pastoralist communities (¹⁷²). Despite richness in livestock and natural resources base in areas occupied by pastoralists it records the highest incidences of poverty and people have the least access to basic services like education, nutrition, health and credit facilities compared with other areas in the country (GoK, 2005a). The highest poverty levels remain in the northern pastoralist districts, with huge proportions of the population falling below the national poverty line (¹⁷³). A number of factors had contributed to under development and high incidence of poverty in the pastoral communities in Northern Northern Kenya. Before

167Amisi, B. K. (1997), *Conflict in the Rift Valley and Western Kenya. Towards an early warning indicator identification*, paper presented at the USAID conference on Conflict Resolution in the GreatHorn of Africa, Kenya.

168Berger, R. 2003. Conflict over natural resources among pastoralists in Northern Kenya: A look at recent initiatives in conflict resolution. *International Development* 15:245-257.

169Simpkin, P.2004. Regional Livestock Survey in the Greater Horn of Africa: ICRC, p.31.

170GoK 2002. *Turkana District Development Plan 2002–2008*. Ministry of Planning and National Development. Nairobi, Government Printer. Gender and climate change-induced conflict in pastoral communities.

171GoK 2005b. *Sessional paper on sustainable development of arid and semi-arid lands of Kenya*.Ministry of Planning and National Development. Nairobi, Government Printer.

172Kenya Forestry Research Institute (KEFRI). 1992. *A Dryland Forestry Handbook for Kenya*: Kenya Forestry Research Institute.

173Kenya National Bureau of Statistics. 2007. „Basic Report on Wellbeing based on the 2005/6 Kenya Integrated Household Budget Survey, April Nairobi.

and after independence pastoralists have been sidelined in decision making process resulting to political and economic marginalisation.

The cause of this marginalisation is partly attributed to mobility and remote locations of pastoralists dwelling areas (¹⁷⁴). Cross border ethnic association of the pastoralists is another factor that has contributed to marginalisation. Most of the major pastoralist groups by nature of their mobile lifestyle move across national boundaries for instance Somalis between Ethiopia, Somali and Kenya, Borana between Ethiopia and Northern Kenya. These cross-border identities render pastoralists vulnerable in the political cultures of nation states. Pastoralists are sometimes believed by their fellow-nationals to have divided loyalties, and used as political mileage by other communities to lock pastoralist out of political dispensations (¹⁷⁵). In addition to the above factors, perhaps the greatest source of pastoralist marginalisation is the idea, which dominated much of the development thinking in the latter part of the twentieth century and in many areas continues today: that pastoralism is an outmoded way of life that needs replacing with modern livelihood systems.

Although the pastoral communities face myriads of challenges in their survival, they have devised many ways in mitigating or overcoming such challenges. The primary strategy of pastoralists is ensuring food security rather than maximum meat production; hence large herds are maintained to ensure adequate food in the event of drought and changes from cattle to sheep and goat husbandry as feed requirements of the later is less than the former (¹⁷⁶). Pastoralists nomadic mobility lifestyle enables them to access water sources and productive patches of land for forage and move away from disease. In the range lands the pastoralists have dry and wet season grazing areas where they have distinct calendar of movement between these areas. This calendar is now elusive due to severe droughts that are taking place more frequently than before. Previously the cycle of drought used to be fairly spaced but in recent years the length has shorten drastically from 20 years (1964- 1984), to 12 years (1984-1996), to 2 years: 2004-2006 (¹⁷⁷) and currently occurring on yearly basis (2007/2008/2009/2010/2011).

Climate variability in particular drought conditions stifle pastoralist livelihood strategy and anticipated climate change is expected to exacerbate the situation (¹⁷⁸). In Northern Kenya trend

174Oxfam. 2008. Survival of the fittest pastoralism and climate change in East Africa. Oxfam Briefing Paper 116, Oxfam International.

175Morton, H. (2002). Creating their Own Culture: Diasporic Tongans. In, Pacific Diaspora: Island Peoples in the United States and Across the Pacific, P. Spickard, J. Rondilla and D. Wright (eds.), University of Hawaii Press, Honolulu.

176Oba, G. and Lusigi, W. (2009), *An overview of drought strategies and land use in African pastoral system*. Paper 23a Overseas Development Institute, Pastoral development network, March.

177GoK 2008. *Turkana Central District Development Plan 2008–2012*. Ministry of State for Planning, National Development and Vision 2030. Nairobi, Government Printer. Nations University Institute for Environment and Human Security, Stockholm.

178Verhagen, A and Van Keulen, H. 1999. Analysis of rainfall variability and agricultural risk in sub-Saharan West Africa. Poster presentation at 20-23 September 1999, Reading UK. Food and Forestry: Global change and global challenges.

of increasing rainfall extremes especially the short rains and increase in intensity of the extreme drought currently experienced is expected due to climate change (¹⁷⁹). Occurrence of these extreme climate conditions will affect livestock and crop productivity in the area exerting more pressure on already fragile livelihood system. On the other hand, woody vegetation resources that are indigenous in Northern Northern Kenya could provide an additional opportunity for accelerated economic development.

Constraints in Changing Livelihood Strategy

The recurrent drought in Northern Kenya is a major challenge to pastoralist livelihood security and many people had already left pastoralist life style and many pastoral communities may look for exit strategy to other form of livelihood. Frequent cattle rustling, availability of food in town centers which reduces dependence on animal products and enrolment of young generations in schools also contributing. Some of the areas where people are shifting to partially or wholly are crop production in areas where agricultural production is viable, collection of gums and resins, exploitation of the precious stones, employed in government and other offices for those with education, engagement in various business enterprises (¹⁸⁰). Although transition to other forms of livelihoods are currently in progress peoples livelihood is so intertwined with livestock sector and dependence on pastoralism will remain an important income generating activity for foreseeable future. During the course of the survey community members gave varied constraints they are facing in shifting from pastoralism to alternative livelihood strategies.

Main constraints highlighted by respondents are: Lack of financial capital: about 51% of the respondents attribute lack of financial means as a major constraint in changing their livelihood. Many claim of having entrepreneurial skills of starting their own business but state that lack of capital is major bottleneck; Lack of knowledge: 40% of the respondents are not knowledgeable of alternative livelihood strategy and stated that the only livelihood they are used to is pastoralism; Lack of water and rainfall: scarcity of water is a major challenge for community members that had intention of shifting to crop production. The only area where crop is a viable option is along the river banks but also the water level is also declining due to ravaging drought that had lasted more than three years according to many respondents; Want to remain pastoralist: 4% of the respondent stated that they want to remain pastoralists and see no problem of remaining in the same lifestyle (¹⁸¹). This is a sentiment echoed by wealthy households. They claim that shifting to another lifestyle will take them long time to learn and adjust to it. Some also expressed the sentiment that owning livestock is a sign of wealth and prestige in pastoral set

179Downing, C; Preston, F; Parusheva, D; Horrocks, L; Edberg, O; Samazzi, F; Washington ,R ; Muteti, M; Watkiss, P and Nyangena, W. 2008. Report - Appendices, Kenya: Climate Screening and Information Exchange: AEA Technology plc. UK.

180Ame, A. 2006. Cross-border livestock trade and small arms and conflict in pastoral areas of the Horn of Africa: case study from the Southern Ethiopia and Northern Kenya. A paper to IASCP's Eleventh Biennial conference.

181Pkalya, Ruto; Mohamud Adan and Isabella Masinde - Edited by Martin Karim (2003) *Conflict in Northern Kenya: A Focus on the Internally Displaced Conflict Victims inNorthern Kenya*. Practical Action; Nairobi, Kenya.

up hence forfeiting it will relegate them to low social standing in the society. The bulk of the people who are strongly feel to remain in the pastoral life style are mainly the wealth households who benefiting from livestock keeping activity.

Environmental Conflict and Gender

Empirical research done by Cutter (¹⁸²), Denton (¹⁸³) and Enarson (¹⁸⁴) has shown that entitlements to elements of adaptive capacity are socially differentiated along the lines of age, ethnicity, class, gender and religion. Adaptive capacity is defined by Adger *et al.* (¹⁸⁵) as the ability or potential of a system to respond successfully to climate variability and change, and it includes adjustment in both behaviour and in resources and technology. Climate change is often seen as a technical problem, requiring technical solutions. However, there are many social and political aspects to this complex issue. Likewise, it is often argued that climate change is gender neutral implying that it affects women and men in the same ways. Yet, in many cases, communities interact with their physical environment in a gender-differentiated way. It is evident that women have different positions and faces different challenges to men in the coping and adapting to climate change. According to Agarwal women and men livestock keepers typically face different livelihood opportunities and constraints in managing livestock as well as in coping with health challenges such as HIV/AIDS, poor access to markets, services and technical information, periodic drought and disease, competing resource uses, policies that favour larger-scale producers or external markets, and weak institutions. In most systems, women provide labour for the various tasks related to livestock but may or may not control the process of decision-making, particularly over the disposal of animals and animal products.

Likewise, women may be involved in production, but may or may not own the means of production, including livestock, land, and water (¹⁸⁶). Furthermore, Women's Environment and Development Organisation, women as the majority of the world's poor, are the most vulnerable to the effects of climate change. Thus, during natural disasters, often more women die than men

182Cutter, S.L. (1995). The forgotten casualties: women, children, and environmental change. *Global Environ. Chang.*, 5: 181-194.

183Denton, F. 2001. Climate change, gender and poverty – Academic babble or realpolitik? *Point de Vue*, 14, pp. 1–2.

184 Enarson, E. (2002). Gender Issues in Natural Disasters: Talking Points and Research Needs. www.gdnonline.org/resources/ilo-talking.doc (Accessed 24 May, 2010).

185Adger, W.N.; Agrawala, S.; Mirza, M.M.Q.; Conde, C.; O'Brien, K.; Pulhin, J.; Pulwarty, R.; Smit, B. and Takahashi, K. (2007): Assessment of adaptation practices, options, constraints and capacity. *Climate Change 2007: Impacts, adaptation and vulnerability. Contribution of working group II to the fourth assessment report of the Intergovernmental Panel on Climate (IPCC)*, M.L. Parry, O.F. Canziani, J.P.

186Tipilda A, Kristjanson P. 2008. Women and Livestock Development: A Review of the Literature. International Livestock Research Institute (ILRI) Innovation Works Discussion Paper 01-09. ILRI, Nairobi Kenya.

http://www.ilri.org/Link/Files/InnovationWorks/WomenLivestock_Background_Literature_Review_Final.doc (Accessed 10 January, 2010).

because they are not warned, cannot swim or cannot leave the house alone. When poor women lose their livelihoods, they slip deeper into poverty due to the increase in inequality and marginalisation they suffer from because of their gender. As a result, climate change presents a very specific threat to women's security.

A CRITICAL ANALYSIS

Emerging Issues

Chapter three has highlighted that drought is one of the hurdles that may prevent Kenya from achieving the millennium development goals (MDGs), especially those related to poverty eradication, attainment of food security and promotion of environmental sustainability. This has set in motion a range of social problems, e.g. the dismantling of family ties, child abandonment and school drop-out (especially for girls), which have far-reaching implications for the country's development. The negative impact of drought on the environment cannot be over-emphasised. Desertification and loss of biological diversity are some of the challenges of the 21st century, and Kenya is not spared by these phenomena. Although unsustainable use of natural resources is widely accepted as the root cause of such problems, there is no doubt that drought plays an accelerating role in the processes of desertification and biodiversity loss. Only 2% of Kenya's land is under closed canopy forest. Any further loss of forest cover would thus be a tragedy. Drought is often viewed as an event rather than a process, which explains how the international community responds distributing relief food to stricken communities. While nobody can dispute the benefits of doing this in emergency situations, widespread use of this response in drought management is highly debatable: not only does relief food tend to keep the receiving communities in a state of absolute dependency, but it also comes at a tremendous cost.

Social Factors

Protracted clashes and escalation of conflict cause the breakdown of contact between neighbouring or adjacent communities and the consequent loss of lengthily constructed social networks (for example through inter-clan marriages) and institutions which have proved to be crucial for coping with uncertainty⁽¹⁸⁷⁾. Insecurity in rural areas and the associated increase in poverty and destitution contribute to the increased number of people moving to towns, where already a large majority of the population lives in unplanned settlements, without legal access to land or services. Further pressure on resources in urban settlements is likely to result in the intensification of urban conflicts⁽¹⁸⁸⁾.

187Hassan Z. M. 1997? The Role and Effects of Somali Pastoralist in Conflict. Paper presented to the workshop *Promoting the land rights of pastoralists in the Horn of Africa*.

188Malombe, J. 1997. *Conflict in Urban Settlements in Kenya: Access to Land and Services in Unplanned Settlements*. A paper prepared for the USAID Conference on Conflict Resolution in the Great Horn of Africa, June 1997.

Although there is very little systematic documentation of violence upon women some points can still be made. Insecurity for young women means also the risk of rape and abduction. Seifert⁽¹⁸⁹⁾ argues that the social effects of rape have to be measured in terms of the threat that violence upon some women represents for all women, and the role that such a threat plays in influencing women's behaviour in general. In conflict-prone areas, the risk of rape or abduction of girls creates a pressure for early marriage. In a hurry to place the girls safely in marriage, their families are ready to accept unusually low bride wealth. Under pressure from their families and well aware of the risks involved in waiting, the girls lose the negotiating power that they might have had on the issue. One of the consequences of this is a considerable lowering of the age of marriage, possibly triggering an increase in fertility rate.

The risk of rape connected with violent conflict may persist, or even increase, even when women flee from conflict-prone areas. A huge incidence of rape has been recorded in refugee camps in the North East, apparently confined to Somali women (personal communication, Nairobi Workshop;¹⁹⁰). Little is known about how raiding transforms the marketing activities of pastoral women. Insecurity is likely to reduce the possibility of selling milk in a neighbouring town. A raiding-induced shift in household herd species composition from large to small stock is also likely to reduce women's income from milk sales, as well, possibly, as increasing women's labour load. Women and children or sometimes just children, are sent away from dangerous areas to distant villages and often to towns. Intense and prolonged situations of conflict tend to create large numbers of displaced children in urban centres, usually living in a state of abandonment, with no assets, health facilities or education⁽¹⁹¹⁾. These children are likely to become cheap fighting manpower to fuel existing and new conflicts.

Insecurity affects formal education directly. Teachers may abandon conflict-prone areas due to lack of security, and the schools are closed. During the clashes in Wajir in 1992-95 some 160 civil servants, including teachers, either left the district or refused their appointment there; forty five primary schools, and five secondary schools were affected by violence; ten primary schools serving 2,500 students were closed⁽¹⁹²⁾. Poverty and destitution further diminishes the already scant possibility that parents have to afford the costs even of primary education.

189Seifert R. 1993. *War and Rape. Analytical Approaches*, Women International League for Peace and Freedom (WILPF), Geneva.

190 African Development Bank, African Development Fund (2003), *Involuntary resettlement policy*, available at: <http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/10000009-EN-BANK-GROUP-INVOLUNTARY->

191El Hadi El Nagar S. 1992. Children and War in the Horn of Africa. In: Doornbos M., Cliffe L., Ahmed A.G.M and Markakis J. (eds) *Beyond Conflict in the Horn. The Prospects for Peace, Recovery & Development in Ethiopia, Somalia, Eritrea & Sudan*, The Institute of Social Studies and James Currey, The Hague, London.

192Ibrahim D. and Jenner J. 1996. Wajir Community Based Conflict Management, Paper presented to the USAID Conference on *Conflict Resolution in the Great Horn of Africa*, June 1997.

Privatization

By preventing customary, highly productive, tracking strategies, privatization of pastoral lands reduces the capacity of the land to support livestock. In the long term, privatization increases social polarization and deprives large numbers of people among the poorest sector of the population of crucial resources they need to sustain their livelihoods. At the same time, the very high costs of implementing private property systems divert time and important resources from survey work and conflict arbitration (¹⁹³). The Group Ranch programme, for example, was intended to transform communal grazing lands into deeded holdings with individual rights and responsibilities of land ownership, simplifying and integrating customary land tenure within a legal framework (¹⁹⁴). However, the combination of different sets of rules paradoxically resulted in a “vacuum of authority”, which generated a number of conflictual situations in which members were often unable to agree on the use of the land, whilst overgrazing and illegal grazing became more difficult to control and factionalism increased (¹⁹⁵).

Northern Kenya pastoralists surveyed in 1996, strongly disapproved of the privatization of land. Among other reasons, they mentioned inter- and intra-clan conflicts, as a result of land enclosure and boundary disputes (including killing between close relatives). According to Lane and Moorehead (¹⁹⁶), to be effective, innovative land tenure policies for dryland pastoralists must take into account that today customary land tenure systems are irreversibly undermined by the structural changes pastoral society is undergoing. New policies should recognize this transformation of pastoral society and deal with the diversity of interests within it, including a growing rich vs poor polarization, absentee herd owners and the interests of wider economic and political structures.

Overlapping Attributions of Responsibility for Natural Resource Use

The rules of natural resource management are now characterized by an overlap between customary tenure systems, and formal systems enacted by the state. In addition, the spread of the market economy, and development interventions in tenure and resource control, have created a situation where there is no longer one unambiguous set of rules about natural resource use. Instead, individuals can pick and choose which set of rules they will base their actions on, and appeal to, in case of conflict. Thus a herder who wishes to control a water source or dry season

193 Lane C. and Moorehead R. 1994. New directions in rangeland and resource tenure and policy. In: Scoones I. (ed) *Living with Uncertainty: New Directions in Pastoral Development in Africa*, Intermediate Technology Publications Ltd, London.

194 Evangelou P. 1984. *Livestock Development in Kenya's Maasailand: Pastoralists' Transition to a Market Economy*, Westview Press, Boulder CO and London.

195 Lane C. and Moorehead R. 1994. New directions in rangeland and resource tenure and policy. In: Scoones I. (ed) *Living with Uncertainty: New Directions in Pastoral Development in Africa*, Intermediate Technology Publications Ltd, London.

196 Amisi, B. K. (1997), *Conflict in the Rift Valley and Western Kenya. Towards an early warning indicator identification*, paper presented at the USAID conference on Conflict Resolution in the Great Horn of Africa, Kenya.

pasture can try to obtain it under customary tenure rules using ethnic or clan links, and if that fails can appeal to the local authority or the courts using formal law. If both of these fail, bribery of local officials may achieve the same result. As a result, there are fewer clear attributions of responsibility about natural resource use, and a much greater potential for conflict over disputed use.

The ambiguity of overlapping sets of rules can be used as an advantage by the state, and not only by individual actors. Ambiguous tenure systems provide the state with formal and informal revenue from the arbitration of conflict. Meanwhile, the process gives the elite within state structures a gateway to formerly inaccessible pastoral resources. The imposition of formal administrative and legal framework enables people who have better access to the state to claim new property rights to resources, to the disadvantage of those who do not have the same connections. On the other hand, the government may use these new claims to give a juridical face to political interventions against nomadic pastoralists. Amisi (¹⁹⁷) report the case of Orma sedentary livestock owners, whose claims of exclusive property rights on traditionally communal grazing land were given credit by the government, and used to justify interventions against the presence of Somali pastoralists in the area.

Trust land

The confusion over land tenure is not only a matter of ambiguity between formal and customary law. There are five land registration laws in Kenya. Non private land, falls into two broad categories of Government Land and Trust Land. The latter, which forms most of the pastoral areas, is enshrined in the Constitution and governed by four different Acts (¹⁹⁸). The Constitution (Section 115) gives trust land to county councils to hold in trust for the benefit of the people ordinarily resident on it and in recognition of their rights according to 'African customary law'. However, a clause in the same section allows for the legal manipulation of customary law by stating that 'no right, interest, or other benefit under African customary law shall have effect, so far as it is repugnant to any written law'. Even without legislative action, customary rights over trust land can be extinguished through the procedure of "setting apart" certain areas (Section 113). This can be done by Parliament or government for the purpose of prospecting for or extracting minerals or oil directly or in favour of public or semi-public corporations and by county councils, for any purpose that 'in the opinion of that county council is likely to benefit the persons ordinarily resident in that area or any other area of trust land vested in that county council' (Section 117).

197 Amisi, B. K. (1997), *Conflict in the Rift Valley and Western Kenya. Towards an early warning indicator identification*, paper presented at the USAID conference on Conflict Resolution in the GreatHorn of Africa, Kenya.

198Lenaola I. Jenner H.H. and Wichert T. 1996. Land tenure in pastoral lands. In: Juma C. and Ojwang J.B. (eds) *In Land We Trust. Environment, Private Property and Constitutional Change*, Initiatives Publishers and Zed Books, Nairobi and London.

Government land, under which many important pastoral grazing lands fall, is controlled by the Commissioner of Lands office and the President. Government land can be, and regularly is, given to farmers as freehold land, but not to pastoralists. In Northern Kenya, large areas of trust land are lost to irrigation schemes, game reserves, wheat farming and other cultivation. Overlapping and contradictory rights of exclusion legitimised by the parallel Acts and tenure systems, lead to lack of respect for the law, often leading in turn to open conflict. The recent *Legal Framework on Pastoral Land Tenure and Legislation for the Arid Lands of Kenya* finds that ‘county councils have abused the trust placed in them by the law’ and recommends the transfer of such trust land to a different legislative framework⁽¹⁹⁹⁾. The *Legal Framework* also recommends several amendments to current legislation (included Chapter IX of the Constitution), in order to enable the recognition of pastoral communities as legal entities and to give legal credence to their traditional authority in the matter of land tenure.

External interventions

Conflictual situations over access to resources may result from government or development agency intervention, if these affect the status of existing resources or create new ones without integrating them within a specific system of access regulation. For example, among the Boran, only traditional deep wells are subject to controlled access rights. The access to grazing land does not need to be regulated as it is indirectly restrained by the access to water. The availability of water also puts restraints on the size of the herds. The provision of drilled public wells and boreholes in dryland areas, which are not controlled by customary institutions, has allowed herd size to increase. This has affected the relationship between livestock and pastures, generating endless disputes concerning access to grazing land⁽²⁰⁰⁾.

Political elections have the effect of causing large movements of people and unusual concentrations of people at abnormal times of the year. This can create: (a) a “competition for resources” type of situation, easily exploited and a handy cover for politically fuelled hostilities of the type described in chapter 2; (b) spontaneous disputes over resource use and (c) easy and attractive targets for large scale raiding. Cases (b) and (c), particularly, apply to any ecological, political or economical phenomenon capable of creating abnormal movements and concentrations of homesteads, including for example drought. The pastoralists in Northern Kenya have been experiencing conflicts that have resulted in social, economic, political and ecological crises. Such situations have emerged when their interests and needs for access and exploitation of the available resources have collided with those of their neighbours. Conflicts

199RANTCO, Research and Training Consultants 1998. *ALRMP Study on Land Tenure and Resource Management in Kenya. Legal Framework on Pastoral Land tenure and Legislation for the Arid Lands of Kenya*, Republic of Kenya, Office of the President, Department of Relief and Rehabilitation, Nairobi.

200Helland J. 1994. *Development Interventions and Pastoral Dynamics in Southern Ethiopia: A Discussion of Natural Resources Management in Borana Pastoralism*. Working Papers in African Studies No 186, African Studies Center, Boston University, Boston.

have continued to hamper the implemented activities for Drought Risk Reduction in Kenya⁽²⁰¹⁾, and in neighbouring countries.

Social Implications of Conflict

Insecurity causes human suffering and death, provokes spirals of revenge attacks and turns large tracts of land into “no-go” areas. This hinders the delivery of vital services such as education and human and animal health care. Raiding for example has a significant impact on animal health because it increases trans-boundary epizootic disease transmission and impedes the improvement of primary veterinary services and the livelihoods dependent on livestock keeping⁽²⁰²⁾

Another sector that has taken a heavy toll from conflict is education. The assessment established that while reported incidences of closures are moderate, the effect of conflict on actual school attendance is far more than closure figures suggest. For instance, in Tana River, the study established that between 1994 and 2002, a total of 36.6% of primary school age children were not in school, a situation attributed to insecurity and the resultant poverty in the district. This effect spilled over to secondary school enrolment where a paltry 14.3 % of those eligible were enrolled. In addition, the education of girls suffers more in conflict prone areas⁽²⁰³⁾. Some of the conflict affected pastoralists have been reduced to poverty and destitution.

The loss of human life and property; casualties and displacements of large segments of the communities; disruption of socio-economic activities and livelihoods, increased hatred between communities, environmental degradation and threat to water catchment areas are common impacts. Others include increased economic hardships as a result of loss of livelihoods; high levels of starvation and malnutrition among the displaced groups and unprecedented dependency syndrome on relief food are the main negative impacts of the increasing and severe inter-ethnic armed conflicts in northern Kenya⁽²⁰⁴⁾. The provision of food aid among the displaced groups has resulted in unprecedented dependency syndrome among the community⁽²⁰⁵⁾ The social implications of conflict that have been highlighted in literature documenting past studies on conflict issues and during field work for this study are thus summarized as follows:

201Mwaluma, Davis Micho and Simon Macharia Mwangi (2008) *Review and Analysis of Existing Drought Risk Reduction Policies and Programmes in Kenya*: National Report on Drought Risk Reduction Policies and Programmes; Ministry of State for Special Programmes Office of the President, Republic of Kenya. SIDA /UN-ISDR; May 2008.

202MSSP (2004) Draft National Policy for the Sustainable Development of Arid and Semi arid Lands of Kenya - December 2004. Ministry of State for Special Programmes; Republic of Kenya.

203Adan, Mohamud and Ruto Pkalya (2005) *Closed to Progress: An Assessment of the Socio-Economic Impact of Conflict on Pastoral and Semi-Pastoral Economies in Kenya and Uganda*. Practical Action – Eastern Africa; May 2005.

204Hagmann, Tobias (2003) *Mitigating Violent Resource Conflicts in the Somali Region of Ethiopia*; Lecture at ZEF Research Meeting, Center for Development Research, Bonn November 19, 2003. National Centre of Competence in Research North-South.

205Pkalya, Ruto; Mohamud Adan and Isabella Masinde - Edited by Martin Karim (2003) *Conflict in Northern Kenya: A Focus on the Internally Displaced Conflict Victims in Northern Kenya*. Practical Action; Nairobi, Kenya.

There has been breakdown of traditional institutions, social networks and social relations⁽²⁰⁶⁾ and increased hatred between communities; constant fear, loss of confidence and mutual trust; Women are particularly vulnerable to insecurity and conflict because they are responsible for their children and the elderly men, and cannot flee during periods of raiding. This is reflected in the erosion of the existing social set-ups through changes in household composition, particularly the increase in women-headed households. The increase in women-headed households is to a large extent attributed to the raiding and killings that usually lead to several women losing their husbands⁽²⁰⁷⁾.

The resultant women-headed households are particularly vulnerable because women have poor customary rights to land, water wells and livestock. The major implication in this regard is subsequent inter-generational transmission of chronic poverty, and the inherent discriminatory social structures (such as customary law-sanctioned dispossession of inheritance, gender barriers to specific economic activities and less opportunities for education particularly for the girl child). This exacerbates the difficulties created by the affected women's new role as primary income-earners for their households; Armed conflict that is more often characterized by malnutrition, poor sanitation and withdrawal of health personnel from such areas⁽²⁰⁸⁾ and recurrent traumatic disasters (Amina Hassan – personal communication); seriously constrains the care system in the household and the community. Mothers in particular may have to take up completely different roles in the household with a different daily routine as a result of conflict conditions. This may interfere with breast-feeding, for example, when the family splits up, or the mother is forced to spend long hours to get food, water and fuel⁽²⁰⁹⁾.

The usual emphasis on protection of livelihoods during conflicts has had more negative implications for childcare and overall household welfare; Disrupted operations or closure of the usually remotely located infrastructures/facilities such as schools, dispensaries/health centres. In case of the latter, there have been reports of deaths from medical conditions that would have otherwise been controlled; Loss of human life and displacement of large segments of the communities; for instance, according to Mwaluma and Mwangi⁽²¹⁰⁾, over 70 people died in

206Pantuliano, Sara and Mike Wekesa (2008) *Improving Drought Response in Pastoral Areas of Ethiopia: Somali and Afar Regions and Borena Zone of Oromiya Region*. Prepared for the CORE group (CARE, FAO, Save the Children UK and Save theChildren US); Humanitarian Policy Group Overseas Development Institute, London. January 2008.

207Orero, Max Baldwin; Charlotte Heime, Suzanne Jarvis Cutler and Sarah Mohaupt (2007) *The Impact of Conflict on the Intergenerational Transmission of Chronic Poverty: An Overview and Annotated Bibliography*. Chronic Poverty Research Centre; ISBN: 1- 904049-70-2. March 2007.

208UNESCAP (2011). *Statistical Yearbook for Asia and the Pacific 2011*. United Nations Economic and Social Commission for Asia and the Pacific. Thailand.

209FAO (1996) *Study on the Impact of Armed Conflict on the Nutritional Situation of Children: A Report*; FAO Corporate Document Repository; Agriculture and Consumer Protection. Food and Agriculture Organization of the United Nations.

210Mwaluma, Davis Micho and Simon Macharia Mwangi (2008) *Review and Analysis of Existing Drought Risk Reduction Policies and Programmes in Kenya: National Report on Drought Risk Reduction Policies and* [International Academic Journals](http://www.iajournals.org)

Mandera District and over 30,000 people were displaced following the renewed conflict pitting the Murulle against the Garre after suspected Murulle gunmen shot dead a Garre relief worker near El Wak border town in December, 2004 and crossed to Northern Kenya. Elsewhere, there were 3,094 deaths; over 206,830 people displaced, and at least 94 schools closed following conflicts in sampled rangeland districts of Kenya between 1994 and 2004 ⁽²¹¹⁾; The segment of the population that gets completely cut off from their livelihood options becomes vulnerable to a number of calamities such as diseases, hunger e.t.c; Breakdown or increased pressure on the community-level social networks (usually comprised of clan or family affiliations) that support vulnerable (particularly the womenled) households who are dependent on such networks during droughts due to conflict situations, is a common phenomenon ⁽²¹²⁾. The breakdown disrupts the networks' vital roles as coping and survival mechanisms, or in protecting livelihoods in conflict situations.

Economic Factors

The ability of pastoral populations in East Africa to manage their own resources has long been viewed with skepticism. In large part, this skepticism results from the view that pastoral production is the cause of degradation and desertification, due to the inherent incentive problems of common property production and the cultural values of pastoralists. Due to the nature of the production system and the cultural context of production, it has been proposed that herders will accumulate more animals than is optimal from an environmental perspective. Policies influenced by this view were common in the colonial and early post independence period. Sobania ⁽²¹³⁾ quotes colonial era documents from the 1930's arguing that since pastoralists in northern Kenya own far too many animals from an environmental point of view, veterinary programs will be counterproductive. Rather, the document suggests a bit of disease now and then is to be encouraged in their stock provided it doesn't reach epidemic form. Lipscomb ⁽²¹⁴⁾ summarizes the problems of the pastoral livestock sector of Kenya in one word overstocking and describes controlled grazing schemes to address this problem. Brown ⁽²¹⁵⁾ suggests the objective of conservation can be met by combining destocking with the partial removal of human populations

Programmes; Ministry of State for Special Programmes Office of the President, Republic of Kenya. SIDA /UN-ISDR; May 2008.

211 Adan, Mohamud and Ruto Pkalya (2005) *Closed to Progress: An Assessment of the Socio-Economic Impact of Conflict on Pastoral and Semi-Pastoral Economies in Kenya and Uganda*. Practical Action – Eastern Africa; May 2005.

212 FAO (1996) Study on the Impact of Armed Conflict on the Nutritional Situation of Children: A Report; FAO Corporate Document Repository; Agriculture and Consumer Protection. Food and Agriculture Organization of the United Nations.

213 Sobania N. 1991. Feasts, Famine and Friends: Nineteenth Century Exchange and Ethnicity in the Eastern Lake Turkana Region. In: Galaty J.G. and Bonte P., *Herders, Warriors, and Traders: pastoralism in Africa*, Westview, Oxford, San Francisco, Boulder CO.

214 Lipscomb, J. (1955). *White Africans*. Faber and Faber: London.

215 Brown, L. (1971). The Biology of Pastoral Man as a Factor in Conservation. *Biological Conservation*. 3(2): 93-100.

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from semi-arid areas to ease population pressure and with change in the diets of those who remain behind.

As the nature of pastoral production is posited as the underlying cause of degradation, this perspective holds out little hope that the pastoral population will be capable of addressing rangeland degradation. Barnes⁽²¹⁶⁾ argues the future of large tracts of Africa thus depends, in the first instance, on drastic changes in traditional attitudes towards land-use among relatively unsophisticated and uneducated indigenous peoples. The can only be brought about by concerted and well-planned programs of rural reform and education. Walker (1979) supports the view that such programs will require direction from outside the pastoral sector. He argues that since people with initiative and high capabilities are attracted away from semi-arid regions to higher potential zones, semi-arid ecosystems have, therefore, often been managed by a segment of the population which constitutes the least capable, least innovative group, often disinterested in what they are doing, but not capable of changing their circumstances.

These views influenced the design of development programs in pastoral areas. In a review of World Bank pastoral development schemes, de Haan⁽²¹⁷⁾ describes the development efforts arising from this approach as falling into the “Ranching Phase”. This phase began in the colonial period and lasted until the mid 1980’s. It involved the transfer of western technology to arid African rangelands, and involved a high degree of capital investment and direction by expatriate staff⁽²¹⁸⁾. The objective was to transform pastoral production into commercialized ranching, which it was believed would simultaneously increase human welfare by commercializing livestock production systems and reverse environmental degradation by addressing common property incentive problems.

The outcome of these efforts was disappointing. Scoones describes the experience of development efforts in pastoral areas as one of unremitting failure millions of dollars have been spent with few obvious returns and not a little damage. Baxter⁽²¹⁹⁾ states he pleaded in vain for someone to cite just one pastoral development project which had been even partially successful, so that we might learn from success if we refused to do so from failure. One of the main lessons learned from this failure, albeit slowly, was that the projects implemented during this era lacked support of the affected population. Marty writes: The vast investment poured into the livestock

216Barnes, D. (1979). Cattle Ranching in the Semi-arid Savannas of East and Southern Africa. In B. Walker (Ed.). *Management of Semi-arid Ecosystems*. Elsevier Scientific: The Netherlands. 9-54.

217de Haan, C. (1994). *An Overview of the World Bank’s Involvement in Pastoral Development*. Pastoral Development Network, # 31b. London: Overseas Development Institute.

218Moris, J. (1998). *Under Three Flags: The Policy Environments for Pastoralists in Ethiopia and Kenya*. SR/ GL-CRSP Pastoral Risk Management Project Technical Report 04/99. Utah State University, Logan.

219Brandstrom, P. (1985). *Do We Really Learn From Experience?* In A. Hjort (Ed.). *Land Management and Survival*. . Scandinavian Institute of African Studies: Uppsala. 41-56.

sector has failed to achieve anything, because of the exclusively technical definition of the activities and the indifferent participation of the producers (²²⁰).

Economic Outcomes

Economic analysis of the outcome of conflicts shows that outbursts of violence between pastoralists affect milk and livestock prices, and indirectly the prices of many other goods, as insecurity and low incomes influence both demand and supply. On the other hand, the loss of livestock usually induces herders to sell animals in order to buy food, to compensate for the fall in milk production (²²¹).

Loss of Livestock

If with reciprocal raiding the looted animals remain within the pastoral economy and therefore can always be raided back at a later stage, with commercial raiding the raided animals are channeled into the wider national or international economy and permanently lost (²²²). In the case of recent Wajir inter-clan clashes, as one part allied with clans in Northern Kenya and the other with the Boran, most of the raided animals went to Northern Kenya and Ethiopia.

Loss of Other Property

Apart from the raided animals, recent conflicts have involved the loss of large quantities of property. In three years of inter-clan clashes in Wajir, for example, more than 1,500 homesteads were looted and burned, some 500 business were looted, several of which were also destroyed, 30 vehicles were robbed or hijacked and 5 were stolen (²²³).

Loss of Grazing Land and Water Points

Leaving land ungrazed not only causes an immediate loss of production but also its degradation in the long term, as decreased grazing pressures result in bushy, ungrazable vegetation gradually taking the place of grass (²²⁴). Water points are also degraded by not being used. The shrinkage in grazing and water availability due to insecurity causes abnormal concentrations of animals in safe areas, thus also leading to ecological degradation and increasing the risk of new disputes (Hassan, 1997).

220 Sylla, D. (1995). Pastoral Organizations for Uncertain Environments. In I. Scoones (Ed.). *Living with Uncertainty: new directions for pastoral development in Africa*. Intermediate Technology Publications: London. p. 134-152.

221 Ibrahim D. 1994. *Report on the 'Peace and Development' Workshop, Wajir, 19-22 December 1994*, Nomadic Primary Health Care Programme, Wajir.

222 Hendrickson D., Mearns R., Armon J. 1996. Livestock Raiding among the Pastoral Turkana of Kenya. Redistribution, Predation and the Links to Famine. *IDS Bulletin* 27(3):17-30.

223 Ibrahim D. and Jenner J. 1996. Wajir Community Based Conflict Management, Paper presented to the USAID Conference on *Conflict Resolution in the Great Horn of Africa*, June 1997.

224 Bollig M. 1990. Ethnic conflicts in North West Kenya: Pokot-Turkana raiding 1969-1984. *Zeitschrift für Ethnologie* 115:73-90.

Destitution and Displacement

Increasingly over the past two decades, large-scale raids seem to be a major cause of destitution among pastoralists. Raids cause much more rapid and focused damage than drought, which is more likely to jeopardize customary strategies for risk distribution, animal-loss management and restocking. Large raids directed at numerous homesteads simultaneously may decimate an individual's livestock in a few hours and leave destitute the whole network of friends and relatives who might have represented a source of help. Research in three famine camps in Turkana District, in the late 1980s, showed that 47 percent of those interviewed saw raiding as the only cause of their destitution, and 75 percent saw it as a significant factor (McCabe, 1990).

Just like severe droughts, exceptionally large-scale raids attract national and international interest in the most badly affected areas, and may mobilize aid and relief agencies which are unlikely to react to small raids and banditry. Perverse as it may seem, this may represent a chance also for those families which have become destitute because of minor events which did not attract national interest. To agencies and field operators with a limited budget and scope, is left the thorny problem of sorting out “peace-time” destitute families from genuine “conflict” victims⁽²²⁵⁾.

Large-scale raids are a classic covariate risk, happening to everyone in a particular area at once, compared to individual risk which strikes individuals randomly. The food security literature suggests that governments should insure people against covariate risk, whilst encouraging individuals and local communities to insure themselves against individual risk⁽²²⁶⁾.

Cattle Lost To the Weapons Trade

The increasing demand for automatic weapons induces a continuous flow of livestock out of the pastoral economy, in payment for arms⁽²²⁷⁾. In 1997, There were estimated to be about 1,500-2,000 guns in Wajir District, with another 1,000 being turned over to the government. According to local market prices of guns, this corresponds to approximately 25-30 million Ksh (US\$ 500 - 600,000) “frozen” in weapons, without considering the cost of ammunition.

Conflict and Social Differentiation

Automatic weapons can be seen as a new means of capital accumulation, which contributes to the ongoing process of economic differentiation between pastoralists. Belshaw⁽²²⁸⁾, who suggests this approach, identifies five processes of capital accumulation involved in modern raiding: modern weaponry, fighting men, livestock, range/water supply, and knowledge about

225WPDC 1997?a. *Questionnaire for Women, and responses. On conflicts in 1992-1995 in Wajir*, Wajir Peace and Development Committee.

226Dasgupta P. 1993. *An Enquiry into Well-Being and Destitution*, Clarendon Press, Oxford.

227Hendrickson, D., Armon, J., and Mearns, R. (1998). The Changing Nature of Conflict and Famine Vulnerability: The Case of Livestock Raiding in Turkana, Kenya. *Disasters*, 22(3), 185-199.

228Belshaw 1999. *The Kalashnikov Economies of the Eastern Sahes: Cumulative or Cyclical Differentiation between Nomadic Pastoralists?* Paper presented at the first Workshop of the Study Group on Conflict and Security of the Development Studies Association, South BankUniversity, March 1999.

cropping system technology (for example via abducted women from agro-pastoral groups). The interaction of these processes, it is argued, appear to have replaced the negative feedback of traditional livestock raiding (homeostatic effect on animal distribution over time) with new 'positive feedback reactions'. In a more general way, conflicts allow some groups of people and individuals to capitalize on the insecurity and to usurp land or purchase it at extremely advantageous prices from the victims who have no alternative but to leave.

Induced Marketing of Animals

Livestock market prices drop as food shortages and increased prices of essential goods force people to sell animals. The market supply of animals is also increased by the threat of rustling. Herders prefer to sell at a disadvantageous price rather than risking losing everything in a raid. Nyukuri (²²⁹) reports that in West Pokot, during the clashes around the 1992 elections, the price of a mature bull dropped by 60 percent or more. However, the price of meat drops in the areas affected by clashes or heavy raiding but not in distant large markets (for example in Mombasa). Ocan (²³⁰) notices that the herders' wish to sell as a response to raids is very convenient for livestock traders, who may take advantage of desperate sales in conflict prone areas and then make huge profits by taking the animals to distant markets where prices are high. With respect to the effects on the market, one should therefore distinguish between the immediate and direct consequences of violence, and the long term indirect consequences of insecurity. Livestock prices are high after droughts; if raids take place in conjunction with high prices, than raids should increase after drought both for economic reasons and because poor households are desperate to get back to a viable herd. Could the market fluctuation of certain prices be useful as an early warning indicator for raids? On the other hand, as raids increase the sale of cattle, in periods of escalation or after large-scale raids we may expect a fall in the cattle market prices due to the flood of supply, and perhaps a vicious circle in which low cattle prices force herders to sell even more.

Poor Natural Resource Governance

Good governance the key aspects of which are accountability, the rule of law, transparency, equity and participation is an important, if not crucial, aspect of human development. When livelihood strategies shift in response to changes in the availability of natural resources, governance plays a critical role in resolving tensions between competing user groups, as well as preventing violent conflict. Policies, processes and institutions, both formal and informal, are powerful forces that either help or hinder access to natural resources. State regimes and individuals working within those regimes may actively block access to essential resources, just

229 Nyukuri B.K. 1997. The Impact of Past and Potential Ethnic Conflicts on Kenyan's Stability and Development. A paper prepared for the USAID Conference on *Conflict Resolution in the GreatHorn of Africa*, June 1997.

230Ocan C.E. 1994. Pastoral Resources and Conflicts in North-Eastern Uganda: the Karimojong case. *Nomadic Peoples* 34-45: 123-135.

as they may facilitate access to others (²³¹). When local or national institutions deliberately marginalize particular groups, livelihoods are constrained and the likelihood of conflict increases. This may result in violence if dispute resolution mechanisms fail and individuals or groups attempt to resolve their differences through the use of force. The combination of discontent among people whose livelihoods are stressed and efforts by those intent on regime change, can lead to the emergence of grave security threats where resources play a major role.

Governance itself can also be a source of conflict, even when it is designed to reduce tension or improve livelihoods. Natural resource policies and interventions are often made without the active participation of affected communities or sufficient consultation of stakeholders. In some cases, these interventions can conflict with traditional practices, while in others they can unintentionally benefit some groups to the detriment of others. Poor planning, coordination and informationsharing between development projects can also cause conflict as they unintentionally impact resource users or compete for the same limited resource. Corrupt practices or decision-making processes can also be a direct source of tension (²³²). Case Study on governance failure in Northern Kenya illustrates the negative role that political elites can play in natural resource mismanagement. Natural resources that are shared across national borders represent a specific governance challenge. Freshwater, migratory animals, and environmental challenges such as desertification and air pollution, are transboundary issues that require multilateral governance.

North-Eastern region of Kenya is an arid and semi-arid region, characterized by steady erosion of natural resources from which households and communities construct their livelihoods. Given the fact that cattle raising is the main source of income, competition over control and access to natural resources such as pasture and water have contributed to the violence among pastoralist communities. The tensions between the communities tend to intensify whenever there is a prolonged drought. Shrinking economic prospects for affected groups are a cause and affect of the violence. However, there are also examples where pastoral communities make peace during the dry season in order to share scarce resources (²³³).

Economic Implications

The re-allocation of government, donor and private sector resources to address the frequent conflict incidences and to maintain security (²³⁴), has drawn away such resources from productive activities and basic services. Available conflict study reports and KII/FGD

231Cliffe L. and Luckham R. 1999. Complex political emergencies and the state: failure and the fate of the state. *Third World Quarterly* 20(1): 27-50.

232Cohen R., and Bradley M. (2010), *Disasters and Displacement: Gaps in Protection*, in *Journal of International Humanitarian Legal Studies*, vol. 1, 2010.

233De Vries (2007), *Conference: Conflict and Violence in Kenya: The Strife for Interests Identity and territorim*, Nairobi: University of Amsterdam.

234WPDC 1997?b. *Questionnaire for Combatants, and responses. On conflicts in 1992-1995 in Wajir, Wajir Peace and Development Committee.*

respondents were unanimous in the observation that conflicts have to a large extent resulted in loss of livestock, which comprise the main livelihood for pastoralists. The situation is often aggravated by loss of household property and other key assets. Such losses have significantly reduced the communities' resilience to disasters such as drought. Migrants from the highlands settle as crop farmers in areas (often on the best land) previously used for grazing, erect fences that block the pastoralists' migration routes and grazing fields.

This escalates conflicts. Although such populations are well adapted to the harsh physical environment, any gains from these adaptations are continually undermined by violent conflict and clashes over resources. In spite of the potential for sustainable and fruitful livelihoods, violent conflicts, raiding and clashes over land use continually undermine ASAL livelihoods and wealth creation⁽²³⁵⁾. The conflicts have limited economic opportunities, enhanced poverty, and limited economic integration with few economic alternatives to livestock keeping. Trade and commerce in pastoralists' areas has been so adversely affected by violence; with the overall economic development being retarded. For instance, the cost of trekking livestock to markets increases because traders incur extra costs to avoid conflict areas. This is what happened during the Garre–Murulle conflict in the Mandera triangle in 2005. The trade routes became battlefields and the movement of people and livestock was hampered, with a devastating effect on livelihoods⁽²³⁶⁾. The cross-border livestock migration and livestock and livestock products trade through routes such as the Filtu/Dolo–Siftu/ Mandera route – even further to Wajir and Garissa where despite the long trekking time and extra costs, there were assurance for better returns were disrupted by conflict. The potential economic gains by the State agencies and local authorities from cess and other taxes were significantly affected. Moreover, the cost of rebuilding damaged infrastructure depletes resources that could otherwise be invested in opportune economic development activities such as the up-scaling of livestock marketing systems and infrastructure.

Conflicts have resulted in loss of livestock as the main livelihood for the affected pastoralist households. For instance, in some districts of Kenya assessed by Adan and Pkalya⁽²³⁷⁾, it was estimated that 459,905 herds of livestock valued at over 5 billion Kenya Shillings were stolen through raids between 1994 and 2004. And according to Halima Mohamed Ali (personal communication), any disruption by insecurity emanating from conflict, for the 100 cattle usually trekked on hoof to the intermediary outlets of Garissa (800 km from Mandera) or Moyale (470 km) for subsequent transportation by trucks to the final market in Nairobi, would lead to heavy losses. Forced migration following conflict causes massive losses owing to starvation of livestock. For instance, according to livestock production officers in the sampled districts namely

235MSSP (2004) Draft National Policy for the Sustainable Development of Arid and Semi arid Lands of Kenya - December 2004. Ministry of State for Special Programmes; Republic of Kenya.

236Hussain Mahmoud (2011) *Conflicts and Cattle Commerce on the Kenya/Ethiopia Borderlands*: ABORNE Conference Basel 2010 Programme Overview; Panel Composition and Abstracts.

237Adan, Mohamud and Ruto Pkalya (2005) *Closed to Progress: An Assessment of the Socio- Economic Impact of Conflict on Pastoral and Semi-Pastoral Economies in Kenya and Uganda*. Practical Action – Eastern Africa; May 2005.

Turkana, West Pokot, Marakwet and Samburu⁽²³⁸⁾, production loses due to conflict average 10-50 % of potential capacity. The same study has established that food production can take a significant reduction from conflict. When conflicts force farmers to flee their farms, large swathes of farmland are left bare, leading to a drop in production. There can be heavy losses from development projects that are abandoned or stalled due to conflict this including the destruction of agricultural land and looting of other assets; and the resultant insecurity situations. Potential investors may shy off from investing in conflict prone areas.

Political Factors

Pastoral conflict is now characterised by a multiple array of actors and influences from national and international sources; the result is a variety of outcomes. In Northern Kenya, like elsewhere in Africa, the word “pastoralist” is often used to indicate a broad ethnic origin, independently from the fact of how one actually makes a living. A Maasai wage labourer in Nairobi, a Turkana university student, or a Boran director of an NGO, may all define themselves as “pastoralists”. It is therefore necessary, when talking of pastoralists and conflict, to remember that some of the actors involved may not be herders at all, yet would still be considered, and would consider themselves, pastoralists⁽²³⁹⁾.

A useful distinction is between youth-driven and elder-driven conflict. Although young men are usually the fighters in both cases, the nature of the conflict and the chance of peace building may change greatly from one to the other. Elders have their own herd and a family. Their interest is in ensuring good relations in order to widen access to resources, to facilitate commercial activities and in general to promote security, although they may also start violent conflicts to gain access to resources or to political power; for example, the clashes in Wajir district in 1992-1995 were driven by the elders⁽²⁴⁰⁾. Married women feed the family and, in some cases, trade. It is in their interest to secure access to markets, to safeguard their children, to increase milk production. Young men are waiting to start their own homestead; they want to increase their prestige and respect within the community, attract girls and be able to afford marriage. Security offers them few immediate advantages. They are highly mobile. It is in their interest to shake up existing power relationships within the community and they may prefer to trade security for cattle, money or prestige. Among some groups (for example, Samburu, Gabbra, Boran) the distinction between the elders who sponsor the present warrior age-sets, and the other elders, constitutes a further differentiation of interests.

238Adan, Mohamud and Ruto Pkalya (2005) *Closed to Progress: An Assessment of the Socio- Economic Impact of Conflict on Pastoral and Semi-Pastoral Economies in Kenya and Uganda*. Practical Action – Eastern Africa; May 2005.

239Doran, M., A. Low, and R. Kemp (1979). Cattle as a Store of Wealth in Swaziland: Implications for Livestock Development and Overgrazing in East and Southern Africa. *American Journal of Agricultural Economics*. 61: 41-47.

240Ibrahim D. 1994. *Report on the ‘Peace and Development’ Workshop, Wajir, 19-22 December 1994*, Nomadic Primary Health Care Programme, Wajir.

Traditionally, all raids should first be approved by the elders, but early ethnographers stress that often young men decided in secret and took action quickly without informing the elders of their intentions⁽²⁴¹⁾. However, large scale daylight attacks typical of escalated conflict and all-out war required a degree of organization and mobilization that was only within the power of elders or war leaders. Control of the pastoral economy used to be a monopoly of the elder age-set (men and women in different ways and degrees): the elders own the livestock, control resources and dispose of marriages. The young are poor by definition, to the point that should a young man inherit a herd and family responsibilities, he would become an "elder" regardless of his age⁽²⁴²⁾. With respect to warfare, therefore, the notion of pastoralists should be disaggregated, to take account of the antagonistic interests between agesets. Age-sets are ritual associations of people that (a) cut across kin linkages, (b) are structured into cycles of initiation, regularly apportioned according a fixed number of years, and named with a traditional series of names, and (c) are associated with specific values and behaviours.

The *gada* system among the Oromo-Boran for example, has five sets per ritual generation, spaced eight years from one another, so that the sons of set 1 are initiated into set 6, ideally when the men of set 1 are in their forties. Each set is given a name out of a series of seven in cyclical succession⁽²⁴³⁾. Early ethnographers have seen little political relevance in the age systems, understanding generation and age-set organizations as institutions only marginally associated with warfare, and mainly with functions of social integration or, later, as ideological formations directed towards creating order and long term-social stability. In other words, age systems have been seen as a tool for ensuring social unity, cutting across kin and agnatic linkages. A recent collection of studies, however, focusing on the relations of power within age systems, takes an opposite view which offers important insights for the analysis of conflict⁽²⁴⁴⁾.

Age systems are regional and cross-ethnic phenomena, at the core of institutionalized "confrontational scenarios" between antagonistic social actors: seniors and juniors, men and women, territorial units within an ethnic group, and ethnic groups. In this light, raids may be seen as a form of competition for control over resources (and ultimately power) between different age-sets, before it becomes between different groups. In reciprocal raiding the warrior age-sets of group-A raid the elder age-sets of group-B, then the warrior age-sets of B raid the elder agesets of A. Peace meetings take place first of all between warriors and elders of the same

241Gulliver, P. H. (2003). *A Preliminary Survey of the Turkana. A Report Compiled for the Government of Kenya*. University of Cape Town: Communication from the School of African Studies, New Series No. 26.

242Baxter P.T.W. and Hogg R. (eds) 1990. *Property, Poverty and People: Changing Rights in Property and Problems of Pastoral Development*, University of Manchester, Department of Social Anthropology and International Development Centre, Manchester.

243Baxter, P. T. (1993) The new East African pastoralists. An overview, in J Markakis (ed), *Conflict and decline of pastoralism in East Africa*, The Hague: Institute for Social Studies, 235–246.

244Simons S. (eds.) 1998. *Conflict, Age & Power in North East Africa. Age Systems in Transition*, James Currey, Oxford.

group, when, in the face of “excessive” economic disruption, the elders persuade the warriors to be more moderate (²⁴⁵).

Conceptualizing pastoral conflict as conflict over resources between different age groups forces the understanding of it into the framework of the neoclassical economics paradigm of scarcity. A conceptualization of pastoral conflict as conflict over resources/power between age-sets puts the emphasis on distribution and therefore allows for essential insights into the political sphere. An approach to conflict from the analysis of power relations within age systems also throws a new light on the relationship between conflict and peacemaking. An escalation of young men’s warfare causes economic disruption which damages above all the elder age-set (at least in the short term). The peace making role of the elders, and sometimes of women, perhaps would be better understood, rather than as a nonpartisan intervention, as the affirmation of the elders’ interests against those of young men and a part of the antagonistic relationship between youth and age. Similarly, unrestrained conflict escalation is often understood as the elders’ inability to exercise their institutional role of conflict management (²⁴⁶). Perhaps some present conflict should be understood as an indication not of the weakness of the elders but of their new, powerful and unacceptably permanent (as far as the warriors are concerned) forms of resource control, for example through formalization of rights, connections with local and national government.

The notion that one party may perceive the other party’s behaviour as excessive may be applied to inter-age set relationships. Not only may the elders perceive as excessive the warrior’s hostile activities, but the young men also may perceive as excessive the elders’ control activities. In this case, external support to the elders’ authority for conflict resolution is likely to upset the power balance between antagonistic age sets, and fuel further conflict rather than working towards resolution. Finally, even where the age system is maintained, the internal structure of age-sets is undergoing a process of differentiation. Although linked in principle with biological ageing, the status of “elder” is first of all a social construction. In the past, it used to integrate age, economic control and political authority. This was not, however, a rigid condition, and the phenomenon of war leaders at the peak of Northern Kenya expansion, for example, represented a way to gain political authority independently from economic control and age (²⁴⁷).

Political and economic transformations in pastoral societies have further disaggregated the attributes of the status of “elder”. Political authority, economic control and age still characterize it, but now often independently from one another. Today for example the social role of elder is not any more a prerogative of age, but can be played by young men as well, if they are wealthy or enjoy political authority, for example as chiefs or councilors. In this way, the antagonism

245Baxter, P., and Hogg, R. (1990). *Property, Poverty and People: Changing Rights in Property and Problems of Pastoral Development*. Oxford: Blackwell Publishers.

246Keen D. 1997. A Rational Kind of Madness. *Oxford Development Studies* 25(1): 67-75.

247Lamprey, H., and Yusuf, H. (1981). Pastoralism and Desert Encroachment in Northern Kenya. *Ambio*, 10(2), 131-134.

between age and youth cuts across biological age, along the lines of the different component features of elder status, and becomes much more complex. The possible combinations of conflictual interests are thus hugely multiplied (²⁴⁸).

Arms sellers often supply weapons on credit. This practice may be seen as a form of investment, similar to the old practice of richer people “investing” a camel (for a young man with no camel to ride) in Saharan raids and caravans, and taking part of the profit from the operation as payment. Often weapon traders also have a role in marketing raided livestock. According to Goldsmith, the political transformation in Northern Kenya after 1991 generated a change of *shifita* banditry towards financed and well connected trade barons who recruit from retired army personnel and school-leavers - a new class of professional and sophisticated highwaymen (²⁴⁹). Commercial and political raids are increasingly organized around wage-labour. Some hired fighters may be trained people with experience in armed conflict in neighbouring countries, but many are youngsters with no military training, not necessarily herders but also urban unemployed, school leavers or occasional wage-labourers (²⁵⁰). There have been cases of groups of “warriors” hired by different ethnic groups to counter-raid for them (personal communication, IDS Workshop).

Politicians may facilitate conflict by not intervening (²⁵¹), or they may directly promote conflict by propaganda or even as a form of political competition before elections. Sometimes raids have been used to generate funds for an electoral campaign (personal communication, Nairobi Workshop). Goldsmith (²⁵²) reports cases of administratively appointed chiefs and elected member of local county councils inciting people to conflict. A politician may sometime enhance his reputation by initiating a raid. The instrumental use of raiding for politics is not a recent phenomenon. In his classic monograph on the northern Somali, Lewis (²⁵³) says that the Administration succeeded in lowering the rate of conflicts by fining local political authorities who in any way incited raiding. Chiefs and DCs may sometime be involved in raids as

248 Kurimoto E. 1994. *Civil War & Regional Conflicts: The Pari & their Neighbours in South-Eastern Sudan*.

249 Malombe, J. 1997. *Conflict in Urban Settlements in Kenya: Access to Land and Services in Unplanned Settlements*. A paper prepared for the USAID Conference on Conflict Resolution in the Great Horn of Africa, June 1997.

250 Amisi, B. K. (1997), *Conflict in the Rift Valley and Western Kenya. Towards an early warning indicator identification*, paper presented at the USAID conference on Conflict Resolution in the Great Horn of Africa, Kenya.

251 Fratkin, E. (2001). East African Pastoralism in Transition: Maasai, Boran, and Rendile Cases. *African Studies Review*, 44(3), 1-25.

252 Goldsmith P. 1997. *Cattle, Khat, and Guns: Trade, Conflict, and Security on northern Kenya's Highland-Lowland Interface. A Case Study*, A paper prepared for the USAID Conference on Conflict Resolution in the Great Horn of Africa, June 1997, draft.

253 Haagsma, B., and Hardeman, J. (1998). *Pastoral Development in East Africa: Facts and Findings*. Zeist Netherlands: I/C Consultants.

facilitators or promoters, and take a share in the division of the booty. During the 1992-94 clashes in Wajir, chiefs had a major role in funding and directing the conflict (²⁵⁴).

In Wajir the military used to get involved in every conflict, and often their harassment of the local population, including habitual rape, made those people sympathize with the bandits (Ibrahim and Jenner, 1996). External agencies may fuel conflicts by providing easily manipulable aid: (a) giving power and prestige to the warlords who are in a position to control aid; (b) providing an additional source of income to the disputants; (c) blindly altering or confirming, the existing balance of power between the disputants; (d) creating “advantageous” conditions for refugees and conflict-destitute people in relation to local standards. Project investments (for example in new water points) can jeopardize customary resource tenure systems and increase disputes and violence. External agencies also may slow down or jeopardize local processes of conflict management by overwhelming them with easily manipulated resources. Western agencies may hinder local processes of conflict management by maintaining an antagonistic approach towards Islamic organizations, looking for civil society groups to work with on conflict resolution but not recognizing or deliberately ignoring the fact that in Islamic areas the largest part of civil society is represented not by NGOs but by religious groups (²⁵⁵). On the other hand, external agencies supporting or working together with civil society organizations may mediate between the disputants or support customary mediators, provide a forum for discussion, facilitate communication and negotiation.

Large numbers of refugees from neighbouring countries, particularly in drought or conflicts, can contribute to increased insecurity. In Wajir, refugees were one of the causes of the violence in 1992-95, although not the main one (²⁵⁶). Furthermore, refugee repatriation operations can be used by non-refugees from the host country or from a neighbouring country as a channel for clandestine migration and to gain access to new resources with the help of the international agencies. Bassi (²⁵⁷) argues that during the large UNHCR operation for the repatriation of Ethiopian refugees from Kenya in 1992-1993, as the UNHCR procedure for registration in refugee camps was based on an individual’s own statement of identity, a significant number of Gabbra and Garre pastoralists from Kenya and Northern Kenya were able to join the Ethiopian refugee-returnee flow by exploiting kin ties and linguistic affinity with Oromo groups. The status of Oromo refugee ensured them rights to repatriation into Boran province and long term

254Ibrahim D. and Jenner J. 1996. Wajir Community Based Conflict Management, Paper presented to the USAID Conference on *Conflict Resolution in the Great Horn of Africa*, June 1997.

255Goldsmith P. 1997. Cattle, Khat, and Guns: Trade, Conflict, and Security on northern Kenya's Highland-Lowland Interface. A Case Study, A paper prepared for the USAID Conference on *Conflict Resolution in the Great Horn of Africa*, June 1997, draft.

256WPDC 1997?a. *Questionnaire for Women, and responses. On conflicts in 1992-1995 in Wajir*, Wajir Peace and Development Committee.

257Bassi M. 1997. Returnees in Moyale District, Southern Ethiopia: New Means for an Old Inter- Ethnic Game. In: Hogg R. (ed.) *Pastoralists, Ethnicity and the State in Ethiopia*, Haan, London.

assistance by the UN and other international agencies, which could be used to gain access to resources traditionally controlled by the Boran.

Conflict in pastoral areas is often associated with their marginal location. Pastoralists are seen as not only geographically marginal, but also as politically and culturally marginal. Their presumed distance from modern institutions and from the controlling action of the state is often accepted as a self-evident explanation for widespread violence. However, the equation less state = more violence, which polarizes violent conflict and the state, fails to recognize the latter as a key actor in situations of conflict. On the contrary, evidence from the literature suggests that any analysis of the actors in a situation of conflict should include the state (²⁵⁸).

The Historical Impact of the State on Ethnic Identity

Interaction with the state plays an important role in the creation of ethnic/tribal identities. Anthropological analysis of the historical processes of construction and reconstruction of ethnic identities in Africa shows that identity formation in the past was characterized by a high degree of dynamism and fluidity (²⁵⁹). Interaction with the colonial administration first, and with independent states later, has modified that situation, freezing existing ethnic identities as well as creating new fixed ones. Although largely a creation of the colonial administration, tribal labels gradually became a social reality as the various groups found it convenient or necessary to be recognized as an administrative entity when dealing with the state. Within the context of the fluid and dynamic construction and reconstruction of ethnic identity, tribal labels worked as new poles of aggregation and were readily exploited by people as a way to adapt to a drastically altered socio-economic and political environment (²⁶⁰). With reference to Somali, Kapteijns (²⁶¹) shows how even clan communal identity is a product of Somali late-colonial and post-independence interaction with each other and with the state in the context of patriarchy and the capitalist world economy.

In parts of north Kenya the state is technically present (for example through the army and the chief system), but is ineffective (for example the soldiers have no ammunition or fuel for their vehicles). This inaction of the state is dangerous in various ways. From a local point of view the state is never innocuous or absent. The inaction of the state is more likely to be perceived as intentional, deliberate discrimination rather than objective weakness. The state's inaction therefore can contribute directly to escalation of conflict. Furthermore, the presence of an inactive state destroys local initiatives. As the state monopolizes the role of arbiter and administrator of justice, in the case of violent conflict its functionaries fill the space that may be

258Sobania, N. (1979). Background History of the Mt. Kulal Region of Kenya. UNESCO, Nairobi.

259Amselle J.L. 1990. *Logiques métisse: anthropologie d'identité en Afrique et ailleurs*, Payot, Paris.

260Allen T. 1994. Ethnicity & Tribalism on the Sudan-Uganda Border. In: Fukui K. and Markakis J. (eds.) *Ethnicity and Conflict in the Horn of Africa*, James Currey, London.

261Kapteijns L. 1993. *Women and the Crisis of Communal Identity: the Cultural Construction of gender in Somali History*, African Studies Centre Working Papers, Boston University, Boston.

available for peaceful management of the situation (²⁶²). When their promises are not fulfilled, or when they appear to support one party to the disadvantage of the other, then it is usually too late to seek alternative forms of mediation, and violence is likely to escalate. The authority of the elders, who could provide an alternative forum for justice, is usually associated with the authority of the administration, although not entirely dependent on it. In this way, when the administration loses face with young men impatient to obtain justice, the authority of the elders is also jeopardized and is no longer perceived as a viable alternative (²⁶³).

During the clashes between Pokot and Marakwet in 1997 for example, on one occasion a group of Marakwet raided two Pokot herders of more than three hundred cattle. Pokot elders interested Marakwet elders in the return of the stolen animals while Pokot young men were mobilized to look for the animals. At that point the Provincial Administration took the situation into its own hands, promising to intervene and to help find the cattle. When only 12 animals were returned, it proved impossible to further restrain the youth and the situation went out of control (²⁶⁴). Groups of raiders often treat state organizations with contempt, or co-opt them. Quite often, the security forces are informed about raids by the raiders themselves, and so played against the target group to prevent a counter raid. Violence is in theory a monopoly of the state, so any kind of violence is by definition a challenge to the state's authority. Open violence, even when it is not directed against the state itself, is always an affirmation of political autonomy from the government. In this light, violent and sometimes indiscriminate interventions by the security forces appear very much as primarily directed towards re-establishing the state's unique right to violence, and only secondarily towards conflict resolution.

One important turning point in peace building in Wajir was achieved when the Army Commander committed himself to stop the looting, rape and other abuses by army personnel when they were out on missions (²⁶⁵). On the other hand, direct conflict-resolution interventions of the state in the form of military operations for disarmament, like those carried out with heavy weaponry (including fighting helicopters) against Pokot, Turkana and Karamojong in the mid-1980s in Kenya (²⁶⁶), are likely to change the balance of power between different groups, with a consequent rise in violence. Finally, any analysis of the role of the state in situations of conflict should acknowledge the existence of heterogeneous and often conflictual interests within the state structure itself. Different elements of the state, such as DCs, MPs, chiefs or security committees, may have very different agendas, and local people may have a certain degree of

262Lamphear J. 1994. The evolution of Ateker 'new model' armies: Jie and Turkana. In: Markakis J. (ed) *Ethnicity and Conflict in the Horn of Africa*, Macmillian, London.

263Kurimoto E. 1994. Civil War & Regional Conflicts: The Pari & their Neighbours in South-Eastern Sudan.

264Mallick, B. (2011). Migration as an Adaptation Strategy and Its Consequences on Coastal Society: Experience from Bangladesh. Working Papers No. 96, Center on Migration, Citizenship and Development.

265Ibrahim D. 1994. *Report on the 'Peace and Development' Workshop, Wajir, 19-22 December 1994*, Nomadic Primary Health Care Programme, Wajir.

266Dietz T. 1993. The State, the Market, and the Decline of Pastoralism: Challenging some Myths, with Evidence from Western Pokot in Kenya/Uganda. In: Markakis J. (ed.) *Conflict and the Decline in Pastoralism in the Horn of Africa*, Macmillian, London.

awareness of such differences. The notion of state should therefore be disaggregated into its various components.

Although the causal link between the use of modern weapons and the apparent increase in violence is not clear, as discussed in the following chapter, there is little doubt that the availability of automatic rifles lowers both the strength and training required in fighting and therefore extends the range of potential fighters to include very young boys and, at least in principle, women and girls. Increasingly, young boys are directly involved in fighting, at least in a defensive role. The “gestation period” of future fighting manpower (as short as 8-9 years if the availability of modern weapons is high) is included by Belshaw⁽²⁶⁷⁾ among the variables which can affect cumulative differentiation in power between pastoral groups. There are cases in which, the warriors being engaged elsewhere, women used automatic rifles to drive back a party of raiders (personal communication about Turkana district, IDS Workshop). Direct involvement of women as fighters however appears to be a relatively rare phenomenon. According to Belshaw⁽²⁶⁸⁾, this is because within the traditional gender division of labour, women’s productive and reproductive capacity subject to a higher degree of scarcity in comparison to fighting power, and therefore is protected from higher-risk occupations.

In many pastoral societies, women sing war songs. These songs normally taunt the men and incite them towards more fighting. As such songs reach elders, youth, or the business elite, they can make or break reputations and are an important source of motivation of conflict⁽²⁶⁹⁾. Although the social position of women in pastoral societies tends to give them only a minor part in formal mediation systems, women may be important in informal contexts. Among Somali for example, a woman’s ties to her lineage of birth are not fully severed with marriage⁽²⁷⁰⁾. As women marry out of their clan, they are key figures in inter-clan linkages and can provide crucial channels for communication between rival clans. This is true also for women who joined their husbands’ social group through abduction. Thus abduction of girls during the raids may have the double effect of calling for retaliation and once the girls are married providing important linkages between enemy groups who would not normally inter-marry⁽²⁷¹⁾.

267 Belshaw 1999. *The Kalashnikov Economies of the Eastern Sahes: Cumulative or Cyclical Differentiation between Nomadic Pastoralists?* Paper presented at the first Workshop of the Study Group on Conflict and Security of the Development Studies Association, South Bank University, March 1999.

268 Belshaw 1999. *The Kalashnikov Economies of the Eastern Sahes: Cumulative or Cyclical Differentiation between Nomadic Pastoralists?* Paper presented at the first Workshop of the Study Group on Conflict and Security of the Development Studies Association, South Bank University, March 1999.

269 Ibrahim D. 1994. *Report on the ‘Peace and Development’ Workshop, Wajir, 19-22 December 1994*, Nomadic Primary Health Care Programme, Wajir.

270 Lewis I.M. 1961. *A Pastoral Democracy. A Study of Pastoralism and Politics among the Northern Somali of the Horn of Africa*, Oxford University Press, London, New York, Toronto.

271 Mkangi K. 1997. *Indigenous Social Mechanisms of Conflict Resolution in Kenya: A Contextualized Paradigm for Examining Conflict in Africa*, University of Nairobi.

Actors and Outcomes

The same raid can be used by: (i) Fighters; herders in need of restocking or money to feed the family, as a one off chance; young men looking for prestige or revenge; unemployed/school leavers from town, as a one off chance for earning money; mercenaries and outlaws, as a full time way of making a living. (ii) Mobilizers/organizers; weapon traders, as a way to maintain demand; chiefs and elders, as a way to assure themselves or their network of specific resources (water points, grazing land, political representation); wealthy cattle traders, who may sponsor the raid and market the looted cattle; local politicians, to ensure a majority by forcing the opponents to flee from the constituency before elections; national politicians to maintain power through a strategy of tension. (iii) Facilitators; administrators and security forces, who may have a personal interest in not intervening or in biased interventions (for example, due to kin/clan/ethnic ties); security forces, who may take advantage of their missions in rural areas to rob, rape and in general to harass the population; national/international business, to prevent economic stability and political organization in certain areas of strategic interest (for example, potential oil or ore deposits) of course, these roles may overlap. Individual raiders may engage in illegal trade with looted guns. Cattle traders may also be elders, politicians or administrators, and so may weapon dealers. Security forces may trade in weapons. Politicians may have interests in national/international business. Any of these may have a herd of their own, which may be built up by raiding, or be reduced by being raided by others⁽²⁷²⁾.

Ethnic Conflict and the Issue of Multi-Party Representation

In the past ethnic conflicts all over Kenya, including those in the northern districts, have provided the government with a strong argument against pluralism and multi-party representation. Writing on the links between “tribal warfare” and political conflict, Fratkin⁽²⁷³⁾ argues that a government policy of low-response or non-intervention in contexts of increasing ethnic fighting is an indicator of vested interests and should be added to the list of the causes of conflict. Similarly, Walker⁽²⁷⁴⁾ and Amisi⁽²⁷⁵⁾ argue that the clashes in the Rift Valley and Western Kenya were part of a wider political strategy of the KANU government to frustrate the efforts of the democratization movement and to prove to both Kenyans and Western donors that the implementation of democratic reforms, such as multi-party representation, in a multi-ethnic society like Kenya's would result in civil war.

Ethnic conflicts and high levels of insecurity allow the government to maintain extraordinary powers in its relations with the population. All the Northeast Province in Kenya remained under

272Gulliver P.H. 1991. *A Preliminary Survey of the Turkana. A Report compiled for the Government of Kenya*. Communications from the School of African Studies, New Series No. 26, University of CapeTown, Cape Town.

273Fratkin E. 1994a. Resurgence of Inter-Pastoralist Warfare in Kenya. Paper presented to Panel *Resurgence of Ethnic Conflict and Tribalism in Africa*, American Anthropological Association Annual Meetings, Atlanta GA, Dec. 1, 1994.

274Walker R. 1995. *Kenya: Recent History*, Africa: South of the Sahara 1996, Europa Publications, London.

275Amisi, B. K. (1997), *Conflict in the Rift Valley and Western Kenya. Towards an early warning indicator identification*, paper presented at the USAID conference on Conflict Resolution in the GreatHorn of Africa, Kenya.

a State of Emergency from independence until 1992. This gave the administration the power to kill on sight on the grounds of suspicion (²⁷⁶). Conflicts seem to increase in frequency and intensity before elections. Within the context of clan or ethnic based politics, and a mobile population, attacks can be timed so that the voters of the opposing ethnic group flee the constituency before the election, leaving only the supporters to vote.

The imposition of majority onto pastoralists' cultural tradition of consensus decision-making, particularly within a context of clan based politics, is a primary cause of political disputes, leading to increased conflict between ethnic groups or clans (²⁷⁷). To a large extent, consensus is also the criterion for customary patterns of justice administration and conflict resolution, which are focused on reconciling the disputants and maintaining peace, rather than on the punishment of the wrongdoer. A "give-a-little, take-a-little" principle is preferred within customary institutions to "winner-takes-all" judgements (²⁷⁸). In councils like the Njuri Nchekein Nyambene society, all the representatives of disputing parties are allowed to speak, earlier precedents and details relevant to the dispute are discussed by the council and the process of deliberation is repeated if consensus is not reached. The council rarely acts as a ruling third party. Rather, it usually plays a facilitating role, cooling the parties in conflict and manipulating the length of the procedure until the disputants settle affairs among themselves (²⁷⁹).

State justice, supposedly rapid and based on precise evidence bearing on the case, has no room for the long proceedings required to reach consensus. Furthermore, a third party ruling within a context where the state enjoys little trust, always gives rise to the suspicion that the decision has been manipulated. In any case, the legitimacy and authority of customary conflict mediation is not based on independence from the opposite parties and neutrality, but on affinity and inside knowledge of the context (²⁸⁰).

Territorial Political Representation

The parliamentary democracy system of territorial and residence-based representation clashes with the reality of a largely mobile electorate. Often, for residential reasons, some people do not have the right to vote or to access political and administrative appointments within the constituency where they have their major interests. This creates situations in which those who are involved in disputes are not represented by those who are officially in a position to prevent,

276 Ibrahim D. and Jenner J. 1996. Wajir Community Based Conflict Management, Paper presented to the USAID Conference on *Conflict Resolution in the Great Horn of Africa*, June 1997.

277 Ibrahim D. 1994. *Report on the 'Peace and Development' Workshop, Wajir, 19-22 December 1994*, Nomadic Primary Health Care Programme, Wajir.

278 Rugege S. 1995. Conflict resolution in Africa customary law. *Africa Notes* October 1995.

279 Goldsmith P. 1997. Cattle, Khat, and Guns: Trade, Conflict, and Security on northern Kenya's Highland-Lowland Interface. A Case Study, A paper prepared for the USAID Conference on *Conflict Resolution in the Great Horn of Africa*, June 1997, draft.

280 Lederach J.P. 1989. Conflict transformation: the case for peace advocacy. In: Wiebe M. (ed.) *NGOs and Peacemaking: A Prospect for the Horn of Africa Project*, Institute of Peace and Conflict Studies, Conrad Grebel College, Ontario, Canada.

mediate and resolve conflicts⁽²⁸¹⁾. Within such a context, the model of democratic representation is bound to give a large political advantage to permanent settlers and to further marginalise pastoralists.

To a certain extent, all raids are “commercial”, not just those usually referred to by the term, in which the promoters and paymasters are businessmen, officers or administrators. The so called “commercial raids”, do not represent a separate category in which “external” interests interfere with pastoral economy. They are probably better understood as an aspect of the wider integration of pastoralists within a market economy. It is usually overlooked that the early 1980s not only saw an upswing in the marketing of light weapons, but was also a turning point in Kenyan development policy for pastoral districts. The adoption of a neoliberal perspective in which the introduction of a market economy had first priority, was seen as the instrument and not, as before, the objective of development⁽²⁸²⁾. Perhaps the transformation of conflict should be analyzed in light of the ongoing, complex and lengthy integration of pastoralists within a market economy, which is a process of combining what in Polanyi’s terminology (1957) is an economy instituted through reciprocity with one instituted through the market.

Integration within a market economy is affecting pastoralists’ warfare practices via three main avenues: i. Labour market (hired fighters). The introduction and diffusion of wage-labour has provided an institutional framework which enables richer people to hire fighters, not only mercenary soldiers from outside the pastoral economy, but “warriors” as well. That this phenomenon should be seen as directly linked to structural changes within pastoral economy, and not just as a consequence of its exposure to the market, is supported by cases such as that of the Samburu, who on certain occasions have hired groups of (more feared) Pokot warriors to fight for them in clan raids (personal communication, IDS Workshop). ii. Weapons market-guns give status. As a man says in a questionnaire to combatants distributed in Wajir ‘one with a gun is not the same as one with a spear’⁽²⁸³⁾. Although modern weapons may flatter young men with the new power they give, ultimately their effect is to alienate “warriors” from “warriorhood”, leaving unskilled fighting man-power on one side and technological fighting power on the other, both marketable. iii. Livestock market (sale of raided livestock). Commercialization of cattle enables people who are not herders to profit from livestock raiding. It also enables the herders themselves to raid independently from the actual availability of land or labour for livestock management and excludes reciprocity as marketed cattle cannot be raided back. As in livestock

281 Ocan C.E. 1994. Pastoral Resources and Conflicts in North-Eastern Uganda: the Karimojong case. *Nomadic Peoples* 34-45: 123-135.

282 Evangelou P. 1984. *Livestock Development in Kenya's Maasailand: Pastoralists' Transition to a Market Economy*, Westview Press, Boulder CO and London.

283 WPDC 1997?b. *Questionnaire for Combatants, and responses. On conflicts in 1992-1995 in Wajir*, Wajir Peace and Development Committee.

both relations of property/exchange and social boundaries overlap, changes in the patterns of ownership affect inter and intra-ethnic relations as well as values associated with sociality (²⁸⁴).

Within an economy based on reciprocity, livestock and military strength are independent variables. Indeed, one of the reasons for raiding used to be the need of restocking. Thus raiding was by and large a cyclical process in which groups in a restocking phase raided enemies who happened to be momentarily better off (²⁸⁵). The progressive introduction of the market as the integrative process of the economy, and the new links between the commercialization of cattle, weapons and labour created within this process, enable the transformation of livestock capital into military strength, which can then be used to further increase livestock capital in a cumulative process (²⁸⁶). Conversely, the ability to raid effectively increases long term differences between groups in marketing strategies. In West Pokot, particularly with de-regulation after 1984, marketing of animals was liberalized and taken out of the hands of local councils, which used to control the organization of cattle and goat auctions. Shortly after, control of local markets was taken over by Somali traders and powerful businessmen (²⁸⁷).

International Influences

Political disorders in neighbouring countries may increase the availability of automatic weapons in a region. Sudden and localized access to automatic weapons may change the balance of power across borders or between different groups within Kenya, and usually results in an escalation of raids. The effects of civil war and widespread fighting in neighbouring countries, however, go well beyond the direct consequences of the weapons trade. The wars in the Horn of Africa have created thousands of refugees and displaced people, whose massive movements affect patterns of resource management and alter relationships between groups. Men from Kenya who enroll as fighters in conflicts across the border, receive military training and weapons that they usually keep if they survive and return. Meanwhile, deserters and ex-combatants drift into Kenya from the areas of fighting in neighbouring countries, swelling the ranks of bandits, or making a living as mercenaries or cheap fighters in commercial raids. Schlee (²⁸⁸) reports that during the Ogaden war it was common that young men pretended to want to join the guerrillas but, once armed and trained in Northern Kenya, returned to Kenya and gave themselves to banditry.

284Baxter P.T.W. 1979. Boran Age-Sets and Warfare. In: Fukui K. and Turton D. (eds) *Warfare among East African Herders*, National Museum of Ethnology, Osaka.

285Hendrickson D., Mearns R., Armon J. 1996. Livestock Raiding among the Pastoral Turkana of Kenya. Redistribution, Predation and the Links to Famine. *IDS Bulletin* 27(3):17-30.

286Belshaw 1999. *The Kalashnikov Economies of the Eastern Sahes: Cumulative or Cyclical Differentiation between Nomadic Pastoralists?* Paper presented at the first Workshop of the Study Group on Conflict and Security of the Development Studies Association, South Bank University, March 1999.

287Dietz T. 1993. The State, the Market, and the Decline of Pastoralism: Challenging some Myths, with Evidence from Western Pokot in Kenya/Uganda. In: Markakis J. (ed.) *Conflict and the Decline in Pastoralism in the Horn of Africa*, Macmillian, London.

288Schlee G. 1989. *Identities on the Move: clanship and pastoralism in northern Kenya*, Manchester University Press, Manchester.

According to Goldsmith (²⁸⁹), Somali internal conflicts in the 1970s and 1980s had a direct effect on the rate of banditry in northern Kenya, including Tana River and Lamu. Cross-border political movements such as Oromo nationalism and the growing pan-Oromo identity are changing the way some pastoral societies represent themselves and their relationship with their neighbours and with the Kenyan state. Until a few years ago the term “Oromo” was unknown to ordinary Boran in Kenya. Today, on the contrary, Boran by and large perceive themselves as part of a pan-Oromo identity.

On the other hand, the *gada* generation-set system, ‘by no means an Oromo invention but distributed in independent forms throughout the cultures of Lowland Eastern Cushitic speakers’, has been constructed within pan-Oromo ideology as the mark of authentic Oromo identity. Since Oromo nationalism has taken up *gada* symbolism, the Kenyan Boran, amongst whom the *gada* system is still in use, are seen as a stronghold of authentic Oromo values (²⁹⁰). To the Kenyan Boran such an evolution of their ethnic identity means, in practice, favourable new channels to livestock markets in Ethiopia and the weapons trade a long-standing difficulty in a central district like Isiolo as well as an increasing involvement in the political activities of the Oromo Liberation Front (OLF). Kenyan Boran, who are loosing out in Kenya, are becoming involved in south and west Ethiopia. In a geo-political context in which the state has collapsed in Somalia and Eritrea is using the OLF to destabilise southern Ethiopia, some north Kenyan pastoral conflicts should rather be seen as part of an Ethiopian proxy conflict. Through the use of Boran traditional symbolism as “mythomoteurs” to mobilize and legitimize political action, Oromo nationalism generates a peculiar merging between local inter-clan or inter-ethnic conflicts in northeastern Kenyan districts (for example between Boran and Somali or Boran and Garre), a confrontation with the Ethiopian state and competition for state power.

Sometimes it is the government itself that provides training and arms, as in the case of the creation of armed militias, like the Turkana Home Guard or the militia in Karamoja, which employs warriors for stock theft recovery. Aken (²⁹¹) points out that when the Sudanese government armed the Baggara to prosecute the civil war, they immediately used the new advantage to settle local conflicts over land use. Another way disorders in other countries may affect conflict patterns in Northern Kenya is through their impact on Kenyan livestock markets and, indirectly, on the levels of food security in bordering areas (²⁹²).

289Schlee G. 1989. *Identities on the Move: clanship and pastoralism in northern Kenya*, Manchester University Press, Manchester.

290Baxter P.T.W. and Hogg R. (eds) 1990. *Property, Poverty and People: Changing Rights in Property and Problems of Pastoral Development*, University of Manchester, Department of SocialAnthropology and International Development Centre, Manchester.

291Aken N. 1991. Violence Fuelled by the State. In: Bennett O. (ed.) *Greenwar: Environment and Conflict*, The Panos Institute, London.

292Little P.D. 1996. *Cross-Border Cattle Trade and Food Security in the Kenya/Somalia Borderlands*, University of Kentucky.

Outcomes of Conflict

The metaphors often used to describe conflict interruption, break down, disease, failure, scission, collapse are part of a representation of conflict as irrational, the effects of which are negative by definition. This perspective has recently been criticized by some analysts arguing, from a political economic point of view, that 'war is not just the breakdown of society: it is the re-ordering of society in particular ways' (²⁹³). Not all the members of a community or region are victims: there are also many individuals who get real material, political or psychological gains. In order to make visible this dimension of conflict, research on conflict should dismiss the classical bias about the irrationality and destructiveness of violence and start to ask questions such as 'What is the use of violence? What functions does it assure? In what strategies is it integrated?'

The effects of violence are much wider than the specific episodes of violence. Strategies of "exemplary violence" (²⁹⁴) are based on this power of violence to influence people's behaviour well beyond the immediate victims. Chaos and insecurity open new opportunities and enable new, otherwise impossible, access to resources and power. Indeed, insecurity itself may be understood as an additional resource which, as with any other resource, some individuals are in a better position than others to exploit. Keen (²⁹⁵) points out that a political economy perspective enables an understanding of conflict beyond the rigid opposition between winning and losing, throwing light also on those increasingly frequent situations where conflict appears to be a self-perpetuating process in which each party's aim is to enjoy the contextual benefits (money, power, impunity), rather than to win over the other parties.

Although sharing some of the premises of the "political economy of warfare" school, Cliffe and Luckham (²⁹⁶) in a recent article warn against the risks of applying functionalist explanations to such multidimensional phenomena as complex political emergencies (CPE). Particularly, they question the effectiveness of the analysis of beneficiary groups for understanding a trajectory in CPE and framing adequate interventions. Instead, they suggest an approach which integrates into the political economy of war approach the recognition of the structurally unpredictable dimension of war as a deliberate instrument to create chaos.

Political Outcomes

At a national level, insecurity and clashes are used as an argument against multi-party democracy and pluralism (²⁹⁷). At a local level, victims of violence become easy prey for political

293Keen D. 1997. A Rational Kind of Madness. *Oxford Development Studies* 25(1): 67-75.

294de Haan, C. (1994). An Overview of the World Bank's Involvement in Pastoral Development. Pastoral Development Network, # 31b. London: Overseas Development Institute.

295Keen D. 1997. A Rational Kind of Madness. *Oxford Development Studies* 25(1): 67-75.

296Cliffe L. and Luckham R. 1999. Complex political emergencies and the state: failure and the fate of the state. *Third World Quarterly* 20(1): 27-50.

297Muticon 1997. *Conflict Resolution Programme Framework. Report prepared for USAID/Kenya*, Muticon, Nairobi.

manipulation. Conflict fuels “ethnic democracy”, with political representation constructed along ethnic lines and political parties used as flags for ethnic sentiments and interests. The increased lack of trust in central government, generated within the context of injustice and violence, makes manipulation by local powers easy (²⁹⁸). Writing about contemporary India, Chhachhi (²⁹⁹) argues that ethnic conflict and regular outbreaks of violence, as well as of re-enforcing ethnic feelings, increasingly force ethnic identities upon individuals of various communities as a matter of fact, independently from their real feelings or choices. Within this theoretical approach, Lidwien Kapteijns points out that the communal identity prevalent in contemporary Northern Kenya, that of clan, has become a compelling reality for all Somali people, for it is one in whose name people have killed and have been killed. Even individuals and groups who have spent their lives resisting it, have found this identity forced upon them.

Protracted conflicts and insecurity in pastoral areas contributes to a widening of the gap between pastoral groups and the rest of the country. Economically, it prevents investments and hinders development programmes. Politically, it contributes, through media representation, to public images of pastoralists as backward, irrational and violent (³⁰⁰).

CONCLUSIONS

Summary

The literature on environmentally induced conflict has produced contested empirical and theoretical conclusions. Its core assumption that the environmental quantity and quality of a country or region can be causally linked to the presence or absence of conflict remains questionable. The concept of environmentally induced conflict has proved elusive. This elusiveness largely results from preconceived causalities, academic philosophies that combine eco-centric and anthropocentric conceptions, and the failure to provide an explicit explanation of agency in human-nature interactions. In addition, neo-Malthusian narratives with a predominant focus on scarcity disclose an overly simplistic conception of the multi-causality and complexity of violent conflict and of existing coping strategies. Lastly different types and intensities of violent conflict are intermingled and aggregated with disregard for regional specificities or qualitative differences in their manifestation.

After more than a decade of research and controversy, the literature on environmentally induced conflict remains an answer in the quest for its underlying question. The discourse on the

298 Nyukuri B.K. 1997. The Impact of Past and Potential Ethnic Conflicts on Kenyan's Stability and Development. A paper prepared for the USAID Conference on *Conflict Resolution in the Great Horn of Africa*, June 1997.

299 Chhachhi A. 1991. Forced Identities: The State, Communalism, Fundamentalism and Women in India. In: Kandiyoti D. (ed.) *Women, Islam and the State*, Philadelphia.

300 Belshaw 1999. *The Kalashnikov Economies of the Eastern Sahel: Cumulative or Cyclical Differentiation between Nomadic Pastoralists?* Paper presented at the first Workshop of the Study Group on Conflict and Security of the Development Studies Association, South Bank University, March 1999.

ecological sources of violence replicates “environmental orthodoxies” rather than analysing the heterogeneous trends within ecosystems and the multitude of existing natural resource management practices. Its one-sided fixation on causality and attempts to produce causal chains between a specific state of the environment (preferably a degraded, depleted, and overpopulated one) with a specific type of inter-group relationship (violence, warfare) have proved empirically controversial and theoretically unsound. To this day, the concept of environmentally caused conflicts represents a global paradigm in search of a local reality. It hinders rather than improves our understanding of the relations between ecology, politics, and violence.

Key Findings

The major findings from literature and field studies lead to the following conclusions:

Environmentally induced conflict is hampering development initiatives in Northern Kenya area. This implies an urgent need for restoration and sustainability of a peaceful environment among the target communities as one of the priorities by the Kenyan government partners and other stakeholders. Political, social and economic factors are closely linked to the key factors that have influenced environmentally induced conflict in Northern Kenya. Thus the key aspects of drought and conflict need to be recognized as important ingredients of pastoral development policies aimed at producing the anticipated target pastoralists’ resilience to recurrent droughts and conflicts in Northern Kenya.

The increasing scarcity of resources (pasture and water) and the pastoralist communities’ inability to apply most of their traditional rangeland management practices have resulted in increasing pressure on rangelands, loss of indigenous practices and weakening of customary law. The increase in the frequency and intensity of violence between pastoralists and farmers in semi-arid and arid areas of the region is also attributed to this factor. And the situation is worsening due to effects of climate change and global warming which have resulted in the more frequent, prolonged and widespread droughts. There is also exacerbation by interventions supporting agricultural production systems in the rangelands, sedentarization of nomadic populations /pastoralist fall-outs, and the breakdown of customary /traditional governance systems. The apparent decline in the functioning and effectiveness of the traditional conflict resolution and peace building institutions over the decades has resulted in the pastoralist communities’ retention of the culture-related /rooted and emerging negative attitudes towards others. The now widespread animosity, conflict and retaliatory attacks and counter attacks are attributed to the failure for the clans/ethnic groups to resolve conflicts amicably, although this may also be attributed to reduced power of the local elders for resolving conflicts by the current administrative and governance systems. In this regard, the starting point should be examining how the traditional (customary) conflict management and civil governance systems have previously managed conflicts arising from droughts and other sources and integrate these traditional good practices with new governance institutions.

In consideration for the magnitude of migrations involving people and animals, and the possibility of conflicts over pasture and water, timely surveillance and information dissemination on vulnerable groups is deemed an essential element for inclusion as part of a devolved districts and grassroots conflict and drought early warning and response mechanism. Some of the conflict resolution strategies implemented by the State/government agencies and other stakeholders are deemed to contradict rather than complement community based approaches. In essence, the incorporation of participatory and a bottom up approach in the establishment of location and district peace committees (comprising the various clans and gender) in the Northern Kenya region as an effective strategy for solving of disputes over resources and other community differences, is a better option. Local NGOs including those involved in women and youth (this in noting their potential role and as crucial entry point for peace building initiatives), and those focused on key development areas such as livestock marketing and promotion of livestock production as business; are potential partners in enhancing local-level dialogue, peace building and conflict management. It is also apparent that they are ideal as entry point for revitalization and strengthening of community-based conflict early warning systems, and in peace building among conflicting groups.

RECOMMENDATIONS

The current situation depicted in frequent changes in the local administration, governance and land use/tenure systems and operational frameworks is reflected on the indication that the now hardly functional traditional institutions alone may not be fully effective in managing conflicts; hence external intervention is indispensable. Nevertheless, there is still need for devolving conflict management and drought early warning systems to zonal levels. This will facilitate rapid and timely response in the event of tensions emanating from emerging competition for resources during droughts that may eventually culminate in open conflicts.

Alternative or diversified livelihoods can help the pastoralist fall-outs and other destitute and vulnerable pastoralist groups to reduce poverty; cope with the adverse effects of conflicts, and to alleviate their potential engagement in instigating conflict. There is still urgent need for the Kenyan government to spearhead and facilitate physical structure development, establishment of service provision facilities and to carry out capacity building for the target communities in the areas Northern Kenya. This is in the context of linking of conflict and development. However, the project activities should be designed and targeted in a participatory and transparent manner in order to alleviate situations whereby the entailed assistance in itself is deemed to exacerbate or cause conflict among the diverse beneficiary clan/ethnic groups. This should be put into effect through the involvement of target communities, partners and other stakeholders. There is scope for using the basic education sector as entry point for awareness raising, sensitization and cultural attitudinal change on conflict issues; and for promoting peace building.

In order to improve the capacity of the traditional institutions to better manage resource use patterns and to resolve conflicts, capacity building for the community institutions and partners

should incorporate the strategy for blending the traditional and formal resource management, conflict resolution and disaster early warning institutions. This may include support for local environmental management committees and community-based drought and conflict early warning monitors that are linked to the government. As follow-up to the above, there should be advocacy among stakeholders to support the establishment liaison with the Northern Kenya administration in the development of conflict early warning and response systems at the grassroots/village level to enable the design of drought and conflict management systems (incorporating traditional knowledge, skills and practices).

The government should invest in the up-scaling of facilitation for peace building consultative forums, and in continuous research to look into incidences of pastoral conflicts with a view to informing policy responses that attend to the causes of environmentally induced conflict. In order to alleviate conflicts emanating from group or individually confined interests on structures or service provision facilities established on communal land or on borderline areas, there should be consultation with the potential beneficiary communities and other stakeholders. Ideally, the planned structures/facilities should be sited to accommodate and cover wider territories as approved in a participatory manner and through consensus. The activity identification, planning, implementation; monitoring and evaluation processes should also be participatory in order to alleviate conflict.

There should be capacity building for women and the youth through support for income generating activities in order to reduce poverty levels, and increase their roles in environmental conflict resolution, management and prevention. The Kenya government and partners should facilitate forums for sensitizing and educating the young generation on the importance of traditional and conventional conflict resolution. In addition, the older generation should be sensitized on the need for gradual changing of attitude towards acknowledgement for the importance of environmentally induced conflict resolution mechanisms, and their potential impact on development initiatives. The existing peace training programmes on the basis of T.O.T as an outreach approach to training the wider community should be strengthened and up-scaled. This will gradually enable the changing of pastoralists' attitude towards peaceful co-existence, and empowering them to adopt non-violent approaches to sorting out their differences and mitigating conflicts.

Bearing in mind these important defects, peace and conflict researchers should call into question the concept of environmentally induced conflict, if not dismiss it altogether. Rather than pursuing the beaten tracks of environmental conflict research, alternative approaches need to be developed. In order to circumvent the weaknesses of the existing literature, I propose a shift from environmentally induced conflict to natural resource-use conflicts. At least three major analytical changes are required to do so. First, one must not assume that resource scarcity or environmental degradation predispose violent conflict. Rather resource use should be viewed as a contested process that inscribes itself in cooperative and conflictive relations between different resource

user groups. Natural resource management strategies and conflict management practices should gain importance and become new research themes. Second, the analysis of resource use patterns and conflicts requires a thorough understanding of institutions that shape the rules and rights of resource use. Different layers of environmental governance at local, national, and international levels need to be incorporated into the analysis of resource use conflicts. The overlap of customary and modern state rules for resource and conflict management in developing countries deserves more attention. Third, a shift from a purely objectivist analysis to one taking into consideration the intentions, meanings, and logic for action by local groups is imperative. Dedicating more interest to the rationale of actors in resource use conflicts is also a precondition for formulating conflict transformation strategies. On the whole, further research is proposed in order to better understand the true dynamics of conflicts in pastoralists' specific sites /areas, rather than the simplistic conclusions that are normally arrived at policy level.

The study has explored the concept of environmentally induced conflict with a specific reference Northern Kenya and established that political, social and economic factors are the key influencers of environmental conflict. The environmentally induced conflict however is occurring in various other regions in Kenya which differ in their way of conflict and have different settings all together. This warrants the need for another study which would ensure generalization of the study findings for all regions in Kenya and hence pave way for new policies. The study therefore recommends another study be done with an aim to investigate the concept of environmentally induced conflict in Kenya. Further a study should also be carried out to investigate the factors influencing environmentally induced conflict in Kenya.