

ENVIRONMENTAL DEGRADATION
AS A CAUSE OF CONFLICT IN
DARFUR

KHARTOUM, DECEMBER 2004

CONFERENCE PROCEEDINGS





University for Peace



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Cover Photo:

AU forces patrol Darfur camp. A Rwandan African Union soldier patrols at Abushouk camp near El-Fashir in North Darfur November 3, 2004. Some 3,000 AU troops are being deployed into western Sudan's conflict zone to improve security in Africa's largest country.
REUTERS/Finbarr O'Reilly FOR/AA SUDAN-AU EL-Fashir
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CONTENTS

Preface <i>Bakri Saeed</i>	7
Executive Summary <i>Mary King and Mohamed Awad Osman</i>	11
Conflict in Darfur: Historical and Contemporary Perspectives <i>R.S. O'Fahey</i>	23
Natural Resources Management for Sustainable Peace in Darfur <i>Abduljabbar Abdalla Fadul</i>	33
Combating Desertification Experience from Umm Kaddada District in East Darfur <i>Hassan Abdalla Al Mangouri</i>	47
Land Tenure, Land use and Conflicts in Darfur <i>Yagoub Abdalla Mohamed</i>	59
Indigenous Institutions and Practices Promoting Peace and/ or Mitigating Conflicts: The Case of Southern Darfur <i>Adam Azzain Mohamed</i>	69
Darfur Between Conflict Systems: An Abstract <i>Eltayeb Hag Ateya</i>	83
Environmental Degradation and Conflict in Darfur Experiences and Development Options <i>Abdalla Ahmed Abdalla</i>	87
Conclusion <i>R.S.O'Fahey</i>	95
Glossary	97
A Darfur Timeline	99
Bibliography	103

PREFACE

These essays were originally oral presentations made to the conference on environmental degradation and conflict in Darfur. The essays represent original and informed contributions towards the understanding of the root causes of conflict in Darfur and they provide ideas which may help in the resolution of the conflict.

The current conflict in Darfur resulted when a civil war between the government of Sudan (GOS) and two rebel movements erupted, on a background of a complex conflict system, which was becoming progressively more ethnically oriented and increasingly violent. The government resorted to force in order to crush the rebel's movements, but the army was struggling to fight the well-trained, armed and well-motivated rebels. The government allegedly opted for an alliance with the Arab Pastoralists militias, who have a vested interest in fighting this war, as most of the rebels were from competitive tribes.

Enormous efforts have been concentrated on resolving the immediate crisis in Darfur. These efforts fall into the three categories of: humanitarian assistance, improvement in the security situation to allow safe return of refugees and reaching a political settlement between the rebel groups and the GOS. This may eventually resolve the present crisis but leaves the door open for future conflict. There is an essential need to address the root cause of the problem – competition over dwindling natural resources.

The association between conflict and the ecological changes has been documented over the years in several forms. The long periods of drought, which characterized the region for the last four decades, resulted in mounting poverty and widespread population movement, which provided the causes for conflict. The drought, which occurred in the eighties, was the most dramatic in its effects and it followed a period of drought in the seventies. These ecological changes mostly affected the Northern part of Darfur compelling the Nomads to immigrate southwards in search of water and herding ground, which resulted in conflict with sedentary tribes, like the Fur and Masalit.

Darfur has been the site of inter-communal conflict for generations. However, in the eighties the conflicts in Darfur became more vicious and many of them acquired an ethnic dimension, between the Arabs on the one hand and non-Arab identity groups. The transformation of conflict, which occurred in the eighties, was caused by several factors:

1. The extent of the drought forced many Darfuri tribes to change their Nomadic lifestyle and seek settlement in lands considered by other tribes as their Dar or homeland. The decades of drought led to migration of more nomads into Darfur in search of water and grass.
2. Introduction of new traditions and new ways of fighting conflict, including the spread of modern firearms.
3. In the eighties the traditional rule, which provided the main conflict resolution mechanisms, suffered from occasional political and administrative upheavals. The population of Darfur is generally divided into Arabs and non-Arabs. The separation along such lines is probably more based on cultural heritage than on true ethnic separation. Although what is called Arabic tribes may have some Arabic roots, generations of immigration and intermarriage have rendered such separation almost meaningless.

The Fur is the largest ethnic group in Darfur. They are farmers who use traditional methods of agriculture. The second largest tribe in this group, the Zaghawa, are mostly nomadic with some sects of the tribe practicing farming. The Zaghawa also exist in Chad, Libya and the Central African Republic. The Arabic tribes in Darfur are mostly Nomadic. Not all Arabic tribes were involved in the conflict, notably the largest Arabic tribe, the Rezegat. Likewise, not all African tribes were involved; in fact some African groups, like the Gimir, were victims of the conflict.

By organising this conference, UPEACE aimed to provide a platform for debating the major issues related to environmental degradation and land use in Darfur, by scholars and experts in the field, and to alert the authorities and population of Darfur to the destructive impact of environmental degradation. It was hoped that the proceedings of the meeting would expose the major development needs in the region. Concerted efforts to address such needs are likely to reduce tension in the Darfur area.

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The conference was jointly organised by the University for Peace and the Peace Research Institute of the University of Khartoum, led by Dr Eltyeb Hag Ateya. I am greatly indebted to Dr Ateya and his staff for their effort in organising the conference. I am also grateful to the Academic Advisory Committee for formulating the Academic programme. Most of the expenses of running this conference were born by UPEACE. However, other organisations kindly provided financial assistance. A list of these organisations is attached. I thank Dr Mary E. King for her valuable contribution and advice and Dr Mohamed Awad Osman for his help with the organisation of the conference. I am grateful to Dr Sean O’Fahey for editing the essays and for the meticulous reviews provided by the editorial committee of UPEACE. My sincere thanks to Ms Ameena Payne, Coordinator of the Africa Regional Programme and her staff whose enthusiasm and continuous support was much appreciated.

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Executive Summary

By

Mary E. King and

Mohamed Awad Osman

Introduction

THE erosion of clay and *gardud* soils and the depletion of productive lands in the greater region of Darfur and particularly in northern Darfur as a result of a relentless desertification process over the past several decades, compelled a forced ecological migration and mass population movement southward in search of better conditions for pasture and farming. The ability of local people to adapt to the new realities and the subsequent questions of land use and resource sharing continued to threaten peaceful coexistence in the area and the social cohesion of the entire community. The situation was destined to incite local tensions and provoke violent resource-based conflicts. Ecological imbalance, scarcity of water, deforestation, mismanagement of natural resources, claimed inequality in the distribution of available resources and national projects, and the lack of cooperation have contributed significantly to the present conflict.

To explore the interrelationships between environmental depletion and the crisis in Darfur, the University for Peace (UPEACE) in collaboration with the Peace Research Institute held a conference on *Environmental Degradation and the Conflict in Darfur*, in Sharjah Hall at the University of Khartoum, 15-16 December 2004. It brought together a diverse group of stakeholders. There were one hundred and thirteen participants from various sectors including institutions of higher learning, civil society, women and youth groups, and advocacy organisations. The first session was attended by two hundred and four persons, including the core participants and observers from international organisations, diplomats from foreign embassies in Khartoum, and the United Nations Advance Mission in Sudan (UNAMIS).

Bakri Saeed and Altayeb Ateya preceded the holding of the conference with several consultative meetings, during which they selected an advisory body of experts in environment, conflict resolution and issues of geopolitical economy and society in Darfur. The committee also included former provincial governors, government ministers, and ambassadors with knowledge and experience in political and administrative affairs, in addition to international civil servants who had worked for UN bodies and international organisations. In addition to those who had previously engaged in bilateral cooperative ventures in related fields. The conference advisory committee provided support in terms of promoting the idea of the conference, developing the theme of the meeting, choosing the main topics, suggesting names of speakers and discussants, setting the provisional shape of the programme, making useful contacts with resource and key persons and making their past academic contributions and documentation available for frequent consultation by organisers and participants.

Opening and key speeches delivered by Bakri Saeed, Mary E. King, Altayeb Hag Ateya and Mohamed Ahmed Elshikh, the Vice Chancellor of Khartoum University, set

the theme of the conference, outlined the objectives, made an introduction to the conflict in Darfur and the recent developments, highlighted peace-building strategies and backgrounds, and prepared the ground for scholarly and straight-thinking deliberations. In addition to the comprehensive exploration of the situation in Darfur, links were established to international concerns and essential documents such as the *Millennium Development Goals*, the report on *Responsibility to Protect*, the *United Nations Convention to Combat Desertification (UNCCD)*, the UN Secretary-General's report on *Causes of Conflict in Africa and the High-Level Panel on Threats, Challenges and Change*. Special reference was made by Dr Mary E. King, who spoke on peace building as a bridge between conflict resolution and peace, to the report of Secretary-General's High-Level Panel, which had been released two weeks prior to the conference, on 1 December 2004, which states that environmental degradation results in the killing of millions every year and threatens human security.

Following the end of the conference, Dr Saeed, Dr King, and Abduljabar Abdalla, Vice Chancellor of the University of El-Fashir, held a press conference at the Meridien Hotel in Kharoum. The conference was attended by approximately twenty journalists representing daily newspapers, radio, and television. The Blue Nile TV Channel covered the news conference, providing a comprehensive report including interviews with the organisers. The three speakers at the news conference presented the findings of the meeting and responded to the questions from media representatives.

Objectives of the Meeting

Internal actors and the international community are exerting substantial efforts to resolve the immediate issues of the deadly crisis in Darfur – a region the size of France with a population of more than five million. Such labours fall into three categories: humanitarian assistance, improvement in the security situation to allow the safe return of refugees, and attempts to reach a political settlement between the rebel groups and the government of Sudan. These efforts may eventually resolve the present crisis; yet they leave the door open for further acute conflicts. It is therefore essential to address the root causes of the problem – competition over depleted natural resources, desertification, water scarcity, and environmental depletion. Hence the conference on *Environmental Degradation and the Conflict in Darfur* was expected to achieve the following objectives:

- To provide a platform for the interrogation of the major issues related to environmental degradation and land use in Darfur, thus allowing academics and

experts to consider the deep-seated causes of the discord, for pedagogical purposes.

- To expose the major development needs that might reduce tension in the Darfur area, and to offer an understanding of how the root causes of the conflict might be addressed.
- To produce reference materials for assisting teachers, in order to alert the authorities and population of Darfur to the destructive impact of continuing environmental degradation.

Areas of concern

Scholars and students from departments of politics, geography, sociology, medicine, law, and agriculture, along with diplomats, politicians, and humanitarian organisational staff came together in an interdisciplinary endeavour to address some of the root causes and to suggest possible solutions for the conflict in Darfur. Their differing areas of specialisation were reflected in the diversity of disciplinary approaches to the problem. The venue was a particularly exciting opportunity for faculty and students of the Universities of Zalingei, El-Fashir and Nyala in Darfur to present their research findings and to discuss issues of concern with a wide range of participants. Some of their recommendations called for closer cooperation between the UN affiliated University for Peace (UPEACE) and universities in the region, proposals for collaborative workshops, and joint research projects in the near future.

Issues presented and discussed at the meeting included the following:

- Water use, enhanced land use, compensatory settlement, and conflict resolution.
- Indigenous institutions and practices promoting communal peace in Darfur.
- Land tenure, land use, and conflicts in Darfur.
- Effective natural resources management for sustainable peace in the region.
- Darfur caught between conflict systems.
- Environmental degradation and strife in Darfur: experiences and development options.
- Combating desertification: an experience from Umm Kaddada district in east Darfur.
- Peacebuilding: a bridge between conflict resolution and peace.
- Environmental degradation: governance, policies, and practices.
- Reconstructing the common sociological and social characteristics of the ethnic communities in Darfur.

- The question of warrior cultures.
- Development needs in Darfur and innovative approaches that might be borrowed for application from elsewhere in Africa.
- The role of the news media.

Synthesis of Conference Findings

The problem of desertification and its profound effects on the geographic area of Darfur was considered a major source of profound ecological change. The advent of drought in the 1970s, leading to even more devastating drought during the 1980s, resulted in dramatic consequences. Some nomadic and agricultural activities, and the slash-and-burn clearance of national forests, acted as major contributory factors to soil nutrient depletion and reduced land productivity. Increased local demands for fuel, and growing pressures for higher levels of food production, led to shorter fallow periods and hence to the removal of the vegetation cover and the dismantling of the top soil layer on the *Qoz* sands. The ultimate result of this process was the reactivation of the consolidated sand dunes and the advancement of moving sands, with all of their ecological and socio-economic consequences.

According to Hassan Mangouri, University of Khartoum, in the face of the declining income, local populations opted for certain economic alternatives, which in turn added to the process of degradation. Similarly, persistent drought conditions in the northern parts of Darfur has had the effect of pushing the nomadic herders into the southern areas, who, in huge numbers, have searched for pasture and drinking water, intensifying the ongoing process of desertification and causing inter-tribal discord.

A far-reaching effect of drought has been the decrease in land productivity. Farming is the main economic activity for more than eighty percent of Darfur's population. Agricultural products such as millet, sorghum, groundnuts, and sesame are essential food sources as well as national cash crops. The production rate of such crops is largely dependent on rainfall and the natural fertility of land. Deterioration in both rainfall and land fertility has led to a sharp decline in the production of rain-fed crops.

Competition between settled pastoralist farmers and nomads is a feature of the natural resources-based conflicts in Darfur. Abduljabbar Fadul, Vice-Chancellor, El-Fashir University, referred to eleven animal routes, which have been designated as passages for nomads to pass through farmers' plots during their movements from south to north in the rainy seasons, and from north to south during the dry season. This arrangement was agreed upon by the Darfur local nomadic leaders and the settled farmers in the early 1950s. Due to the deteriorating environmental conditions,

the cattle movements from south to north were significantly limited. Moreover, the animal grazing areas have been increasingly turned over to the cultivation of crops, especially groundnuts and sesame, as sources of cash for the farmers.

An explicit example of the present crisis in Darfur is the conflict between the camel nomads and the settled farmers, who are competing over *wadis*, or seasonal riverbeds, and clay areas in Jabal Marra, Garsilla, Kabkabiya, and Geneina. Settled farmers in the past used to construct fences either as new farm plots, or as reserve pastures for their animals, or for selling the grasses. Such fences are now sometimes broken by nomads, who claim that they are illegal, generating direct hostilities and fighting between farmers and nomads. R. S. O'Fahey, University of Bergen, noted that conflicts over wells that in earlier times had been settled with spears or mediation became much more intractable in an era awash with guns.

Considerable discussion concerned the issue of land tenure and use, with emphasis on the fact that land tenure systems in Darfur are the result of a long historical evolution and actions taken by successive political, economic, and social organisations. A summary of how such a system works was provided by Yagoub Mohamed, University of Khartoum: Each tribe acquired for itself a large territory of land (*dar*). The Dar is regarded as the property of the entire tribe, and the chief of the tribe is regarded as the custodian of the property. Land is allotted to each member of the tribe for cultivation purposes, while unused land is left to form shared resources, available for use by all the visitors (nomads). The regeneration of *acacia senegal* trees, or *hashab*, which produce gum-arabic, is a successful method of authenticated ownership. This practice is advantageous, because it protects land against processes of deforestation and generates financial income.

Disputes over land tenure are enlarged by the contradictions between traditional systems and the legal implications of land ownership measures instituted by a 1970 act. Advocates of traditional mechanisms raised several arguments against formal governmental systems of land registration. They assert that such a system would be inapplicable in Darfur, because it entails restraining the mobility of groups, regardless of changing conditions of rainfall, land fertility, and available grazing lands. Fears were expressed about the expense involved in establishing and running such a system, which could impose unnecessary burdens on the rural population. The process became even more complicated when holders of land charters (*watha'iq tamlík*), granted by the Darfur Sultans, made claims to large areas as their property. Furthermore, the system was disrupted by the recurrence of severe droughts, which have hit the area in the past years. In 1997 a film on the problem of desertification, '*The Tale of Amator'*', was produced with support from the Ford Foundation to tell the tale of a severely affected village in the region. The point of the film was that land use has always been at the heart of local disputes and a major source of conflicts in Darfur.

Deryke Belshaw, University of East Anglia, proposed a number of innovative land use and development strategies for the region of Darfur, suggesting the need for strengthening local land tenure, farmers associations, and credit institutions. He stressed the necessity to replicate successful local experiences and promising imports in response to people's interests and preferences. He recommended the rapid collection of a large amount of relevant information, to be analysed and subsequently used in designing effective reconstruction and development strategies. He also encouraged the use of natural resource base-soil, water, vegetation, appropriate technologies, improved products, family enterprises, and improved institutions and infrastructure at the local level. Such steps would have the effect of enhancing productivity rapidly in both the settled agriculture and nomadic pastoralist systems.

Curriculum for Environmental Education

The need for developing an environmental education curriculum was raised, and education planners were urged to devise a countrywide blueprint for environmental education, with the support of national and international experts and specialised institutions. Such a plan should provide a teaching education curriculum, the designation of comprehensive training courses, and a plan for methods and tools for study materials. The syllabus should undertake to encourage positive and friendly attitudes among children towards the environment and engage them in lively activities that contribute to the rehabilitation of the ecosystem.

Dr Mangouri gave the example of a local teacher: El-Sayed Abu Hamad, in El-Fashir town, who engaged more than a thousand pupils in planting trees within the town perimeters. Education programmes should be linked with plans announced by national institutions, in order to ensure the continuation of functioning programmes, which promote environmental protection and the planting of trees. Projects such as 'food for work' should be revitalised to incorporate the efforts of as many local persons as possible in environmental conservation tasks.

Diffusion of Knowledge on Resource-based Conflicts

Sources of information on the environment are usually inaccessible for persons in rural areas, and a great need exists to create mechanisms for the dissemination of basic knowledge on environmental degradation and desertification, and their consequent disturbing effects. It is equally important to adopt a research strategy that would promote thorough investigation and increased understanding of environmental issues leading to improved social stability. Institutions of higher learning need

to be assisted with research materials and financial resources in order to help their students develop a commitment to research in this vital contemporary field.

Participants asked the conference organisers to utilise the academic atmosphere, the quality of the papers, and the innovations discussed in the colloquium as a basis for helping to sustain the earnest and active search for permanent solutions.

The Role of Media Institutions

Experts in the fields of journalism and public relations cited the need for accomplished, thorough, and broad media institutions. Reporting the crisis in Darfur requires a comprehensive and balanced approach. The more that people refrain from talking to the news media, and thus expressing their views and assessments of the situation, the more that diverse elements of the conflict will be obscured. Dr. Colton, United States Embassy in Khartoum, observed that the journalistic principle of fairness requires reasonable coverage and representation of all sides in news stories, and those who have something to say, but, for whatever reason, are resentful and unwilling to talk to the media must know that professional rules preserve their right not to be named in relevant reports. International news reporters are fighting against what is called the 'compassion fatigue' of the public, due to frequently recurring horrendous crises all over the world.

Combating Desertification and Development Strategies: Evaluation of Past Experiences

Ecological problems that have arisen in the past four decades have not remained without serious attempts – whether successful or unsuccessful – to combat or mitigate their effects on the population and the national economy.

A Master Plan for Combating Desertification in the Sudan was jointly prepared by the Federal Ministry of Agriculture, the United States National Research Council, the United Nations Environment Program (UNEP), the United Nations Development Program (UNDP), and the Food and Agriculture Organisation (FAO). The resulting Desert Encroachment Control and Rehabilitation Program (DECARP) of 1974 was followed by a Draft Plan of Action to Combat Desertification in 1986. The plan was prepared by Sudanese staff and adopted by UNEP, who chose the Sudan as one of three countries in the world to be supported due to the potentially dangerous situation. Three sub-projects were established as part of DECAEP: Sand Dunes Fixation, Shelterbelt Establishment, and Gum Belt Restocking.

Agricultural experts with long experience in Sudan played a significant role in the conference by throwing light on rural projects and schemes, both centrally and locally administered, which have been implemented in Darfur since the 1960s. An

area in West Darfur of 1.5m feddans in the higher and lower slopes of the Jabal Marra mountains, was designated as the site of implementation of a large-scale project for rural development. The objectives of the project were to foster community-developed agricultural inputs, apply adaptive research and training programmes, and create an evaluation system to monitor the functioning of the scheme. The project has provided services for thousands of families since its foundation in 1967, with special focus on water problems and decreasing agricultural productivity of land. It achieved notable success in both areas. Due to severe shortages in funding, however, the project has deteriorated and the basic infrastructure of rural roads, energy stations, and wells has suffered a lack of proper maintenance and renovation.

A further initiative was launched in South Darfur by enacting the Western Savanna Development Corporation. Accordingly, a rural project was established to serve an area of 135 square kilometres with a budget of twenty-six million dollars for the first phase and forty-six million dollars for the second phase. The project was aimed at the enhancement of food security and water supply and the protection of natural resources from degradation. Its activities included adaptive research, agricultural extension, settlement assistance, veterinary services, livestock management, and pasture improvement.

Two other projects in Umm Kadada and Elfursan have also achieved tangible successes against their set objectives, yet for several reasons the efforts were either discontinued or have faced stumbling blocks. Abdalla Ahmed Abdalla, Professor of Agriculture, summed up the factors that brought the projects to a standstill as the lack of credit, shortage of inputs, inadequate crop protection, low level of agricultural technology and problematic procurement procedures.

Calls for Political Reform and Immediate Ecological Action

A common belief among participants in the conference was that the people of Darfur did not have the chance to discuss their problems in a free and democratic atmosphere. The formal negotiations between the government and the rebels in Abuja concentrated *inter alia* on the cease-fire and humanitarian issues, because no breakthrough has been achieved on the political and economic fronts. To address the genesis of the political question in Darfur and to be able to reach a consensual agreement, Darfurians should have a process of political reform in place and enjoy good governance and democracy.

The kingdoms of Darfur have traditions going back to the twelfth century. Dr O'Fahey has examined original documents from Darfurian history covering the past nine centuries, which show the development of political norms and customs through a series of established states, such as the Darfur Sultanate from the seventeenth century onwards. In such African sacred kingships, the king's feet never

touched the ground, and the king was never seen eating. Dr O’Fahey noted that the extremely complex ethnicities in the area that defy simple explanations, and that ‘colour-coding’ does not work.

For hundreds of years, a well-run sultanate had been contingent on environmental issues. The British conquered Darfur in 1916, ending the sultanate’s political control, yet they retained the sultanate system. They continued to use the same titles within the local administration. Dr O’Fahey confirmed that Darfur was the most indirectly ruled part of Sudan until the 1970s. According to Dr O’Fahey, ‘The abolition of traditional rules, with no substitute of another functioning system, is at the heart of the current conflict, because there was no response to the environmental crises of the 1960s. The political decisions of the 1970s are at the core of the crisis today’.

The serious endangerment of natural resources in the area, if no preventive and corrective measures are taken soon to rescue the ecosystem from complete deterioration, will bring the entire area to a point of no return, and a last opportunity for action will have been missed forever. Policy makers, researchers, civil society institutions, and the international community should learn from the lessons of past missed opportunities.

Recommendations

Recommendations were made by experts in relevant areas, drawing on a series of field studies and experimental work accomplished over a period of three decades. Most of the presentations were given by professionals who had led national and international projects in the Darfur area in cooperation with the central government and international organisations, and which were concerned with issues of desertification, population, and development. Top-down vertical development models are not applicable, in the judgement of most presenters. To confront the root causes of the conflict and to help the people of Darfur find permanent solutions for their problems, important steps need to be undertaken. They may be summarised as follows:

- Fair and just post-Naivasha arrangements, which include financial compensation for loss of property and life, need to be implemented so that opportunities are offered for enhanced livelihoods in both rural and urban locations, and for all affected parties.
- The organisation and conducting of a regional seminar to disseminate knowledge on economic and social aspects of environmental degradation.
- The establishment of a research centre, which could provide a pool of data, new techniques for the accumulation of data, analyses, and empirical studies

on the interaction between conflict and the environment.

- The development of ecological and inter-communal early warning indicators.
- The development of an environmental education system with special focus on children.
- Solutions are needed at the political level, so that a sustainable peace can be achieved.
- Following the signing of any peace accords, it is imperative to establish a post-war land commission for land tenure and use, which can adopt an acceptable and flexible approach based on openness and free consultations with the concerned local leaders.
- The demobilisation of tribal militias and the employment of long-term disarmament plans, including the curbing of easy access to small weapons in the region.
- Local administration should have the support of the government for the important administrative tasks that they must undertake, and such support should not be politically motivated.
- Improved farming systems and technologies are crucial for the rehabilitation of deserted fields and the increase of their agricultural productivity.
- Increased investment in agriculture and improved marketing systems are critically needed.
- Encouragement of investment in environmental management would be prudent.
- Investment in rural infrastructure; roads, power and drinking water is a top priority.
- Increase resource use efficiency.
- Systems that can provide early warning of impending conflicts need to be developed as quickly as possible.
- Rehabilitation of the *hashab* trees and their combination with millet are recommended as urgent measures to reconsolidate the reactivated sand dunes and to contribute to an increase in farmers' income.
- Concentration of in-migrating nomads around water points for long periods should be strictly avoided.
- Wood cutting in settlement surroundings for various purposes should be rigorously avoided.
- The successful experiences of some villages in conserving trees in settlement perimeters—through the efforts of the inhabitants themselves—should be followed in all affected areas.
- Improvements in livestock husbandry should be instituted through the controlled use of the pasture, by accurately calculating the Land Carrying Capacity in terms of Livestock Standard Unit (L.S.U.).

- In areas with still higher resource potentialities, precise knowledge of the soil productivity and the dominant socio-economic conditions should be collected and made accessible for planners and policy makers.
- Limitation of wood cutting should go hand in hand with experimentation in energy saving methods, such as introducing charcoal ovens instead of the commonly used open wood fires.
- Improvement of infrastructure and enlargement of the market functions of the central places in the transitional zone (Umm Kaddada, al-Fasher, Mellit, Kutum).
- Both private and cooperative agricultural ownership and management of projects are highly recommended to exploit the agricultural potentials at the *wadi* basins.
- Seasonal flow of rainwater should be conserved and oriented toward irrigation purposes.
- Large rural development projects should act as a regulator factor in drought years, to keep millet prices within the purchasing power of the majority of the local inhabitants.
- Availability of high quality raw materials in the form of wool, leather, wood, and palm leaves, together with the inherited tradition of handicrafts in the region, should help to encourage the expansion and improvement of manufacturing.

The Way Forward

The concept of the UPEACE Africa Programme to link the problem of environmental degradation with the dispute in Darfur proved useful in propelling efforts by the Sudanese people, and particularly the Darfurians, to find a permanent settlement. The findings of the conference corroborated the assumption that there is an indisputable connexion between the conflict in Darfur and environmental depletion.

Those who attended the sessions from national institutions and international organisations, and the representatives from different countries, have urged UPEACE to go one step further and develop the findings of the conference into a projected action plan. A group of distinguished Sudanese scholars from various disciplines have affirmed their willingness to work in partnership with UPEACE in this area. The dissemination of papers presented at the conference, to be available for all constituencies, will pave the way for continued discussion and research, which may take the form of academic seminars, teaching workshops, public lectures, and ongoing research projects.

Conflict In Darfur Historical and Contemporary Perspectives

By

R.S. O'Fahey

University of Bergen

MUCH is being written in the Western media about the ongoing genocidal war in Darfur, the Sudan's westernmost province, an area approximately the size of France. Much is being written on what is happening on the ground, much less about the causes. I write here as an historian of Darfur and as an observer of the Sudanese political scene.

The conflict is being presented in the media as a war between Arabs and Africans, with Arab militias, called *janjawid*, carrying out massacres, rape and pillage with the support of the Khartoum Government.

This simplifies and misrepresents a very complex reality. Darfur comprises three ecological and ethnic 'zones'; the northern zone includes Arabs, Zayyadiyya and the so-called 'Northern Rizayqat', who include the Irayqat, to whose ruling family the *janjawid* leader, Musa Hilal, belongs and non-Arab (mainly Zaghawa and Bideyat); all are or have been traditionally camel nomads. The central zone on both sides of the Jabal Marra mountain range is inhabited largely by non-Arab sedentary farmers such as the Fur, Masalit, Tama, Qimr, Mima and others, cultivating millet and speaking their own languages, while in the south there are a series of Arabic-speaking cattle nomads—the Baqqara; the Bani Halba, Habbaniyya, Rizayqat and Taisha are the main groups. Language in itself is not an ethnic marker; groups like the Birged and the Berti have lost their own language within the last century. They now speak Arabic, but do not regard themselves as Arabs. All are Muslim and no part of Darfur was ever ethnically homogenous. For example, a successful Fur farmer would invest in cattle; once the cattle reached a certain number, it would be more profitable to cross the ethnic frontier and 'become' Baqqara and in a few generations his descendants would have an 'authentically' Arab genealogy.

This ethnographic map derives from research from the 1970s and before. It is almost certainly out-of-date, given the general rapidity of change in Africa. Nevertheless my reading of Human Rights Watch and other reports is that the basic facts on the ground have not changed that greatly.

Historically, Darfur as a state was both a Muslim sultanate and an African sacral kingship, established in around 1650 and heir to a very old tradition of state formation associated with two ethnic groups still present in Darfur, the Daju and Tunjur (both non-Arab), going back to probably the twelfth century. The sultanate from the mid-seventeenth century was dominated by the Fur people from whom the ruling dynasty came, but ruled by a title-holding elite recruited from all the major ethnic groups. The sultanate had a complex administrative system, partly Muslim, partly drawing on older Sudanic state-formation structures; under the sultans (*forang eri* in Fur), the people were ruled through an administration that was efficient and by the eighteenth century literate in Arabic, even though the court language remained Fur. The pinnacle of the state was the *fashir* or al-Fashir, the province's capital from the 1790s, a palace complex that served as a ritual, political and re-

distributive centre and where the royal women, especially the sultan's senior sister, played crucial roles. My impression, from the many documents I have collected and read from the period, is that the *mesakin* or ordinary people could expect not too much *zulm* or 'oppression'. In short, it was a well-run state. One example is a decree from the last sultan, 'Ali Dinar (1898-1916), to his chiefs pointing to the fact that the rains that year were exceptionally good and ordering them to plant an extra field, whose yield was to be stored for the future. The evidence we have from the period of the sultanate, which is abundant, is that what would now be called ecological concerns, namely control over land-rights, water and grazing, were very carefully monitored; under 'Ali Dinar these concerns are very well documented.

Under the sultanate the settled peoples, essentially non-Arab, were able to more or less control (or keep out) the nomads by having a state on their side; the sultanate's ultimate sanction was heavy cavalry, riding imported horses (much larger than the local breeds) and wearing chain-mail. The nomads could not stand up against them; here the camel nomads of the north were more vulnerable than the Baqqara, who were always a problem for the sultans, since they could withdraw ever further south in the Western Bahr al-Ghazal. As an historian I am struck by the parallels between the present situation, although today the conflict is much bloodier, and the position in the 1880s after the destruction of the sultanate in 1874 at the hands of a Northern Sudanese slave-trader, al-Zubayr Pasha, when a series of sultanate pretenders attempted to keep the cause of Darfur's independence alive—my informants called this period (1874-98) *Umm Kwakiyya*, the 'killing period'. From my field-notes written in the 1970s, *Umm Kwakiyya* sounds very much like today.

When the sultanate was restored in 1898 by 'Ali Dinar he spent most of his reign driving the nomads, north and south of the settled area, back, until he was killed by the British in 1916. The British then discovered that they had no alternative but to continue his policy. They also kept the old ruling elite intact; indeed many of the educated Darfurians of today descend from that elite. A striking symbol of this continuity was that up until the 1980s, the province governor lived in 'Ali Dinar's palace and had his office in 'Ali Dinar's throne room with the sultan's throne behind his desk. One flaw in British colonial policy was to attempt to fix all 'tribes' in their *dars* or homelands as if they had immutable boundaries; a second was to legislate land-use and ownership as 'tribal' or communal, ignoring the sultanate's practice of granting land as freehold.

In the colonial period (1916-56) Darfur was a backwater ruled by a handful of British officials; its only resource being the young men who migrated eastward to find work in the cotton schemes between the Blue and White Niles.

After independence in 1956, the situation did not change much, save for the building of a railway to Nyala in 1959, which pulled the centre of gravity southwards to Nyala. There was some economic development in the fertile region around

Zalingei in the southwest with cash crops such as mangoes and oranges destined for the markets further east. It was only in the mid-1960s that Darfurians, both Arab and non-Arab, began to enter the national political arena and assert their own identity. The Darfurians tended to vote in democratic periods for Umma Party (which grew out of the Mahdist movement of the late nineteenth century), although the towns usually voted for the Democratic Unionist Party (linked to the Khatmiyya Sufi brotherhood), although there was general dissatisfaction with what was seen as Khartoum's neglect of the region, which found its expression in the Darfur Development Front established in 1966. When I first went to Darfur in 1968 members of the ruling elite made a conscious decision to help me with my fieldwork, providing me with informants and documents—a fact that I did not discover until many years later (in 1994 in fact). They wanted their history told.

In the 1970s matters began to change; the military coup under Ja'far al-Numayri brought to power in the Sudan a regime which was a combination of young pan-Arabists, many Ba'ath-influenced, Communist sympathisers and independent intellectuals. It was an exciting time to be in the Sudan; it was also in hindsight a disastrous time, especially for Darfur. Why Darfur? One of the al-Numayri's 'Young Turk' objectives was modernisation—trivially, but significantly, illustrated by the female traffic police, in their snazzy white uniforms at the end of Sharia al Qasr; my students were both confused and fascinated. More serious was the determination to end all remnants of the colonial era. One aspect of this new policy was the nationalization of businesses owned by expatriate communities, Armenians, Greeks, Copts and others—an imitation of 'Abd al-Nasir's policies that worked poorly in the Sudan. Another aspect meant the end of indirect rule, of 'tribalism' and 'sectarianism'. In Darfur, the most indirectly-ruled province of the Sudan and where the sultanic system was more or less intact, this translated into the abolition of the Native courts and the end of chiefly rule. The problem was that the old order, with roots going back over several hundred years, was uprooted, while what replaced it never really functioned. How misguided this policy was to be shown in the 1980s.

One of the root causes of the present crisis goes back to the mid-1980s when prolonged droughts speeded up the desertification process in northern and central Darfur, which in turn led to much pressure on water and grazing resources, as the camel nomads were forced to move southwards and become farmers. This intensified pressure on grazing and water. Conflicts over wells, that in earlier times were settled with spears or, hopefully, mediation by elders or religious figures, became much more intractable when the area started to become awash with guns, largely brought in from Chad or Libya.

The militarization of the crisis has grown ever since Sadiq al-Mahdi while Prime Minister in the mid-1980s took the disastrous decision to give arms to the Baqqara of southern Darfur ostensibly to defend themselves against the Sudan Peoples Lib-

eration Army (SPLA). No one was very surprised when they started to turn the guns on their northern neighbours, the Fur, Masalit, etc. The SPLA exacerbated the situation by trying to open a 'front' in southern Darfur under Daoud Bolad, an Islamist turned Darfurian nationalist. It was at this time that the Arab tribal militias, first called *murahilin*, now *janjawid*, began to go out of control.

The ethnicization of the conflict has grown ever more rapidly since the coming to power by military coup in 1989 of the Islamist regime of President Umar al-Bashir. The present regime is not only Islamist but also Arabo-centric, a fact often underestimated by outside observers. Arabism (*'arabiyya* or *'uruba*) has deep roots in Northern Sudanese nationalism, going back to the 1920s. The paradox here is that many Northern Sudanese have experienced racist incidents while travelling in the Middle East. Ironically the 'Arabs' appear to regard the Northern Sudanese as only marginally Arab. In the context of the present conflict this has led to the injection of a kind of 'handed down' ideological/racist dimension with each side defining themselves as 'Arab' and 'Zurq', i.e. 'Black'.

This needs qualification; there was and is an elaborate colour-code terminology in most of the northern and western Sudan. 'Arabs' are described as *ahmar* 'red' or *akhdar* 'green' while the non-Arabs are described as *azraq* 'blue', 'black' or *asfar* 'yellow', and there other terms; nor are they used consistently. These terms appear in Sudanese legal documents from the nineteenth century and before in descriptions of slaves in dowry and sale documents. My impression is that Sudanese often use these terms in a non-racist way to describe skin colour. Having said this, it seems to me that, as a part of the present conflict in Darfur, many of the racist attitudes traditionally directed towards slaves or 'enslaveable' peoples have been redirected to the sedentary non-Arab communities.

The racist dimension comes to the fore in reports of rape and mass killings, the destruction of mosques and the desecration of the Quran. I do not profess to understand what is transpiring on the ground in Darfur, but that something different from before is happening, of that I have little doubt.

Ironically, the peace process between the Khartoum Government and the (SPLA/M) had undoubtedly fuelled this ethnic cleansing, in the sense that the non-Arab Darfurians felt that they were side-lined, while the Khartoum Government was trying to use the Arab nomads to keep control of the region. It is far from a coincidence that the Sudan Liberation Army (SLA) and the Justice and Equality (JEM) launched their attacks when they did (February 2003). It was at a time when it was becoming clear that a peace settlement was likely between the Khartoum Government and the SPLA. My impression is that the two sides, with the implicit blessing of the observer group monitoring the peace negotiations, comprising the US, U.K. and Norway, the 'friends' of IGAD (Inter-governmental Authority on Development) do not want to know what is going on in Darfur or, at the least, keep the two is-

sues quite separate. Evidence for this comes out clearly in the determination of the Khartoum Government to keep the NGOs and the media out of the region. Here it is important to emphasise that the Khartoum Government and the SPLA are only two players in the field. Khartoum through the negotiation process has successfully sidelined the National Democratic Alliance (NDA), the grouping of the traditional northern Sudanese political parties, co-opting some of them in the process, while the SPLA have pre-empted other voices from the South. Here is where Darfur, the Nuba and in the eastern Sudan, Beja and Rasha'ida come in; will it be possible for Khartoum to side-line these movements in the same way? War and terror are two-edged weapons; the cohesiveness of the nomadic *janjawid* may prevail in the short term, but the sedentary peoples of Darfur, especially the Fur and Masalit, have half-forgotten mechanisms of mass-mobilization of their young men—among the Fur they were called *jurenga* led by local war chiefs or *ornang*. Some of the reports I have seen of child/teenage soldiers suggest that these organizational techniques are beginning to re-emerge in modern form.

To come full circle: in my introductory remarks, I mentioned China, America, the international community, etc. Let us review the international ramifications of the crisis in Darfur. Probably the single most important outside actor is China, which now imports 5-8% of its oil from the Sudan and has invested \$3.5 billion in developing oil production there. China, together with Russia, has made it clear that they will veto any attempt in the UN Security Council to impose effective sanctions on the Khartoum Government. Therefore, any sanctions coming from the UN will have no teeth. That China should be decisive in the affairs of the Sudan is an indication of the world in which we live.

America, and for that matter Britain, are bogged down in Iraq. America, prodded by the evangelical right, outraged at the killing of Christians by Muslims in the North/South conflict, has kept American oil companies out of the Sudan and has remained active in the North/South peace process. The Bush administration is anxious to have some good news out of the Muslim/Middle Eastern world but is handicapped by being militarily overstretched.

As a footnote to this discussion, let me talk briefly about Norway's role, since I am a professor there. Norway is a post-Christian country of enormous wealth that is anxious to do good in the world, a reflection of its missionary heritage. The failure of the Oslo Accords of 1993 has not diminished my government's ardour to do good. Darfur has encapsulated the dilemma; does it cast aside all the investment it has made in the North/South peace process because of Darfur? So far the debate in Norway has been muted and confused in government circles and the media.

Turning to the regional parties, of the Arab World one can expect nothing, focused as it is exclusively on Israel/Palestine and Iraq and pursuing a policy of never really criticising another Arab government. The Khartoum Government has agreed

to allow the African Union (AU) to send some 3,000 troops for peace-keeping in Darfur, secure in the knowledge that (a) the AU does not have the resources to send such a force and (b) even if it got there, such a force would make little difference in a place the size of Darfur.

Finally to the local parties; the Khartoum Government and the SPLA have a vested interest in concluding in a peace agreement so that they can get on with dividing the oil wealth, which from what I have heard from the negotiations, is now the only concern the two parties have. How this money—in an African context enormous sums are involved— will be used is an open question. Oil wealth in Africa has been a disaster, as Nigeria and Equatorial Guinea demonstrate [it took Norway, one of the most socially cohesive, well-governed and transparent countries in the world, some twenty years to figure it out]. The money will in all likelihood be used to buy arms (as it is already being used by the North) and enrich the elites on both sides.

Where does this leave Darfur? The short answer is in hell. The major players, America, China, the UN and AU either will not or can not do anything decisive, the local players be it the Khartoum Government or the SPLA have their own agendas, in which Darfur is a sideshow. Whether the Darfurians can overcome their internal divisions to the extent that they can force themselves to the negotiating table as serious partners is an open question. As of this writing, I have to be sceptical that the outcome will be anything other than another Rwanda, this time in slow motion, meaning as many will die as in Rwanda but slowly and, as usual, anonymously.

What to do? A few observers, military or otherwise, in a place the size of Darfur, with virtually no roads, a very fragile ecology, where the old order has broken down but has not been replaced by any viable system, will not be enough. And what country or countries are going to send the kind of military manpower needed? The *janjawid* will prove to be very tough to stop; they have a fully-developed racist ideology, a warrior culture, a plethora of weapons, and enough horses and camels—still the easiest way to get around Darfur. And as I write in late November 2004, what seems to be developing is a two-tier war; on one level there is an intensification of the local conflicts over control of resources. This level interacts with the conflict between the SLA and Khartoum Government forces. The distant genocide in Darfur will be very hard to bring to an end even if there is the will of the international community and the parties in the Sudan to do so. In Fur you greet by saying *afia donga* 'May you be well', if only!

FOOTNOTES

- ¹ It is not my purpose here to discuss in detail the media coverage; most can find up-to-date information via Google. From my experience, the most accessible and reliable source is Human Rights Watch, while Dr. Reeves provides daily analyses. See also, *Sudan Focal Point-Africa* by John Ashworth and *Justice Africa's Prospects for Peace in Sudan* by Alex deWaal.
- ² A personal caveat needs to be entered here. I did fieldwork in Darfur between 1968 and 1977; my primary focus was on the pre-colonial history of the region. I have published three books and some fifty articles on the history and culture of Darfur, but it is important to emphasise that I did my research before the mid-1980s when drought and desertification began to bring about far-reaching environmental, demographic and political changes.
- ³ From the Arabic, *jann* (jinn) 'spirit, devil' and *jawad* 'horse'.
- ⁴ See the two fundamental articles of Gunnar Haaland, 'Economic determinants in ethnic processes', in *Ethnic Groups and Boundaries*, ed. F. Barth, London 1969, 58-73, and 'Nomadism as an economic career among the sedentaries of the Sudan Savanna Belt', in *Essays in Sudan Ethnography*, eds. I. Cunnison & W. James, London 1972, 149-72. On the creation of identity from a different perspective, see O'Fahey & Hasan Imam Hasan, 'Notes on the Mileri of Jabal Mun', *Sudan Notes and Records*, li, 1970, 152-61.
- ⁵ See my *State and Society in Darfur*, London 1980.
- ⁶ The ethnographic and historical data is exceptionally rich. The main collections include the papers of the Rev. Dr. A.J. Arkell from the 1920s & 30s (c. 2,400 pages; School of Oriental and African Studies, London); the manuscripts of a self-taught Sudanese historian, Muhammad 'Abd al-Rahim (in Arabic; National Records Office, Khartoum); the several hundred documents and decrees (the earliest from c. 1710) that I photographed in the 1970s (copies in Bergen and Khartoum)); the several hundred pages of notes I made from the Province colonial archives in the same period, which archives were subsequently destroyed by accident during the al-Numayri era [copies of my notes are accessible in Khartoum and Bergen], and my field-notes. It would be possible to write in detail on the sultans and their attitude to the environment, a theme I neglected in my writings. I hope in the years to come to put as much of this material as possible on the Web.
- ⁷ *State and Society*, 98-99.
- ⁸ See my 'The Conquest of Darfur, 1873-1882', *Sudan Notes and Records*, N.S. 1, 1998, 47-67. Some of al-Zubayr's arguments justifying his conquest of a Muslim state have their echoes today.
- ⁹ See further A.B. Theobald, *'Ali Dinar: Last Sultan of Darfur, 1898-1916*, London 1965.
- ¹⁰ See R.S. O'Fahey and M.I. Abu Salim, *Land in Dar Fur*, Cambridge 1983.

- ¹¹ See further Joerg Adelberger, *Vom Sultanat zur Republik. Veränderungen in der Sozialorganisation der Fur*. Stuttgart 1990.
- ¹² In much of what follows an authoritative guide is Douglas H. Johnson, *The Root Causes of Sudan's Civil Wars*, Oxford 2003. This provides an indispensable analytical and bibliographical guide to the topics discussed here.
- ¹³ I met in al-Fashir in 1970 the late Dr. Ja'far 'Ali Bakhit, the then Minister of Local Government and one of the independent intellectuals around al-Numayri [he was professor of political science at the University of Khartoum]. I argued with him that his policy was a mistake; he agreed intellectually, but there was a political imperative at work. He had written his doctorate at Cambridge on indirect rule under the British.
- ¹⁴ See Alex de Waal, *Famine that Kills: Darfur, Sudan, 1984-1985*, Oxford 1989. For an earlier study that foresaw much of what happened soon after, see Fouad N. Ibrahim, *Ecological Imbalance in the Republic of the Sudan, with references to Desertification in Darfur*, Bayreuth 1984.
- ¹⁵ For a description of a successful mediation between the Rizayqat and the Bani Halba by the late Dr. M.I. Abu Salim and his friend, Ja'far 'Ali Bakhit, see M.I. Abu Salim, *Fi'l-shakhsiyat al-Sudaniyya* [Concerning Sudanese Personalities], Khartoum 1979.
- ¹⁶ See on this period, James Morton, 'Tribal administration or no administration: the choice in Western Sudan', *Sudan Studies*, 11, January 1992,
- ¹⁷ Heather Sharkey, *Living with Colonialism. Nationalism and Culture in the Anglo-Egyptian Sudan*, Los Angeles, 2002.
- ¹⁸ We have several thousand such documents in Bergen and I intend to publish a study of the descriptions, *awsaf*, in the future. On colour-coding, see R.S. O'Fahey & Jay L. Spaulding, *Kingdoms of the Sudan*, London 1974, 30-31. I give some examples:—
Quantity 1 slave: her name Halima, Tamawiyya [from Dar Tama]: yellow: of medium height: valuable.
The woman (al-adamiyya): called Khadimallah: locally born: red by colour: crippled: of medium height.
The woman: called Fadl: locally born by nationality [*al-jins*]: green by colour: of medium height: scarified in the local manner.
- ¹⁹ See Human Rights Watch, *Darfur Destroyed*, May 2004. This I find very difficult to understand. The Sufi brotherhoods in Darfur, the predominant Muslim organisations in the province, primarily the Tijaniyya, are racially blind. I can not envisage the late Ibrahim Sidi, Darfur's most respected Tijani shaykh (d. 2000), tolerating such racism.

- ²⁰ On other emerging ethnically-based liberation movements, see *Indian Ocean Newsletter*, 30 October 2004.
- ²¹ On this topic, see Johann Hari in *The Independent*, 19 November 2004.
- ²² One may contrast this with the proposed Khartoum/SPLA peace settlement which stipulates some 7,000 peacekeepers on the north/south border.
- ²³ Recently a splinter group (the National Movement for Reform and Development: NMRD) has broken away from JEM and joined SLA in western Darfur.

Natural Resources Management for Sustainable Peace in Darfur

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Introduction

THE Greater Darfur region occupies an area of five hundred thousand square kilometres approximately, in the north western part of the Sudan, located between the parallels 08:15 and 20:00 North and 22:00 and 27:30 East. The desert part extends from north of parallel 16:00 to 20:00 in an area of about one hundred and forty-five thousand square kilometers representing twenty-eight percent of the total area of the region. The desert part is virtually unoccupied and therefore it has no human activities that utilize water or land for agriculture or range.

The region mainly consists of four main climatic zones. Firstly, the rich savanna in the south with an average rain fall between 400 mm to 800 mm per year; the rainy season extends between 4 to 5 months. Secondly, the poor savanna in the middle of the region, with an average annual rainfall that ranges between 200 to 400 mm and a rainy season ranging between 3 to 4 months. Thirdly, is the arid zone which occupies the middle of northern parts of the region. The rainfall in this zone is limited, with high fluctuations and ranges from 100 to 300 mm. The fourth zone is the desert zone and it is characterized by lack of rainfall and high temperatures during the summer.

Topography: Darfur is sandy and *qoz* soils occupy the major parts and form about sixty-five percent of the northern parts of the region and 10 to 15% of the southern parts. The mountainous and hilly lands perform the middle part and it is represented by *Jebel Marra plateau*, and in the north it is represented by *Meidob* Hills. Clay and *gardud* soils occupy the western and south western parts and some pockets in the north.

Jebel Marra Plateau acts as a watershed division and from which flows most of the seasonal streams and *wadis* such as *Wadi Barej*, *Wadi Azoom*, and these flow to the west and southwest of the region. In turn, *Wadi Al Ku*, *Wadi Taweela*, *Wadi Kuttum*, *Wadi AlKaj* flow towards the east and south eastern part. *Wadi Kas*, *Wadi Bulbul* and others flow towards the south and southeast of South Darfur. Some of these *wadis* retain water in some areas which helps in utilizing the water of the shallow wells to grow vegetables and horticultural crops (*Kabkabiya*, *Kuttum*, *Garsila* etc). The deep water aquifers of *Baggara*, *Sag Anaam*, and *Umbayada* basins are good potential sources of drinking water for the people and animals in the north eastern and south eastern parts of the region.

The rainfalls in autumn and floods as well as shallow wells are the cornerstones for the Darfurian socioeconomic activities for providing food and other forms of livelihood. These economic activities are mainly agriculture and include the raising of livestock. However, since the two activities depend on water and land, competition between the users of these resources is a reality.

The present Darfur crisis which is the focus of the national and international media

and the concern of the national and international communities was initiated by the competition and conflicts over the natural resources. Therefore, any attempt to solve the present conflict must consider the dimension and role of the natural resources as used by the stakeholders in Darfur.

For the purpose of this workshop, this paper is an attempt to analyze the potential of the land and water in the region in the past and present and to examine to what extent competition over them has contributed in the present crisis. Lack or very limited availability of data and statistics about the natural resources in Darfur is to some extent balanced by the long experience of the writer in Darfur. To explain the present crisis, let us discuss in brief.

1. Population and population growth in Darfur.
2. Subsistence farming.
3. Livestock.
4. Range and Pasture.
5. Water.

1. Population

Similarly to other parts of the Sudan and Africa, the population of Darfur has increased substantially over the last fifty years. As the result of this, the population density has increased tremendously. The table below explains this increase.

Table: Population density changes in Darfur (1956- 2002).

Year	Population	Density (Person / Km ²)
1956	1,080,000	3
1973	1,340,000	4
1983	3,500,000	10
1993	5,600,000	15
2003	6,480,000	18

(Source: population figures, Department of statistics. Area 360,000Km² below parallel 16:00 North)

The increased population has pressed its need for a livelihood upon the natural resources and has thus resulted in great pressure upon, overuse and misuse of these resources. In turn the ecological conditions have changed through declining rainfall, drought and desertification etc.

2. Agriculture (Farming)

Crop farming is the main economic activity for more than eighty percent of Darfur's population. The cultivation of millet, sorghum and other cash crops (groundnuts, sesame etc) is essential for food and economy of the population. Millet is the staple food for more than seventy-five percent of the population and is cultivated throughout Darfur, especially in the sandy soils and clay soils that could be exploited easily by manual labour. In turn sorghum is the staple food for the population in the west and the south of the region. It is cultivated in the *wadi* beds, light clay and *gardud* soils. The cultivation of these crops has continued for hundreds of years in Darfur. The productivity of these crops is dependent on the rainfall and natural land fertility.

In turn, the demand for the agricultural crops has increased parallel to the increase in the population. Therefore, what are the changes that have taken place since the beginning of 1960s? What has been the effect of the droughts that started in the beginning of seventies? Productivity and production of the rain fed crops declined due to the decline of the rainfall in quantity, distribution and intensity. For compensation of the declining production, horizontal expansion of farming became an option for the farmers. In turn, the average land holdings per household or person have decreased due to population increase.

Although there are no systemic and accurate official productivity figures from Darfur in the period of the sixties to the late eighties, based on interviews with some farmers, the figures below indicate the changes in both area and productivity.

Yaqub Ahmed is a farmer in qoz soils in the western part of al-Fashir; his farm area is 60 mokhamus (5046 square meters). In 1968 he cultivated 12 mokhamus and the yield was 84 sacks of millet (100 Kg), i.e. 800 Kg per mokhamus.

In 1974 he cultivated 25 mokhamus and the yield was 43 sacks, i.e. 170 Kg per mokhamus.

In 1984 the entire plot was cultivated and the yield was 12Kg per mokhamus.

From 1999, 2000, 2001, 2002, 2003, the crop harvest assessments carried out by the Agricultural Planning Unit (APU) of the State Ministry of Agriculture and Natural Resources figured the following productivity results: 65, 45, 23, 45 and 11 Kg per mokhamus respectively for the same area. Moreover, it is worth noting that this area of the qoz was one of the 11 animal routes for nomads before 1962 and since became agricultural land, and due to continuous farming, droughts and pests etc., the productivity of millet and the grazing carrying capacity have progressively declined.

Generally, by the end of the twentieth century the productivity of staple food crops has declined, especially in North Darfur to less than 25 Kg per *mokhamus*. As the result of the declining production, expansion of plots was a strategy adopted by the farmers. In turn, farm sizes per household decreased due to population increase and the distribution of land through inheritance.

This expansion of agriculture was not confined to crop land but ultimately became at the expense of the pasture lands, not for the nomads alone, but for the settled farmers themselves. At present, in all Darfur especially on the *qoz* soils it is 'wall to wall' millet farming without corridors for the small animals to graze along during farming season.

The expansion of farming on the *qoz* soils has not been confined to millet cultivation only, but in regard to other cash crops (groundnut, sesame etc) cultivation has also increased due to the market demand and their importance to the farmers to earn cash. This expansion of farming has not been limited to *qoz* soils only, but has included the light clay and *gardud* soils on the *wadi* beds where there is the possibility of exploitation by hand. Moreover, the new simple and cheap agricultural technologies have facilitated the utilization of most *wadi* soils either by the utilization of rainfall moisture for winter cropping or irrigation by the use of diesel engine driven water-pumps from the shallow wells. In former years the *wadi* and clay soils were normally used as dry season grazing areas for the livestock of nomads and settlers.

In conclusion, those changes that have taken place in the expansion of farming in the last forty years were substantial. Some studies have revealed that millet cultivation on the *qoz* soils in North Darfur has increased to 125 to 150 percent as from 1960. Moreover, the expansion of agriculture on the clay and *wadi* soils has grown by 250 to 300 per cent. From this situation, it is inevitable that competition over land would take place not only between the farmers and nomads, but between the farmers themselves due to lack of grazing lands for their animals.

3. Livestock raising

Livestock raising in Darfur is the second socioeconomic activity for the settled population. However, the livestock economy has continued to gain importance since the seventies, so the government encouraged livestock production. Animal population in Sudan as well as in Darfur, though there are no accurate figures, has increased substantially. This increase is due to:

Firstly, the preventive animal health services provided by the government veterinary authorities, (implementation of animal vaccination campaigns against pandemic diseases, Rinderpest, Sheep Pox etc) have reduced the loss of the livestock due to outbreaks.

Secondly, the demand for mutton and beef by the Arab and other Gulf countries has encouraged animal breeders to invest in their animals to improve productivity. This investment was mainly in disease control by the use of veterinary drugs and medicines, improvement of performance through selection of good breeds and fattening in some areas.

In North Darfur and in the areas where successive millet harvest failures are a factor, the settled farmers shifted to small animal raising (goats and sheep) as a risk avoidance strategy. Moreover, the terms of trade between animal and millet - the staple food in the region- shifted in favour of the animals in most years (one sheep of 6 months for 1.5 sacks of millet, and one year male goat for 1 to 0.8 sacks) in average years. This encouraged the millet farmers to be keen about their crops residue not being utilized communally by the nomads' livestock.

Because the livestock production in Sudan is based on communal grazing, unfortunately no investments have been made by the government or the animal breeders to improve the pasture, especially by the nomads. Nomads have continued to depend on natural grazing. So this increase in the animal population ultimately affected the carrying capacity of the natural grazing lands.

4. Range and Pasture

Range and pasture is the backbone of livestock production in the Sudan in general and Darfur in particular. The growth of forage plants and grazing grasses undoubtedly depends on the rainfall. And due to the droughts and shortage of rains in the last thirty years, the productivity of natural pasture has decreased. In North Darfur, for example, the carrying capacity of pasture in the seventies was forty to fifty animal units per square kilometre in the eastern sandy soils (one animal unit is three hundred- four hundred animal live weight). For comparison, the survey carried out by the Range and Pasture Department conducted in 2001/ 2002 which was an above average rainy season, the result of the carrying capacity was only 9 animal units per year.

The deterioration was not limited to grasses, but included a decrease in the production of trees in form of pods and leaves which normally add over thirty percent to range carrying capacity. This decrease was due to the death of the trees as the result of the droughts or due to continuous felling of trees for firewood and charcoal which became one of the important economic activities and source of income for most of the poor rural populations in Darfur, settled people and nomads as well.

Regarding the decrease in the pasture lands, some estimates recorded that in the *goz* soils, the decrease is over sixty per cent and the in clay and in the *wadi* lands, the decrease is over that an additional sixty percent.

Because of the changing situations and relations between agriculture and live-

stock raising, severe competition between the two economic activities is undoubtedly inevitable. Therefore friction and conflicts between the stakeholders is the ultimate result. And in the Darfur context, the natural resource base conflicts are aggravated by the political dimension, the existing crisis in Darfur being an example.

5. Animal Routes

Animal routes in Darfur are areas between the farms plots designated for nomads to pass through during their movements from south to north during rainy season and from north to south during the dry season. This arrangement was agreed upon by the local leaders of the nomads and the settled farmers in early 1950s. This arrangement then was fostered by the Government and enforced by all parties. The arrangement continued facilitating effectively the movement of the nomads without serious implications, apart from minor conflicts which were normally resolved by traditional mechanisms until the late 1970s.

Generally, the animal routes agreed upon and established in Darfur were eleven passages on the eastern and western parts of *Jebel Marra Plateau*. For more explanation, the following definitions are known for this arrangement:

- *Massar* is an animal route or passage between agricultural farms within one hundred meters in width used by the animals to move from area to another without stopping for grazing or watering.
- *Seeniya* (Roundabout), it is a grazing area between the farms within 4 to 5 Km² designated for the passing animals to graze and rest for hours or one day before resuming their movement.
- *Manzalla*, Fariq (Nomad camp). Originally this is a grazing area between, near or around the farms used by moving nomads for grazing within certain periods and then they move to other locations during their trips.

As stated before, eleven animal routes were known since the early fifties. The length of these routes ranged between two hundred and fifty to six hundred kilometers from north to south. The latter animal route is from *Wakhsyim* in North Darfur to *Um Dafog* in South Darfur and the former is the route from *Kulkul Dam* in North Darfur to *al-Daein* in South Darfur. The total areas for the eleven animal routes are estimated to be thirty-four thousand square kilometres. Some of those routes were for the cattle and others for the camel nomads. Due to the deteriorating environmental conditions in the early eighties the cattle movement from south to north has been limited to south of the railway line to Nyala (south of parallel 12:30). Moreover, the grazing areas have been limited by the cultivation of crops, especially

groundnut and sesame as sources of cash for the farmers.

Some of the camel routes and dry season grazing areas in the dars of some tribes have been used for crop production throughout the year, staple food grains in the rainy season and vegetables and horticultural crops in winter either by rain moisture or irrigation. And the recent conflicts between the camel nomads and the settled farmers were the result of competition over the *wadi* and clay areas (in *Jebel Marra*, *Garsilla*, *Kabkabiya* and *Geneina*) and the preset Darfur conflict was initiated from this situation.

6. Communal grazing (*Talaig*)

When people talk about animal routes and grazing, this means free or communal grazing. It is well known that animal production in Sudan in general and Darfur in particular is based on communal grazing and the use of the crop residue by all the community freely. That is because the former relationship between the animal manure and crop production is a complementary relationship. Animal manure improves land fertility and animals benefit from crop residue as good fodder of high nutritional value.

To organise this relationship, successive local governments continued issuing legislations and local acts, by determining a certain time after the rainy season for the farmer to collect their crops and leave their crop residue to be used by animals for all the community. However, these arrangements were feasible for all when the farms were producing enough for the farmer's food security and livelihood needs.

With the decline in rainfall, successive harvest failures and changing climatic conditions, the expected dates of crop harvest became unpredictable; the determination of a specific date for *talaig* is not suitable for the farmers. Moreover, most of the millet farmers in the *qoz* areas in North Darfur, as noted above, have moved to raising small animals themselves and want their crop residue to be used by their animals. Poor farmers who have no animals need their crop residue to sell as a source for income.

In turn, the camel nomads are still advocating for the *talaig* system to be practised for their benefit. Many conflicts in Darfur arise from this impractical legislation.

7. Unattended animals' fences (*Zaribat Hawamil*)

This is a system traditionally adopted by the farmers and animal owners, during the rainy season the local leader (*omda* /or sheikh) arranges construction of a fence in the village for keeping unattended animals. Unattended animals that happen

to enter farms and destroy plants or crops would be taken by the farmer and kept in the fenced area until its owner pays compensation, fine or is forgiven. In most cases traditionally these types of conflicts were resolved by the community member (*ajawid*) in the village and normally the situation was settled through pardon or small fine.

In the recent 1990s, particularly in North Darfur, the local councils adopted a policy of renting the unattended fences in the villages to well-off or influential community members each year as a source of revenue for the local council. The local council provides the buyer with the rate of fines for different types of animals. In this case the buyer is normally interested in making a profit from his investment, and so, the traditional mechanism of solving disputes of this type which is mainly forgiveness is broken. And in many cases the recent conflicts between the farmers and the nomads in Darfur has been caused by local government polices and legislations.

8. Air Fences (*Zareibat al-hawa*)

ZareibataAl-hawah is one of the factors that has severely damaged the relationship between the nomads and the settled farmers in Darfur and in most cases has become a reason for a conflict, aggression and war between the stakeholders.

Air fences are fenced areas within the pasture-lands for the nomads or the settlers. The air fence is constructed by settled farmers either as new farm plots or as a reserve pasture for their animals or for the sale of the grasses. If these fences are broken by the nomads, claiming that they are illegal, conflicts quickly arise between the nomads and the farmers.

Due to deteriorating pasture conditions, the farmers have adopted the practice of raising small livestock (goats, sheep, etc.). They then claim that the nomads, when they are near the village grazing lands, utilize the latter for a short period and then move to other areas, leaving the farmers' animals without pasture. As a policy of preserving fodder for their animals, the farmers in most of Darfur, but especially in North Darfur increasingly construct air fences and this in turn has become one of the causes for conflict over the natural resources.

9. Water resources

The Darfur region, especially the north, has been considered as an area of general water shortage. However, in spite of declining rainfall, water shortage has not become a cause of severe conflict between the stakeholders.

The situation of drinking water in Darfur has improved substantially due to:

- Continuous efforts of the Government in investing in water in Darfur since 1984.
- The Government has encouraged the private sector to invest in water resources, so many water sources are now operating privately in most parts of Darfur.
- The international assistance for water provision in Darfur was substantial especially after the 1984/85 drought. As an example, UNICEF of the United Nations under its Water and Sanitation Project (WES) has drilled and installed over six thousand water hand-pumps in thousands of villages in Darfur. This made millions of cubic meters of drinking water available for humans and small animals. Some studies revealed that hand-pumps in North Darfur led to increased animal population, especially sheep and goats.
- WFP in North Darfur for example has constructed over forty *hafir* (wells) and dams between 1999-2002 and this in turn has contributed effectively to solve the problem of drinking water for human and animals.
- Other international organisations have also provided considerable assistance in the field of drinking water provision of assistance in the water sector with the contribution and participation of the grass root beneficiaries.

We thus note that water in Darfur is not one of the elements causing conflict between the stakeholders.

Conclusion

From the above analysis of the natural resources management and use in Darfur, the following are the main conclusions:

- The expansion of agricultural lands as the result of declining productivity resulted from shortages of rainfall and the increase in pests has affected negatively the range and pasture lands in Darfur.
- Increased livestock population and the deterioration of the range and pasture have increased competition and friction between the animal owners and the farmers.
- The movement into Darfur of pastoral communities from Chad, especially camel nomads, is a factor: these do not respect the traditional relations and mechanisms for conflict resolution between the pastoralists and the farmers and this has increased the frequency of conflicts.
- The communal grazing system is one of the most important factors leading

to conflicts between the nomads and the farmers.

- The weakening and politicization of the traditional local administrative system has undermined its effectiveness in minimizing conflicts between the pastoralists and the farmers.
- The lack of development in the agricultural sector to increase real productivity has led to horizontal expansion and increased friction between animals and agriculture.
- Governmental policies and its strategy in managing the grassroots issues, especially those regulations that are not based on suitable and practical ways, such as selling of unattended animal fences to the merchants in the villages as a source of revenue, the communal – *talaig* – regulations have substantially intensified the present friction and conflicts between the farmers and the pastoralists.

Recommendations

From the above conclusions, the following recommendations are proposed for consideration by the concerned bodies in order to minimize conflict between the stakeholders and thus contribute to peacebuilding in Darfur:

- The development and improvement of agricultural and livestock sectors through scientific means to increase productivity and thus decrease friction and conflict between the stakeholders in the two sectors.
- The abolition of communal grazing in the agricultural areas throughout the year. Abolishing the *talaig* regulations would mutually benefit both the farmers and the animal breeders. This, in turn, would initiate and encourage fodder cultivation and thus develop the animal production substantially.
- Camel raising has become very expensive and with a very low growth and return. Camel nomads should be encouraged to shift from camel breeding to sheep raising which is more feasible.
- The far north underground water aquifers (*Um Byada, Wadi Hawar* basins) should be used through the drilling of boreholes, and used for fodder production for the pastoral communities.
- Monitoring and stopping the Chadian camel herders from entering Darfur should be considered, because they are the main cause for most of the conflicts between the pastoralists and farmers in Darfur.

References

Conference, Meleet, North Darfur. 28-29 September 2002. *Peace for Development Proceedings*.

Conference, Kuttum. 2002. *Participatory Research Approach between the Farmers and Pastoralists about Customary Natural Resource Use*.

Jebel Marra Rural Development. 1985/1989. *Monitoring and Evaluation Reports*.

Western Savanna Development Project. 1986/1989. *Monitoring and Evaluation Reports*.

Agricultural Planning Unit (APU) Ministry of Agriculture and Natural Resources, North Darfur State. 1991-2003. *Harvest Assessment Reports*.

Ministry of Agriculture, Darfur region. 1982-1991. *Range and Pasture*.

SC. UK North Darfur. 1991-2003. *Food and Agricultural Bulletins*.

Tully, Dennis. 1987. *Culture and Context in Sudan: the Process of Market Incorporation in Dar Masalit*, Albany, N.Y., State University of New York Press.

Combating
Desertification:
Experience from
Umm Kaddada District
in Eastern Darfur

By

Hassan Abdalla Al Mangouri

Introduction

THE residents of the Umm Kaddada area in Eastern Darfur, like most others at comparable latitudes within the Sudanese-Sahelian Belt, previously practised a form of farming which enabled them to restore soil fertility. Now they are suffering from a self-perpetuating cycle of drought, deforestation, shortened fallow period, less soil fertility and declining crop yields. Their future wellbeing depends largely on breaking this cycle.

Before the current destructive cycle began, farmers grew millet, sorghum, groundnuts, sesame and watermelon, all adjusted in a rotation of 3-10 years which also allowed for the practice of gum Arabic production. This practice allowed the farmers to earn a cash income by selling the gum Arabic for export, while simultaneously benefiting from the nitrogen-fixing and soil-retaining properties of the trees, which restored the fertility of the soil. The advent of drought conditions in the area, aided by population growth, increased local demand for fuel and pressure for greater food production, which has led to decreased periods of fallow and hence to the removal of the vegetation cover and the degradation of the top soil layer on the qoz sands. The ultimate result of this process is the reactivation of the consolidated sand dunes and the enhancement of the moving sands with all its ecological and socioeconomic consequences.

Decreasing income has forced the local population to resort to other alternatives which in turn had speeded up the process of degradation. At the same time the prevalence of drought conditions in the northern parts of Darfur and Kordofan has pushed into the area under study pastoralists in huge numbers, searching for pasture and water, thus intensifying the ongoing process of desertification.

These changing circumstances, however, have received for a long time no corrective at all. The remoteness of the area and its harsh environmental conditions has sheltered it from any attempts to measure the scope and magnitude of the deterioration. The sporadic attempts to counteract desertification and deforestation made in other parts of the country since the early forties have not affected this area. Even the Master Plan to combat desertification in the Sudan which was prepared jointly by the Ministry of Agriculture, the US National Research Council, the United Nations Environment and Development Program, and the Food and Agriculture Organisation (FAO) did not include this area. The resulting Desert Encroachment Control and Rehabilitation Program (DECARP) did not operate in this area, despite its substantial contribution to the gum Arabic production. None of its three sub-projects, sand dune fixation, shelterbelt, and gum belt restocking, has been implemented in this area.

The present paper is concerned with some aspects related to the physical and non-physical environment of the Umm Kaddada area in Eastern Darfur. The work

is an outgrowth of research on environmental changes as caused by prolonged drought conditions and the irrational interference of man. It is a joint effort of the IES (Institute of Environmental Studies) of the University of Khartoum and Clark University in the USA. It was prepared for the United States Agency for International Development (USAID). It is part of the E.T.M.A. (Environmental Training and Management of Africa) Program in the Sudan. It covers one of several areas selected for resource inventory and monitoring research in the country.

This particular area is notable for its remoteness from the centre of development in Eastern Sudan and for its harsh environmental conditions. It is characterized by neglect, despite its unique historical, cultural and political background. Rapid changes, particularly in the last few decades, in the sphere of socio-economic life, have left their impact on the natural resources and the population dynamics. Accordingly the area is of great research interest in many respects.

Environmental Degradation in Eastern Darfur

The study has been conducted in three distinctive phases:

Phase One:

A resource inventory study to fulfil the following objectives:

- a. To pick up the indicators of change.
- b. To review the physical and non-physical components of the area in the past hundred years as a foundation and background to the present situation.
- c. Materials collected were presented in form of a Baseline Trend Analysis Report.
- d. The findings of this phase should be summed up, assessed, analyzed and displayed in the form of texts, maps, figures and tables, depicting the material and human factors relevant to the problem of environmental degradation in the area.
- e. The final report of this phase has to be concerned with three main stress points and spheres of inquires:
 1. The ecological structure of the area, i.e. classification of the area into different ecological units with different resource potentials.
 2. Land use inventory mainly form lands at imaging and area photos.
 3. Human ecology as an actual indicator of ecological degradation in the area, i.e. the assessment of human assets and constraints as well as human settlements and conditions of infrastructure.

Phase Two:

This phase was a monitoring of the physical factors and non-physical components of the area.

It is essentially based on phase one to study the indicators selected therein.

Data for this second phase was mainly collected through field research conducted by scholars with different academic background (climatology, meteorology, geology, ecology, socio-economic, hydrology, rural development, demography, geography, sociology and economics).

Data collected through this phase was analyzed and assessed by the different field investigators.

Together with phase one this phase presented the main features of change and transformation, as a step in measuring the magnitude of environmental degradation with the aim of formulating future plans to restore the situation in the area. These two phases were in no way contradictory, but rather complementary to each other, reflecting the situation in the past, the changes taking place at the time of study (mid-eighties) and the transformational potentialities and possibilities of the future.

Phase Three:

It was mainly concerned with the organisation and conducting of a regional seminar at Umm Kaddada town, the centre of the area under study.

The idea was to disseminate the knowledge gained through the previous phases among the local inhabitants.

The meeting of specialists from different academic disciplines at central and regional level together with the people actually affected within the area is intended to add new scientific perspectives to the investigation of degraded and desertified areas. The results of this phase were mainly composed of the proceedings of the seminar and a proposal formulated by the participants for the future development of the area. It is worth mentioning here that each part of this research project was primarily a separate operation with its own approach, methodology, results and conclusions.

The research project was a joint effort between the Institute of the Environmental Studies (IES) of the University of Khartoum and Clark University of the USA. It was prepared for the US Agency for International Development (USAID). It was part of the E.T.M.A. Program in the Sudan. It covers one of the eight areas selected for resource inventory and monitoring research in the country.

Reasons for interest in the study area were, among others, summarised as follows:

- Remoteness of the area from the centre of development in Eastern Sudan.
- Harsh environmental conditions of the area.
- Political and socio-economic neglect of the area by the central and regional governments.
- Uniqueness of its historical, cultural, economic and political backgrounds.
- Overwhelming nature of rapid change, particularly in the last few decades (impact on the natural resources and population dynamics).

The findings of the first phase revealed the following:

- Umm Kaddada area was continuously declining in importance, as far as its previous functional locations as a communications, trading and administrative centre was concerned.

Accordingly, the previous sedentary zone with its centre at Umm Kaddada was found to be shifting southward. Reasons for this shift could be summarized as follows:

- The decision of the British Administration, as early as 1930, to reduce Umm Kaddada to a sub-division of a central district administered from al-Fashir, must have had a bearing on its socio-economic development.
- The shifting of the transport route southward i.e. the previous transport route, passing through Umm Kaddada area from east to west shifted to the south, due to the declining importance of Umm Kaddada and the favourable environmental conditions in Southern Darfur.
- As a result of the shift of the transport route some settlements like Nyala and al-Da'ayn replaced Umm Kaddada as transport centres; the latter has been gradually pushed into a backwater.
- Another outcome of that shift was the trend towards out-migration from the area as one response of the population to the recent changes.
- Paradoxically, the movement of the people started at a time when water became available, thus the hypothesis that water availability as a key factor for development proved to be invalid in the case of Umm Kaddada.
- Having discovered all these factors, we attempted to use these findings as a basis for a feasibility study and to use the indicators picked out through this phase of study, namely— deterioration of environmental conditions, expressed in terms of climatic fluctuation; degradation of soil; removal of vegetation cover and enhanced desertification process; reduction in grain production, changing social organisation of the Berti tribe, adoption of new economic activities, availability of underground water and lack of surface water; recent developments in Southern Darfur and the shift of transport

zone southward — and to use these all for detailed and through studies to show how these factors had been working separately or together, to produce the ongoing situation in Umm Kaddada area at the time of study (mid-eighties).

The second step was to find out whether the ongoing situation was reversible or irreversible by forecasting the prospect of these indicators. The ultimate aim of all these stages of enquiry was to save and preserve the rest of the region's potential before it was too late.

This goal could only be achieved through intensive research in the region which should identify and analyze the most effective factors responsible for the degradation or upgrading of the region's socio-economic structure. The available data about this neglected part of the country could hardly permit any sort of monitoring programme, let alone planning for future development. The need for gathering current information about this region was becoming increasingly vital, especially in regard to the recent regionalization policy and the proposed development strategies for the whole country in general and Southern Darfur in particular.

We believed that the increased degradation processes of this region would affect adversely the development programmes in the whole Darfur province if it was only seen in the increased out migration and concentration of people in a few areas which still had rewarding potentials. In the longer prospect this concentration, if not duly avoided, or modified, would produce the same features prevailing in Umm Kaddada area at that time.

The ultimate aim of the proposed study in that area was not only to reverse the process of degradation in Umm Kaddada area, but to protect adjacent regions against that degradation.

Findings of the Field Investigations:

- The spread of desert-like conditions in the area of study had created a serious ecological imbalance, mainly caused by the recent environmental deterioration, in terms of decreasing amount of rainfall, as well as the rapid increase of human and animal population, particularly in the sixties and seventies of the last century.
- It was clearly shown by our investigations that aridity was an influential factor for enhancing degradation of soil, which in turn led to decreased land productivity, culminating in food shortage.
- The quick regeneration of the natural ecosystem under the persistence of man's impact was found to be difficult.

- The morph dynamic processes in the removal of the topsoil as caused by over-cultivation and over-grazing has reactivated the consolidated sand dunes, with the end effect of decreased crop production.
- The most far-reaching impact on the natural resources was found to be the practice of rain-fed millet cultivation. Population increase has led to the extension of cultivated areas beyond the climatically defined dry limit.
- Serious damage in the area was found to be caused not merely by pastoral nomads but also by sedentary cultivators, who usually combined rain-fed cultivation with sedentary animal breeding.
- Such damage was clearly seen in settlement surroundings in the form of bare surfaces with exhausted soils.
- Deterioration of the ecological resources in the more distant environs of settlements was found to be a product of deforestation through wood cutting for various purposes.
- The effect of the prevailing ecological imbalances was found to be a drastic decline of the basis of existence of the population. Despite this, the inhabitants of the area were still living in their home areas, unlike the case of other parts of Northern Darfur province. Only a numerically small number had responded by out-migration.
- Solutions to the prevailing problems became more difficult as deterioration of resources continued.
- Our recommendations to correct the situation were to a great extent in line with the recommendations given by F.N. Ibrahim (1980) for the whole of Northern Darfur.
- All areas beyond the agronomic dry limit should no longer be used for rain-fed cultivation. Instant regulated animal husbandry should be advocated and encouraged.
- In areas with still higher resource potentialities, precise knowledge of the soil productively and the dominant socio-economic conditions should be collected and made accessible for planners and policy makers.
- Improving livestock husbandry through a controlled use of the pasture, by accurately calculated land carrying capacity in terms of Livestock Standard Unit (L.S.U.) should be encouraged.
- Methods of improving pastures; reseeding and opening of new pasture, by ensuring the supply of controlled drinking water.
- The existing water stations should be relocated according to the carrying capacity of the pastoral areas, i.e. water pumping should be practised in rotation to assure rotation in pasture.
- Concentration of in-migrating nomads around water points for long periods should be strictly avoided.

- Some water points in places like al-Aris, Sangdanga, Abyad and Burush should either be closed or restricted to local consumption.
- New boring of wells should be regulated by the local authorities in accordance with Land Carrying Capacity (L.C.C.).
- Wood cutting in settlement surroundings for various purposes should be strictly avoided.
- The experience of Burush village in conserving trees in settlement perimeters through the efforts of the inhabitants themselves should be followed in all affected areas.
- Rehabilitation of the Acacia senegal tree (*hashab*) and its combination with millet were recommended as urgent measures to reconsolidate the reactivated sand dunes and to contribute to an increase in the farmer's income.
- Some areas should be conserved for at least five years (between Umm Kaddada, Burush, and Abu Humeira) before any cultivation practice continued.
- Limitation of wood cutting should go hand-in-hand with experimentation in energy-saving methods, such as introducing charcoal ovens instead of the commonly used open wood fires.
- Transportation, both collective and private, should be encouraged to bring dead trees from distant areas at an affordable price for urban consumption.
- Environmental education should be made compulsory at all levels. Teachers as well as students should be involved in conserving and rehabilitating the ecosystem. The example of El Sayed Abu Hamad, in El-Fashir, who engaged more than a thousand of his pupils in planting trees in the town perimeters, should be followed in the area.
- Planting and conserving of trees should be the duty of every individual in the area. Laws and incentives should be announced to ensure the continuation of programmes (food for work, for instance).
- There should be planning of the southern zone of rain-fed cultivated areas south of latitude 13 N to provide for seasonal population movements through expanded cultivated areas and increased land productivity in order to promote exchange between the northern zone of nomadic livestock breeding and the southern zone of rain-fed cultivation.
- This measure can only be undertaken through the improvement of the infrastructure and the enlargement of the market functions of the central towns in the transitional zone (Umm Kaddada, El-Fashir, Mellit, and Kutum).
- The Abandonment of cultivating in the *qoz* should be accompanied by development projects in *wadi* basins at local levels.
- Availability of underground water in the Nubian sand stone aquifers would assure continuous provision of water for irrigated agriculture particularly horticulture.

- The horticultural practices of Umm Burush by means of private shallow wells should be encouraged and guided by an agricultural extension programme.
- It was recommended that the potential of Khor Abu Udam and Khor al-Naim in the eastern part of the area thoroughly investigated and planned for development. In both locations, the seasonal flow of rainwater can be conserved and oriented toward irrigational purposes. Both crop production and fodder supplement were greatly needed in the whole area.
- The experience of Umm Ushush and Sag el Naam proved the inability of the public sector to run agricultural projects in the area.
- For this reason both private and cooperative ownership and management were highly recommended, encouraged to exploit the agricultural potential of the *wadi* basins.
- Proposed projects should adjust themselves more towards local demand and less towards the external markets.
- Larger projects like Sag el Naam and other projects in the southern part should help to act as a regulating factor in drought years, to keep millet prices within the purchasing power of the majority of the local inhabitants.
- In order to absorb the labour surplus from deteriorated agricultural areas, labour-intensive manufacturing and handicrafts were recommended to be encouraged, particularly among women.
- Availability of high quality raw material in the form of wool, leather, wood and palm leaves together with the inherited tradition of handicrafts in the area would favour expansion and improvement of manufacture.
- Last, but by no means least, the establishment of research and training centres was recommended, particularly for school-leavers, to investigate specific problems and to train local teams who can take over the work of desertification control in their native environment.
- Fortunately, for the affected areas, both the central government and the local decision makers had shown great willingness to encourage the implementation of all recommended measures intended for rehabilitation.

What was really lacking were:

- a) A dependable resource inventory for the whole region.
- b) Suitable and practical plans based on the actual ecological and socio-economic set-up of the area.
- c) Political will to adopt the measures recommended.
- d) Financial means to realize them.
- e) Peace — peace — peace.

This study and the seminar organized by the writer at Umm Kaddada town in mid-eighties were some of the steps being taken to ease the task for planners and decision makers at local and central levels.

Our study of this area had been concluded by stressing the fact that the natural resources in the area were seriously endangered and if no preventive and corrective measures (in the manner recommended above) were taken soon to rescue the ecosystem from complete deterioration, the whole area would come to a point of no return and the proper time would be missed forever.

Now twenty years have passed since the conclusion of that study and we are obliged to ask:

- a) Which parts of these recommendations have been realized and with what sort of results?
- b) Who attempted to realize it and how?
- c) What were the main handicaps and bottleneck that faced the realization of the recommended measures (ecologically, socially, economically and politically)?
- d) What were the changes occurring to the area throughout the last 20 years compared with database collected by our study?
- e) Has the area really reached the point of no return or does it still possess some potential?
- f) Is there any possibility of updating the information obtained through this study under the prevailing environmental, social, financial and political conditions?

References

- Bakhit, A.M.A. 1983. 'Desertification, Tehabilitation and Conservation: The Case of Western Sudan', *al-Tasahhur*, I, Khartoum, pp. 5-9.
- Bakhit, A.M.A. and Ibrahim, F. N.. 1982. 'Geomorphological Aspects of the Process of Desertification in Western Sudan' in: *Geojournal*,
- Barth, Fredrik. 1967. 'Economic Spheres in Darfur', in Raymond Firth (ed.), title? pp. 149-174.
- Ibrahim, F. N. 1984. *Ecological Imbalance in the Republic of Republic of the Sudan: With Special Reference to Desertification in Darfur*, Bayreuth, Germany
- Boudet, G. 1975a. 'Improvement of Pastures and Livestock Exploitation in the Sahel', *The Sahel Ecological Approaches to Landuse*, MAB Tech. Notes 1, Paris, pp. 89-97.
- Boudet, G. 1975b. 'Pastures and Livestock in the Sahel', *The Sahel Ecological Approaches to Landuse*, MAB Tech. Notes 1, Paris, pp. 29-34.
- Munzoul, Munzoul Abdalla. 1996. 'Subsistence Economy, Environmental Awareness and Resource Management in Um Kaddada Province, Northern Darfur State', *Managing Scarcity: Human Adaptation in East African Drylands*, edited by Abdel Ghaffar M. Ahmed and Hassan A. Abdel Ati, 127-139. Proceedings of a regional workshop, Addis Ababa, 24-26 August 1995. Addis Ababa: OSSREA.
- De Wall, Alexander. 1989. *Famine that kills. Darfur, Sudan 1984 - 1985*, Oxford, Oxford University Press.

Land Tenure, Land Use and Conflicts in Darfur

By
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Introduction

LAND tenure is the institutional framework within which decisions are taken about the distribution and use of land resources. It reflects the varied relationships of man to land. The actual structure varies with the status of the economy and society at a given time. Whatever the rules regulating the acquisition and the use of rights in land, the dynamics of the economy and society tend to modify these rules. Thus, land tenure is adapted to the economic and social conditions of the society. Through this process of adaptation, several forms emerged varying from traditional communal tenure, a feature of tribal societies, to private ownership, a feature of market exchange economies.

Hence, traditional communal tenure is not static, but it is constantly adapting itself to the changing social structure and technical and economic requirements of the society. It is flexible and allows progressive reduction in the number of right holders in a given piece of land as the result of social changes. Some years ago, there was no need for exact determination of land as there was plenty for everyone. It was only as pressure on land increased without sufficient incentive for intensification, as markets developed, as new crops were introduced and as human wants changed that interest in exclusive use became prominent. Hence, land use systems are the result of adaptations to tenure systems that influence the use of shared resources.

With these views in mind, this paper attempts to examine the evolution of land tenure in Darfur with the aim of identifying the forces that operate to create deviations from the traditional forms. It is asserted here that the traditional tenure in Darfur and land use forms have been considerably modified and adjusted to social and economic requirements through a natural and spontaneous evolution while, on the other hand, conflicts arise as the result of regulations put in place by the Government that are contrary to the traditional systems.

The Evolution of Land Tenure in Darfur

The land tenure systems in Darfur are the result of a long historical evolution and changing political, economic and social organisations. The present structures have their roots in the institutions and ways of life among the different tribal groups in the area. Each tribe acquired for itself a large territory of land (*Dar*). The *Dar* is regarded as the property of the whole tribe and the chief of the tribe is regarded as the custodian of the property. Land is allotted to every member of the tribe for cultivation purposes while unused land is left as a shared resource to be used by all the visitors (nomads).

The Darfur Sultans did not change the basic structure, but they introduced cer-

tain innovations called *hakura* (pl. *hawakir*) or landed estates that were recorded in written documents, *wathiqa al-tamlík*. This arose because high-ranking officials and army commanders were not given regular salaries. Instead, the Sultan granted them large estates, *hakura*, to collect taxes and dues, *ushur*, from cultivators to sustain themselves. Some prominent figures and religious men were also granted estates as a means of obtaining their support. These changes played an important role in shaping tenure arrangements. Land was used in political bargaining and to win the favour of prominent tribal chiefs and influential men. In nomadic areas, particularly Southern Darfur, communal ownership was preserved.

The colonial government was able to stop the growth of neo-feudalist class and restored the communal ownership. The colonial government began regulating land by a series of ordinances. In Darfur, where land was held communally, the policy was to avoid registration of individual rights. It recognized rights over land that were less than full ownership.

Hence, the policies recognized three forms of land tenure. These are:

1. Government lands with community rights.
2. Government lands with no community rights.
3. *Hawakir* (tribal or individual) and lease (license).

However, there was no demarcation between the three forms. But the tribal lands, *dars*, were demarcated and mapped.

Against this background of uncertainty in relation to the ownership of unregistered lands, the Unregistered Land Act of 1970 was passed. This Act brought about a drastic change in the concept of the ownership of unregistered land as 'all land of any kind whatsoever, whether unregistered, shall be the property of the government and shall be deemed to have been registered as such', (El Mahdi 1971). This Act gives the local inhabitants usufructuary rights. However, within these government lands (according to 1971 Act), customary tenure has been modified and adapted itself to suit the changing conditions.

At present, the forms of tenure practised during the colonial period are to a greater degree still practised, but with some modifications. Within the customary tenure, individuals exercise different rights according to established norms and customs. According to tradition, four scales of ownership exist:

1. At the communal scale, each tribe has a given land as a *dar*.
2. Within the tribal *dar*, there is the clan ownership with a known boundary.
3. At village level, there is the village land where each villager practises his private ownership, which is respected by all.

4. Unclaimed land, used as range land or allocated to 'strangers' (migrants) by the village head.

As a general rule, land allocated to any person cannot be withdrawn unless he/she leaves the village. Under such circumstances, the land abandoned by any person reverts to the village community to be allotted to someone else. In all cases, the owner of the land is free to hire out part of his land or dispose of it in the way he likes and after death, the land is inherited by his children or relatives.

The village head in carrying out his responsibilities is entitled to collect one tenth of the produce from food crops. This arrangement continued to be respected at the local level, but with an awareness of the legal aspects of landownership. According to the 1970 Act, all lands are the property of the government, but some cultivators, particularly migrants, refused to give it willingly. The abolition of native administration gave this attitude further momentum and helped to disrupt the long established customary system. Disputes were taken to civil courts to solve the problem of how to establish individual rights of use which does not amount to full ownership and to reconcile traditional claims with the established government policy. The process became more complicated when charter-holders (*wathiqa*) issued by the Darfur Sultans emerged in the form of certain individuals laying claim to large areas as their property.

The process of land tenure was further complicated as the result of drought and desertification, where migrants in large numbers moved southwards looking for agricultural land and pasture for their livestock. For many of the cultivators, they were able to obtain land to grow crops provided that they respected the traditional customs of giving one tenth of the crop to the Sheik. As their numbers increased, some started to look for authority over land. Hence there emerged a distinction between 'Land Sheikh' and 'Men Sheikh' (*sheikh anfar*).

Land Users and Tenure Systems

Traditional Farming

Despite the fact that traditional agriculture, particularly *qoz* cultivation, is visualized as small-holders subsistence form of land use, it is increasingly facing conflicts with other forms of land use. This is evident from the gradual increase in farm size and number of plots per household. This, in turn, has resulted in competition over land and a gradual shortage of land. Many factors have contributed, with varying magnitude, to this evident change in the traditional pattern. Most prominent of these factors are desertification, increased livestock population and increased de-

mands for food production. All these processes have ultimately resulted in tenurial and land resource – related conflicts in Darfur.

These relatively recent developments will undoubtedly have strong bearings on the stability of tenure system and land use patterns, particularly the water harvesting and spreading issue. Another factor, which is also expected to shape and reshape the land use patterns, is the close correlation between farm size and increased levels of aridity. Farm size and also plot numbers increase as aridity conditions increase.

Farmers Tenure System

Generally, the farmer's right to land is established by continuous actual use and cultivation. This well-defined tenure basis may reflect the fact that land has never been an issue of serious dispute in the history of this area. In other words, land has little value in the sense that unclaimed agricultural land was large enough so that it was not worthwhile to maintain long-term rights over it. However, there were some cases where individuals could establish control over land through the opening up of a new land by clearing and preparing it for agriculture. But generally, it was difficult to maintain rights if the land was left fallow for a long period.

The only effective way to exercise long-term ownership, is by allowing *hashab* to regenerate on the land and keep protecting it until it becomes a well-defined stand of productive trees. Such ownership is recognized because the occurrence of *hashab* adds to the value of the land in two ways. Firstly, it produces cash and secondly, it renews the fertility of the land.

Unfortunately, the *hashab* has almost ceased to regenerate naturally due to increasing rates of desertification. This has deprived the area of an excellent cash crop and a perennial form of land ownership.

Livestock Raising

As mentioned earlier, livestock raising in the area is mainly village-based as practised by the sedentary population or by nomads. Goats and sheep are the main livestock kinds raised by villagers. There are little management input from the owner's side. Animals are often left to graze in the vicinity of the settlement centre without proper tending and herding.

Another form of livestock raising is the nomadic pastoralist, operating on an open and vast grazing system which is mainly practised by visiting tribes. This form of raising has more or less, a well-defined identity and therefore has more interactions with other land users as will be discussed.

Pastoralists Tenure System

Seasonal stock movements in response to physical/biological and socio-economic factors are often associated with contacts, frictions and conflicts. This, of course, has led to some internal balancing mechanisms, particularly, those related to their social structure and tribal administration.

It is well documented that through time, the tribal or native administration has articulated itself and crystallized as a powerful organ and institution that caters for the interest, sustenance and stability of the nomadic system. In this system, pasturelands and water sources are communally owned and utilized. They are not appropriated by individuals and pasturelands are always defined as uncultivated lands. Beyond the seasonal routes also, no land is reserved or allocated for grazing. However, such specific land allocation exists only for cultivation, which clearly indicated the tenurial bias against the nomadic pastoralist. Within the *Dar* (home-land), tribal sub-divisions, clans and villages have preferential grazing right within their territories.

One mechanism for maintaining this preferential grazing right is through the control or access to water sources (this is only possible and feasible if they were established by the community rather than by the government as in case of water yards). Often, customary rules and native administration are the main mechanism and institution regulating the tribal use and right on the seasonal routes. However, these rights could be lost if such routes are abandoned or intercepted by sizeable community or government project.

Hashab (Gum Arabic)

Traditionally, gum production from *hashab* tree constitutes an important source of cash to the farmers. The integration of *hashab* plantations within the traditional agricultural rotation system is an old practice in the area. This is done by cutting *hashab* trees when their yield declines, and replacing them by crops for 3-4 years. In the meantime, gums from those trees becomes ready to be tapped when crop productivity started to decline, signalling the decline of soil fertility. Trees continue to be able to be tapped for 8-13 years, and again farmers start cutting these trees to grow crops in their place. The *hashab* crop rotation goes in this sequence. However, this pattern of land use began to lose its importance in many areas. Conflicts often were associated with hashab and grazing damage caused by herders trespassing.

Hashab Tenure System

Hashab ownership in the area constitutes the core of all other forms of land rights. In fact, other ownership rights are often judged in relation to *hashab* plantations. They form the maximum security of tenure within the customary set of rules.

Hashab tenure system can be traced back to the ancient *hakura* system, whereby individuals, clans and tribes were given land concessions by the Darfur Sultans. As will be discussed later, the *hakuras* were used and managed according to certain arrangements within the native administration set-up in Darfur. Through time, the *hakura* system has acquired firm tenure recognition by the people. Slightly different from other lands, *hashab* areas can be transferred by inheritance, buying and selling.

Water Spreading Tenure

This is a relatively recent pattern of farming that has emerged as one of the coping mechanisms with the drought conditions in Darfur. This newly emerging form of agriculture is confined to the alluvial soils of the *wadis* and *khors*. However, as a new form or pattern, it interacts with other resource users in many aspects:

- conflicting with pastoralists access to watering and grazing along the *wadis* and *khors*.
- conflicting with small-holder farmers particularly, traditional tobacco or *tombak* producers.
- conflicting with small farmers who traditionally exploit the residual moisture of the *khors* for vegetable production.

The status of tenure as regards the lands under water spreading activities is not comparable to other land users' tenure systems. In fact, there is a great deal of confusion within the customary rules when dealing with tenure issues and conflicts of the water spreading land.

Formal Recognition

Formal recognition by the government as regards the customary tenure systems in the area is not well-defined. Registration of land as a formal procedure of government recognition is not applied in Darfur.

Lack of such formal recognition and registration of land on permanent basis is considered by many proponents as advantageous and very much compatible with

rural conditions in the country. They advance the following arguments:

- Difficulty of keeping and sticking to one piece of agricultural land without shifting in cases of dwindling soil fertility. This point is particularly valid in sandy soils and *qoz* lands;
- Limiting the mobility of individuals and groups, particularly the landless and nomads. Traditionally, customary procedures and communal ownership of the land accommodate and cater for such mobility;
- In case of permanent ownership of the land through formal registration, the native administration powers will be weakened and will lose the respect and commitment of the people;
- Complication and cost of formal land registration may impose unnecessary burden on the rural poor.

However, there are some arguments in favour of land registration. Supporters of land registration in rural areas usually consider the following:

- Due to increasing trend of land commercialization in agricultural areas, particularly alluvial soils, owners and transactions should be supported by formal land registration documents.
- Land registration documents are often officially required for eligibility for credit and agricultural facilities.
- Small-holders will be protected from any future displacement in case of large development projects.
- Permanently-secured ownership of land is more likely to induce and encourage rational use of land by the farmer.
- Modern statutory legal system is more consistent, fair and free from any tribal bias than the native more or less tribal administration.

These points of argument in favour of land registration are more suitable to be considered in cases of water harvesting and water spreading schemes in Darfur.

Recommendations

General

This paper asserted that the traditional tenure and land use forms has been considerably modified and adjusted according to social and economic changes taking place at the local level. Conflicts arise as the result of outside intervention contrary to the traditional systems. It is found that both formal and informal institutions

co-exist at the local level where each performs roles and functions related to usufruct rights.

- It is clear that the existing traditional institutions are still viable. By not relying on existing rules and bodies (be they informal, traditional, or customary authorities), we will be in danger of undermining ways of controlling resources rather than strengthening them. By not being concerned with legitimate ways of exercising power by existing land management institutions and resorting to the creation of new structures, which, if their objectives are not shared by the local people, may be incapable of playing their intended role efficiently.
- Rural communities in Darfur, continue to operate through institutions and resource management systems which are capable of reconciling social needs with ecological conditions.
- Land tenure conflicts and user rights are often resolved at village level with the help of customary institutions.
- The intercommunity relationship as used to be practised through precautionary conferences, where all stakeholders (leaders) meet to discuss possible emerging issues and affirm previous decisions, is an important approach and forum for the settlement and prevention of conflicts.
- Decentralization policies and the federal system are expected to introduce new dimensions to land management. It is important to look for ways to make smooth transition through negotiated management of natural resources.

Pastoralists (nomads)

- Pastoralists, although they have less security of tenure, still exercise rights of use over certain areas which are controlled by several authorities. Because of this, there is need to coordinate their movements with communities that have rights of access to resources.
- Right of access to forage changes over the course of the year (rainy and dry seasons). Assigning particular areas for nomads may have a negative impact on mobility and need to cope with variations in fodder production and to make the best use of pasture land.
- In order to meet the needs of the herders, it is important not to oppose traditional rules and local strategies and allow the smooth evolution of indigenous land management systems.
- The land commission to be established – after final peace agreements – must follow an open approach and consultation with actors in order to find sustainable solution to the problems of land management.

References

Mustafa M. Suleiman and Yagoub A. Mohamed. 1995. *Land Tenure Issues in Water Harvesting: Case Study, North Darfur*, unpublished Report.

Yagoub A. Mohamed. 1975. *Some Spatial Aspects of Rural Change in Western Sudan*, unpublished Ph. D. thesis, University of Liverpool.

Hamid A. Mohamed. 1994. 'Traditional Institutions and Resource Management in Darfur', in Medani M. M. Ahmed (ed.) *Indigenous Knowledge for Sustainable Development in Sudan*, Sudan Library Series 20.

Yagoub A. Mohamed. 1996. 'Drought and the Need to Change: the Expansion of Water Harvesting in Central Darfur', in Chris Reij et. al (eds.) *Sustaining the Soil: Indigenous Soil and Water Conservation in Africa*, Earth scan Publications.

El Mahdi S. Mohamed. 1979. *Introduction to the Land Law of the Sudan*, Khartoum University Press.

Bernard Bonnet. 2000. *Shared Management of Common Resources: Strengthening Local Skills*, IIED issue paper no. 94.

Indigenous
Institutions and
Practices Promoting
Peace and/or
Mitigating Conflicts:
The Case of
Southern Darfur of
Western Sudan

By

Adam Azzain Mohamed

Introduction

ACCORDING to the 1993 population census eighty-six percent of the Darfur Population lived in the rural areas, with modes of living being either traditional agriculture or livestock rearing. Competition between farmers and herders is increasingly becoming acute, leading on many occasions to violent conflicts. Two factors have been responsible for aggravating the conflict situation in the region. One of them is lack of development, which has kept the region at the stage of traditional or semi-traditional society. In such a society, individuals and groups rely on communal solidarity for the provision of material needs and protection (see Palmer 1980).

The government institutions that cater to the protection of people's life and property either do not exist or are inadequate to do the job. Identity groups tend to rely on their communal institutions for sustenance and wellbeing. The image of the 'warrior man' develops spontaneously to protect one's community or to attack other communities. On the other hand, women are assigned the role of arbiters of man's conduct. Among the Arab nomadic groups, the *Hakkama*, which means literally the arbiter of conduct, is a singer who composes songs encouraging her people to go to war and fight to the death (see Mohamed 2004). The relationship among local communities has mostly been characterized by hostility, lack of trust and predisposition to go to war against one another.

The other factor, leading to inter-group conflicts, is pastoral nomadism as a mode of living for a sizable number of the rural population. Not only would the livestock trespass onto farmlands, but also the nomadic people themselves are predisposed to engage in raiding and fighting with other communities, particularly with settled farmers. In his *Muqaddima* (Introduction) Ibn Khaldun describes very vividly the attitude and behaviour patterns of the nomadic groups he personally observed in North Africa at the time of his writing (see Rosenthal 1958). Ibn Khaldun goes to the extent of attributing the rise and fall of leaderships and kingdoms in North Africa to wars in which the nomads were the main actors.

In fact, it is not only the Arab nomads who are predisposed to go to war. Many analysts would regard nomadism, *per se*, as related to raiding and violent behaviour. Many of them would make the point that even the 'Great Wall of China' was built to stop the nomads from attacking the settled farmers.

In the Sudan, the nomadic segments of the population are to be found in several places, although increasingly they are becoming settled farmers. Particularly important for our discussion are the nomadic groups that are to be found in two ecological zones: the first zone is the semi-desert that extends all the way from the River Nile in the Sudan to Ennedi Mountains in the present day Chad republic. This belt has been and still is occupied by camel nomads of different groups of Arabs and non-Ar-

abs. In the past they had been involved in raiding and counter-raiding against one another and against settled farmers (see Beck 1996). It took the colonial government considerable time and effort to control them and prevent them from attacking one another or attacking the settled farmers (see Beck 1996).

The other ecological zone is the one extending from the White Nile in the Sudan to Lake Chad. This belt is a rich savanna, suited for raising cattle and is occupied by the *Baqqara*, i.e. the cattle-owning people, who are mostly Arabs. Observers make the point that nomads in this belt are increasingly becoming settled farmers and only a small number of them continue to keep herding as a means of livelihood (see Braukamper 2000). Darfur region has long strips of the two ecological zones, and hence, a sizable number of its population is still nomadic.

Bashar (2003) found that out of the thirty-nine major tribal conflicts that took place in Darfur during the period 1923-2003, the nomadic groups were involved in twenty-nine of them, a fact which has been confirmed by Mukhtar (in Mohamed and Wadi 1998) and Takana (in Mohamed and Wadi, 1998). Violent tribal conflicts in the Darfur region, therefore, cannot be adequately explained without reference being made to pastoral nomadism as a mode of living in the region.

However, because Darfur is now a war-torn region, one should not jump to the conclusion that it has always been like that and that it had no heritage of peaceful coexistence among its different groups. In fact, the region had enjoyed an exceptionally peaceful coexistence, for at least the period following its annexation to the rest of Sudan in 1916 and up to 1956, the end of the foreign rule. Prior to that time and following it the region has been marred by all types of ethnic and tribal conflict. The colonial government in Darfur (1916-1956) needed to arrange for only two conferences to resolve conflicts. The first was in 1924 between the Rizayqat cattle nomads and the Dinka, their neighbours to the south. The second, in 1932, was between the camel nomads of northern Kordofan, the Kababish and the Kawahla. and their neighbours in northern Darfur, the Zayyadiyya, Berti and Meidob. The conference was held in Umm Gozain, a border area between the two provinces (see Bashar 2003).

By contrast, following the declaration of independence in 1956, and up to now, inter-group conflicts and subsequent reconciliation conferences to resolve them have become the rule rather than the exception, resulting in an average of 1.5 conferences per year. In fact, 6 reconciliation conferences were held in 1991 alone. No attempt will be made here, however, to explain these striking increases in the frequency of conflicts and reconciliation conferences to resolve them. Rather I would refer the reader to Mohamed (2002, 2004).

One main factor needs to be mentioned though: the philosophy of governance has much to do with the phenomenon. Notwithstanding the fact that the British, who ruled the Sudan (1898-1956) were colonizers in the first place, and they were

evidently committed to the basic human rights of protecting the life and property for their subjects. They were also concerned with the eradication of slavery that was still practised in the Sudan at the time. They worked relentlessly to subdue nomads and stop them from attacking one another or raiding settled farmers (see Beck 1996).

Indigenous Institutions and Practices Promoting Communal Peace

As traditionalism and nomadism tended to threaten peaceful coexistence among the rural communities, local communities have developed their own mechanisms that helped to promote peace and/or mitigate conflicts among the rural population. In July 2003 research was conducted in Nyala, the capital city of southern Darfur State, to learn about indigenous institutions and practices of peace-building and the results they had in doing so. The following institutions and practices were identified:

1. Institutions

- the 'Sufi' Order, or *tariqa*.
- the Quranic school, i.e. *khalwa*.
- the political party.
- the *judiyya*, i.e. the mediation.
- the tribal leadership (Native Administration).
- tribal festivals.

2. Practices

- intermarriage.
- brotherhood (friendship).
- exchange of gifts.
- naming children after friends.

Those institutions and practices serve as cross-cutting ties for local communities of different tribal and ethnic origins, resulting into the practical promotion of peace and/or mitigation of conflict, as the ensuing discussion will illustrate.

Sufi Order

Sufi orders are religious brotherhoods that helped to develop feelings of brotherhood. They evolve around holy persons in whose spiritual magnetism and righteousness the followers strongly believe. Sufi orders, commonly known as *tariqas* are numerous in the Sudan. In the Darfur region the Tijani *tariqa* has the largest body of followers. The Ansar Mahdist sect has also a large number of followers.

The *tariqa* serves as a cross-cutting tie in the sense that it attracts followers of different ethnic and local backgrounds. A feeling of brotherhood and togetherness develops among them, and they will be greatly influenced by their religious leader's teachings to do the right things. A devoted Sufi follower would normally place his or her religious identity above that of the tribe or ethnic origin, hence, they are unlikely to get involved in inter-communal warfare. It is against their school teachings. On the contrary, *tariqa* followers can develop their personal friendships into general friendship and intermarriage. Sufi leaders would normally be expected by parents and communities to conduct marriages between men and women of the order.

Quranic School - the *Khalwa*

The Darfur region has a long tradition of sending children of different ethnic and local backgrounds to Quranic schools, which are widespread in the region. The schools, locally known as *khalwa* or *masid*, are administered by holy men who have learnt the Koran by heart. They teach their students to learn the Koran by heart too. *Khalwa* attendants will include male and female children, but the male students will normally come from distant localities and, hence, they are called '*Muhajirin*' i.e. emigrants. Just like the Sufi school, the *khalwa* community also enhances the development of strong bonds and friendships among *khalwa* students, which may also lead to intermarriages and symbiotic relations among families of different ethnic origins.

Political Party

In rural Sudan the political party was the first modern civil society institution to emerge with large numbers of followers. In the past, political parties were closely related to the two main religious sects, i.e. the *Ansar* and the *Khatmiyya*. The *Umma* party and the Unionist party are the major ones with a large number of followers in the rural areas. They are closely related to the *Ansar* and *Khatmiyya* sects, respectively. Until the 1986 democratically contested elections, the *Umma*

party had the strongest support in the Darfur region. Although party members do not necessarily have the same strong religious bonds as *tariqa* or *khalwa* followers, members of political parties still have strong ties among themselves, particularly among those attached to the sect. Political parties still function as a melting-pot for followers of different ethnic and parochial backgrounds.

The *Judiyya* or Mediation

The *judiyya* is a widespread system of managing conflict in rural Sudan. Whenever conflicts are imminent or developing, volunteers will immediately step in and play the role of mediators. They are normally the elderly, the wise, the impartial, who are versed in local customs and traditions. In Darfur they are called the *ajawid* (Singular, *ajwadi*). The *judiyya* institution works to prevent conflicts, manage them, resolve them and sometimes transform the conflict situation.

Over the course of time the *judiyya* acquired sanctity in Darfur. No one would dare to refuse *judiyya* as a mechanism for conflict resolution or fail to honour its rulings. To fail to be committed to *judiyya* ruling, one subjects one's self to unaffordable consequences, such as a communal boycott, in a society where communal solidarity is indispensable. One would be labeled as *kassar khawatir* – one who breaks a communal norm. The *judiyya* can be initiated by the *ajawid* voluntarily or by the parties in a conflict, who ask for mediation.

In Darfur the *judiyya* predated the colonial era (1916-1956). But the colonial power reformed the system when it reformed the tribal leadership, giving it the label of Native Administration. Native administrators have since become the main body of the *ajawid* or mediators. When violence erupts among local groups, tribal leaders, whose followers are not party in the conflict, will act as the *ajawid*. The system worked perfectly well during the colonial era. The prevailing political philosophy, with its concern for the protection of life and property, greatly helped native administrators to be successful in ending conflicts.

When conflicts are within groups or between individuals, the traditional *judiyya* (in which native administrators are not involved) remains the mechanism for the settlement of disputes. The native administrators would normally sanction such *judiyya* rulings. Up to now the traditional *judiyya* settles most disputes between individuals and groups at the grassroots level. When conflicts are larger in scale, involving more than one tribe, a government-sponsored *judiyya* would be arranged, in which tribal leaders who are not party to the conflict would play a dominant role in reconciliation. (See Mohamed 2002).

Native Administration, i.e. Tribal leadership

Native administration is one of the most controversial issues in Sudanese politics. Even at its very inception in the early 1920s, it was not welcomed by leaders of the nationalist movement. It was perceived as a government creation that was meant to serve the purposes of colonial rule. Following the end of foreign rule, radical elements in the political parties, including elements within the conservative parties, have continued to be hostile to native administrators (see Bakheit in Hasan 1985).

Opponents of native administration are probably justified in their attitude to the system. The colonial rule really wanted to rely on native administrators rather than on the hawkish leaders of the nationalist movement. On several counts they were preferred to the urban educated elite. For example, they were the ones who had been entrusted with the implementation of the so-called Indirect Rule i.e. rule by Sudanese natives. Secondly, when a version of a local government was founded in 1937, councils were dominated by appointed tribal leaders. Again, when legislative institutions were created at the national and regional levels, their members were predominantly native administrators, their families or sympathizers. Some of them continued to dominate the political scene in the rural areas even after the foreign rule came to an end in 1956. A resolution was passed by the October radical government (1965) for the dissolution of the system. Then the May Revolution regime, starting 1969, had actually dissolved the system in 1970, abolishing its topmost leaders, i.e. the *nazirs* and other chiefs.

One aspect of native administration that has often been overlooked by its opponents is its role in maintaining law and order in the rural areas. It is the best and cheapest institution of governance, when communities are at a traditional or semi-traditional stage of development, particularly in a country as vast as the Sudan. Following the weakening of the system by the October caretaker government's resolution and the actual dissolution of the system in 1970, lawlessness prevailed among the rural communities, particularly in Darfur. People took the law into their own hands and started using force for the settlement of disputes. To a large extent the proliferation of tribal and/or ethnic violent conflicts in the Darfur region may well be attributed to the weakening and untimely dissolution of the system of native administration.

The period, 1916-1956, was notable for peaceful coexistence among groups in Darfur. Tribal leaders were not only able to maintain law and order within their communities, but they were also able to establish symbiotic relations among different ethnic groups. They were instrumental in nurturing communal institutions and practices that contributed to the promotion of peaceful coexistence among local groups (e.g. organising tribal festivals, taking wives from other groups, exchanging

valuable gifts with their counterparts, establishing friendship ties with one another and forbidding their followers from abusing others by calling them names or insulting them by referring to their demeaning tribal origin) (interviewing Al-Bashar, July 2003).

Tribal Festivals

One of the important peacebuilding institutions that the colonial government established in Darfur was the tribal festivals. Such festivals were arranged periodically. Different tribal groups would take part in what was called *arda* – i.e. procession – whereby tribal horsemen marched in front of crowds of spectators, to demonstrate the relative sizes and well-being of their riding animals (chiefly horses), their armaments and their preparedness for defending their communities, if need be. The *arda* was meant to serve several purposes: Firstly, to deter thieves, robbers and invaders in general. Secondly, the tribal festivals were to create occasions of public entertainment, at a time when means of public entertainment (such as the cinema) had not yet been introduced. Thirdly, and more importantly, tribal festivals were occasions for tribal leaders to meet and solve inter-group conflicts (by forming joint courts).

Following the *arda*, horsemen would go back to their homelands and leave their leaders to get together and solve tribal problems. They would review the implementation of old decisions and look into fresh problems. When the festival was held in Nyala, the capital town of the district, the tribal leaders looked for tribesmen who left their homelands and came to the city and confronted problems of urban plight. Such tribesmen and women would be helped to go back home and be reintegrated in their original communities. The list would include inmates jailed in Nyala prison (Assammani, 2003).

Tribal festivals were organised in Id El-Ghanam for the tribes to the west of the district; in Abu Salaa, in the southern part; in Sibdu, to the east and in Nyala for the town's population. Tribal festivals were continued for quite some time after independence and then they were discontinued.

In general, during the colonial era (1916-1956) institutions and practices leading to intercommunal peace were greatly encouraged at both the central and local levels. Locally the tribal leaders were instrumental in observing and encouraging such practices. In most cases the leaders set the example for their followers. Friendships were widespread among them, with gifts frequently being exchanged among them. Often time this led to intermarriages among tribal leaders. For instance, Abdul Rahman Bahr Eddeen, the sultan of the Masalit tribe, was married to the daughter of Mahmud Musa Madibbu, the *nazir* of the Rizayqat tribe. The Masalit sultanate is located in the extreme western part of the Darfur region, while the

Rizayqat homeland is at the extreme southeastern part of the region. In general tribal leaders would normally take more than one wife, some of whom would normally be from outside their kin groups.

Rarely were there tribal leaders who had no friendships with other tribal leaders, with whom they exchanged valuable gifts or for who they named their children. *Nazir* Ibrahim Musa Madibbu of the Rizayqat tribe was particularly famous for being harsh on his tribesmen who talked contemptuously of the tribal origins of individuals and ethnic groups (Assammani, 2003). As a result, symbiotic relationships flourished among leaders and also among followers. It made it easy, for instance, for groups affected by climatic hardships to move to and live peacefully among other ethnic groups, because the leaders of the two groups would contact one another and arrange for this. Inter-group conflicts were therefore very rare.

Symbiotic and friendly relationships among individuals and identity groups were not without their advantages. Three examples will illustrate how such institutions and practices are related to conflict reduction. Two of them related to friendship. The third is the result of intermarriage. The first two examples were told by Al Hur Daood Khairallah (a retired educationist) and the third was by Huda Abdalla Mastur (a leading figure in women associations).

According to Khairallah, following the crushing of the Abd Allah al-Suhaini uprising in Nyala in 1922, which led eventually to his defeat and death, the government authorities decided to impoverish his tribe, the Qimr, by taking away their animal wealth. The Bani Halba were neighbours and friends of the Qimr. Having heard of the impending plan to plunder the Qimr, they decided to take away the Qimr livestock and keep them for them until the crisis was over. When the government authorities invaded the Qimr homeland, they found only some small animals. When the crisis was over, the Bani Halba restored the Qimr's livestock to them.

Khairallah related another episode which also illustrates the result of friendship ties between the two tribes. It was rumoured that the Qimr were preparing for an assault on the Bani Halba because of an unfounded allegation that the Bani Halba were planning to raid the Qimr. The Bani Halba *nazir* summoned all his tribesmen, who had friendships with the Qimr tribesmen, and asked them to visit their friends and find out about the matter. They came back to tell him that the allegation was unfounded, and that there was no such preparation on the part of the Qimr to attack the Bani Halba.

The third episode was told by Huda Abdalla Mastur. Mrs. Mastur's mother is an Arab lady, who was married to a non-Arab tribesman in western Darfur. Some Arabs came to the village where the mother was living with her husband, and rustled some livestock. The village tribesmen were out chasing the robbers. Mrs. Mastur's mother insisted that she would accompany the men. When the perpetrators were reached and were ready to attack the cattle owners, she advanced to them and told

them that she was an Arab kin and that she was ready to get killed before any of her husband's relatives were killed. 'Otherwise', she told them, 'restore the stolen livestock peacefully', which they did and the crisis was averted.

Over the course of time almost all peace-making institutions and practices have been weakened or abolished, mostly by misguided decisions or neglect from the centre. Following the October uprising (1964), the caretaker, radical government passed a resolution for the dissolution of native administration (see Bakheit in Hasan 1985). The resolution was not implemented because the conservative government that succeeded the caretaker government ignored it. Then in 1969 another radical government came to power and it actually dissolved the system in 1970, unseating almost all top leaders. It created chaotic conditions in the rural areas, such as Darfur, as tribesmen having had access to firearms took the law into their own hands and started resolving their disputes by the use of force.

The tribal festivals also disappeared with the abolition of native administration. The *khalwa* and the Sufi *tariqa* lost their magnetic force, as intertribal conflicts gave prominence to tribal loyalty rather than to religious affiliations. With the establishment of authoritarian rule, the popular political parties became the target of attack by such governments. They were banned and their leaderships impoverished and followers were either bought or forced to become supporters of the authoritarian rulers. It goes without saying that intermarriages, friendships, exchange of gifts etc. all went away with the changing of the traditional values through policies of the central governments.

Darfur region is now undergoing what has been described as the worst human crisis at the time, because of onslaughts by tribal and ethnic groups. However, attempts to reinstate peaceful coexistence are underway. It prompts asking the question of whether such indigenous institutions and practices might be reintroduced if and when peace is restored for the region. Some prerequisites are highlighted in the conclusion and recommendations.

Implications

The content of the paper is based on empirical data collected from a field visit to Nyala town in July 2003. The findings are significant on two counts. They are important at the African regional level, as many African communities are marred by inter-communal conflicts, with no agreed upon solutions. An African conference was held in Arusha (Tanzania), during the period (21-23 January 1998) to look into African experiences with conflict mediation. The conferees concluded, unfortunately, that such experiences were not available in a documented form (see Othoman 2000). The Nyala field research could lay the foundation for Sudanese experiences with promoting peace and/or mitigating conflicts that might be of value to African

researchers and statesmen. A bigger project of data collection for experiences in all local communities will lead to documenting valuable experiences that Sudan might offer to other African communities. At the Sudan level, the postwar era, which appears imminent, needs the undertaking of empirical research conducive to sustainable peace. Indigenous institutions and practices, promoting peace and/or mitigating conflicts, need to be identified and reinstated, so that they help in consolidating, building and preserving lasting peace.

Conclusion and Recommendations

It has been argued that in rural Sudan some valuable indigenous institutions and practices could be delineated and shown to have been capable of promoting peace and/or mitigating conflicts; that the prime time for such institutions to flourish was during the colonial era of 1898-1956 (in Darfur, 1916-56). This had been the case because the colonial government had a vested interest in pacifying the subjects through such institutions. Further, it was genuinely committed to human rights at their basic level i.e. the protection of life and property and the settlement of disputes. It was also committed to the eradication of slavery.

Following the attainment of political independence in 1956, however, little regard has been given to such human rights. The overriding concern for most national, central governments has become the building of political support at all costs. It made central governments adopt misguided policies that greatly weakened indigenous institutions and practices. By weakening native administration in particular, many other institutions and social values have also lost their vitality and sanctity, e.g. tribal festivals, the *judiyya*, the Sufi *tariqa*, the Quranic school etc. as well as social practices, which the tribal leadership used to give impetus and support. In general, because of misguided central policies, war culture has replaced peace culture in areas such as Darfur. Attempts are now underway to restore peace to the war-torn region and this raises the challenge as to whether cross-cutting ties that held the region together during the colonial era (1916-1956) can be successfully restored.

Some policy recommendations might be suggested in a bid to put the region back where it was at the colonial time. It is vitally important that a milieu in which a peace culture can flourish must be created, namely, a genuine governmental belief in human rights for all citizens, including, of course, the rural population. It is also vitally important that decision makers consider ways and means of protecting individual life and property, with social attention to be paid to people in the rural areas.

As it is unlikely, for reasons of cost, for any central government to directly control the local communities through modern government machinery, a form of

'indirect rule', i.e. tribal leadership, becomes a necessity for at least the present time in remote areas such as Darfur. As the system proved to be successful in the past, there is no reason to believe it will not succeed now in areas where tribalism and tribal values still predominate. However, for reintroducing an effective tribal leadership, several steps need to be taken:

- the system must be depoliticized i.e. not to be used to bring support to the Khartoum Government.
- its role must be principally focused on maintaining law and order and the settlement of disputes among followers, and not taking side with the Khartoum Government, thus losing the political neutrality among the disputants.
- tribesmen possessing firearms must be disarmed.
- native administrators will need to receive material and moral support from the government for the role they play on its behalf, and not for the political gain that they are bringing to the government of the day.
- native administrators, who become outstanding in the new role, must be materially and morally rewarded by the government.

The role played by the other institutions, i.e. the Sufi tariqa, the khalwa, the judiyya and the political party, in cementing communal ties must also be acknowledged, hailed and encouraged.

References

Bakheit, Jaafar M.Ali. 1985. 'Native Administration in the Sudan and its Significance for Africa' in Hasan, Y. Fadl ed., *Sudan in Africa*, the University of Khartoum Press, University of Khartoum.

Bashar, Zuhair Mohamadi. 2003. *Mechanisms for Peaceful Coexistence among Tribal Groups in Darfur* (in Arabic), an MA thesis, IAAS, University of Khartoum.

Beck, Kent. 1966. 'Nomads of Northern Kordofan and the State: From Violence to Pacification', *Nomadic Peoples*, N.38.

Braukamper, Ulrich. 2000. 'Management of Conflicts Over Pastures and Fields Among the Baggara Arabs of Sudan Belt', *Nomadic Peoples*, vol.4, Issue I.

Othoman, Haroub. 2000. *Summary Report, Learning from Conflict Resolution in Africa*, Arusha , 21-23

Mohamed, Adam A. 2002. 'Intergroup Conflicts and Customary Mediation: Experiences from Sudan', *African Journal on Conflict Resolution*, No I.

'The Rezaigat Camel Nomads of Darfur Region: From Co-operation to Confrontation', *Nomadic Peoples*, (forthcoming).

Wadi, A.I. 1998. *Perspectives on Tribal Conflicts in the Sudan*, IAAS, University of Khartoum.

Palmer, Monte. 1998. *Dilemmas of Political Development, An Introduction to the Politics of the Developing Areas*, 2nd ed., F.E. Peacock Publishers, Inc.

Rosenthal, Frantz. 1958. *Ibn Khaldoon, The Muqqadimah*, 3 vols., Pantheon Books.

Interviewees

1. Southern Darfur State Governor (Wali), Salah Ali Al-Ghali.
2. Major general (police) Attaib Abdul Rahman Mukhtar, Minister of Social Welfare, S. D. State.
3. Ahmed Al-Sammani Al-Bashar, Fellata tribal leader (Nazir).
4. Al-Nur, Daood Khairallah, retired educationist and native of Bani Halba.
5. Huda Abdallah Mastur, member of S.Darfur State's, Women Association.
6. Instructors and students of Nyala University, attending a discussion forum 23.7.2003.

Darfur Between Conflict Systems: An Abstract

By

Eltayeb Hag Ateya

Introduction

WHILE in the Sudan protracted conflict seems to be heading towards the end of one of its major manifestations, the bloody war in the South, another equally murderous and dehumanising conflict erupts in Darfur. In spite of the numerous social, cultural, economic and political differences which characterise the two regions, they still share many of the root causes that are behind each of the conflict situations.

While the deeply entrenched causes affect other regions of the country as they did in the South or now in Darfur, the particularity of each sub-conflict e.g. the East, is incumbent on root-causes particular to the region and other varying secondary or incidental causes. In analysing the conflicts in the Sudan, due consideration needs to be given also to structural as well as external factors, namely the impact of the global conflict system, and as we argue, systems.

Academic research as well as practical politics did not fail to identify the obvious relationships and linkages that justified describing or grouping adjacent national conflicts into a regional or sub-regional conflict system. The progressive departure from the classic perception of conflict as being either internal or external resulted in abandoning the dichotomous approach developed by the advocates of the Realist Doctrine of international relations. In Africa, arbitrary borders that split indigenous populations between states inevitably blurred the internal nature of conflicts and justified the intervention of the co-host of the same ethnic group, in case of involvement in disputes or conflicts.

The notion that conflicts within a state's boundaries are strictly a domestic affair holds no water and is no longer acceptable to regional organisations [AU] or the international community at large. Scholars who resent vehemently 'internationalisation' of conflicts are to realise that though they are progressively depriving individual governments of absolute authority and control, that they are rendering them entirely visible. Conflict analysis precedes conflict management. The methodology, approach and techniques of management depend, among other things, on the characteristics and linkages of the overall conflict system. Resolving a conflict in the absence of those considerations is virtually futile.

The Sudan conflict is integrally included in the Horn of Africa conflict system. The interlinkages and shared causes and sub-processes are evident. The Horn of Africa conflict system includes Somalia, Ethiopia, Eritrea, Djibouti and some would include Kenya and Uganda. To relate the Darfur conflict sub-system to the global Sudan crises and conflict system is the first step towards understanding the impact the Horn and other conflict systems have on Darfur. Sudan is included in another African conflicts system namely the Greater Lakes conflict system. The interlinkages, shared causes and direct impact on the war in the South are obvious. The

many interventions that took place in or for Sudan exemplify those links.

The Greater Lakes conflict system includes as far as its front vis-à-vis the Sudan a northern flank, namely Uganda, Kenya, the Democratic Republic of Congo (DRC) and Rwanda. Through the intermediary of the Central African Republic (CAR) and internally the State of West Bahr El Gazal, the Lakes conflict system tentacles managed to reach Darfur.

Tracing the origins of the Darfur conflict requires investigating the historic, social, cultural, economic and ethnic aspects of the conflict that would reveal from a Darfurian standpoint, and perspective, the nature and extent and effect of the external factors. The geographical, natural and ecological traits of Darfur reveal the nature and importance of those factors. They form primordial linkages, especially with the Chadian conflict system. Analysing in detail the relations that bind Darfur to Chad explains an important dimension of the Darfur crisis.

The contemporary aspect of those relations is essential. The historic aspect is equally telling and it shows how sheer ignorance and or a policy of deliberate concealment and deception resulted in losing many an opportunity, and led to the unprecedented aggravation of the horrors and suffering. The reciprocal impacting effect of the relationship between the Chadian conflict and the Darfur conflict shaped the modern day state of affairs in both regions. This is to be considered as a continual cause for alarm since significant political change in Chad is always instigated, originated and led from Darfur. Change of regimes in Chad since Tombalbaye to the current president Deby, passing by Maloum, Ouédi, and Habre all came to power through Darfurian intermediaries and were fatally weakened and toppled through the same.

The role of Libya is tremendous as far as the relationship between Sudan and Chad is concerned. The Libyans learned the lesson that the fate of Chad is determined in Darfur. Tracing the brutal Libyan/Chadian encounter with its emotional, political and military remnants necessitates intensifying the search for global solutions.

Border disputes between the Central African Republic and Sudan do not call for much alarm, none the less CAR's own conflicts spill over into Chad and the Sudan and will eventually add more trouble to Darfur. Armed banditry, illicit smallarms trade, drug trafficking etc. will be dealt with effectively if candid authorities cooperate.

Is another conflict system that includes CAR, Chad, Sudan and Libya in the making and who else does it include? Are states like Niger, Cameroon and DRC part of this system and why? And where does the epicentre of this system exist? Is it, given the shifting nature of epicentres, now in Darfur?

References

- Harir, S. 1993. 'Arab Belt' Versus 'African Belt': Ethnic - Political Conflict in Darfur and the Regional Cultural Factors, in Harir, S. and Tvedt, T. (eds). 1993. *Short-Cut to Decay: The Case of The Sudan*, James Currey, London.
- Harir, S. 1992. Militarization of Conflict, Displacement and The Legitimacy of The State: A Case From Darfur Western Sudan ,CDS, Bergen, Norway.
- O'Fahey, R. S. 1980. *State and Society in Darfur*, C. Hurst and Company, London.
- Prunier, Gérard. 2005. *Darfur: the ambiguous genocide*, London: Hurst & Company.
- Suliman, M. (1993), 'Civil War in the Sudan, From Ethnic to Ecological Conflict,' *The Ecologist*, vol. 23 No 3.
- Mohammed-Salih, M. A. 1989. Ecological Stress, Political Coercion and Limits of State Intervention; Sudan in Ecology and Politics (ed), Ornas and M. A. Salih, SIAS, Sweden.
- Voll, John O., and Sarah Potts Voll. 1985. *The Sudan: Unity and Diversity in a Multicultural State*. Boulder, Colorado: Westview Press.

Environmental
Degradation and
Conflict in Darfur:
Experiences and
Development Options

By

Abdalla Ahmed Abdalla

Introduction

THE Darfur Region lies in the northwestern part of the Sudan, neighbouring Libya, Chad and the Central African Republic. The region includes the states of North, South and West Darfur. Each state is administratively divided into several localities amounting to nineteen in all three states. Each state is governed by a governor appointed by the president of the Sudan and assisted by a number of state ministers. Other state governmental structures include the judiciary and the police. *Mahaliyas* are governed by commissioners (*mutamad*) appointed by the governor of the state and he is assisted by a local council. The native administration which was abolished in 1970 has been recently revived.

The population of Darfur which is largely rural (eighty percent) was estimated in 1983 at about five million. However, there are indications that the population has increased and with increasing mobility due to immigration from neighbouring countries and displaced people due to deteriorating economic conditions and increasing tribal conflicts. The populations are made of the same forty to fifty major tribes in addition to another fifty smaller groups. The tribes are identified as Arab, who are predominantly pastoralists herding camels in the north and cattle in the south, and non-Arab groups (*zurqa*) who are largely sedentary cultivators of crops and livestock, semi-nomads.

Land in Darfur is divided into tribal domains (*hawakir*) known as Dars, largely in the hands of the larger tribes, defined by customary law. This situation, together with pastoralism, entailing seasonal movements crossing tribal Dars and farms of the sedentary population, has resulted in conflicts over the pasture resources and has intensified during the last two decades and has risen to national and international dimensions.

The physical infrastructure including limited farm roads, railways and power supply is generally poor, resulting in difficulties in travel, transport of goods and services.

The social services, including water supply, health and education are also generally inadequate together with shortage of and low capacity staff in health and education sectors. The states are facing difficulties in undertaking their responsibilities in law and order and development activities due to poor material and trained manpower resources and the conflict.

Ecology

Extending from the north to the south, the climate of Darfur varies from the hot arid and semi-arid to the wet semi-tropic areas in the southern part. Rainfall varies from zero in arid part and gradually increases southwards reaching 800mm annually

and reaches 1000mm in Jabal Marrah highlands.

Accordingly, the vegetation cover increases in a southward direction. The variation in the climate – rainfall, soil and temperature, resulted in six ecological zones with varying farming and livestock systems and livelihoods. Ecologically Darfur suffers from environmental variability, recurrent droughts, grain shortages, desertification, and biodiversity loss and water poverty in parts of the Region.

Soils and water resources

Soils

Soils in Darfur are predominantly (sixty percent) sandy (*qoz*) generally suitable for crops like *Dukhun*, groundnuts, watermelon and sorghum. There are some scattered gardud soils (clay) and gravel rock soils. It is estimated that less than fifty percent of the cultivable land is used. There are, for example, about twenty-four million *feddans* suitable for cultivation in South Darfur of which only 7.2 million are utilized for rainfed farming, in addition to seventy-six thousand *feddans* in horticulture. Sandy soils suitable for agriculture in North Darfur amount to about seven million *feddans*, but less than half is farmed. Clay soils in North Darfur amount to about two million *feddans* with only ten to fifteen percent utilized. Land tenure presents a major constraint for agriculture in Darfur.

Water

In addition to rainfall, the water resources in Darfur include the *wadis* and groundwater. There are in Darfur 12 identified *wadis*, 3 in North Darfur and 9 in South Darfur, with a total amount of discharge of 993.8 million cubic meters. Water from the *wadis* is collected by dam and hafirs and used for human and livestock consumption. There is some limited water harvesting. The long-term strategy (2000-27) targets some three hundred thousand *feddans* to be irrigated from *wadi* water estimated at 0.9 milliard cubic meters.

The groundwater in Darfur is found in the Nubian sandstone aquifer and others estimated at 2,400 billion m³. There is a large potential of groundwater to irrigate one million five hundred thousand *feddans* in Sag Al Naaim, Wadi Hawar etc...

Water development in Darfur is constrained by inadequate evaluation of the water sources (Hydrology and geology), inadequate financing and the sandy nature of the soil with high rate of evaporation which limits water harvesting, in addition to the geo-morphological changes caused by the recurring droughts.

In spite of these constraints, the water program for Darfur 2000 – 2003 reveals notable progress (Table 1).

Table (1)

Water program for Darfur 2000 – 2003

(Source: National Water Corporation)

No	State	Wells				Suds		Hafris		Million M3	Cost Million Dinar
		Deep Wells	Deep Well Reh	Wells Shad-ows	Shal-lows Wells Rehab	New Sud	Sud Reh				
1.	N. Dar-fur	41	97	314	300	13	13	17	5	20	3970
2.	S. Dar-fur	46	50	302	250	8		9	3	30	2913
3.	W. Dar-fur	41	25	203	230	7		17	-	10	2369
Total		128	172	819	780	28	13	43	8	60	9252

Development Experience in Darfur

In spite of some notable rural development efforts in Darfur, the natural resource potential remains unlocked. On the contrary, the natural resources have been subject to degradation and poverty and food insecurity has increased.

The development schemes implemented in Darfur have been largely confined to rural agricultural development. These schemes include the following:

Jabal – Marrah Project for Rural Development

The Jabal-Marrah project covers four *mahaliyas* in West Darfur State comprising a total area of 1.5 million *feddans* on the higher and lower slopes of Jabal-Marrah. The population in the project area is estimated at 1.8 million people with the vast majority depending on farming, livestock rearing and forestry. The pilot farms were started in a prepared area of one hundred thousand *feddans*, marking the implementation of the early stages of integration. The rural development project was developed in stages from 1967 and aimed at providing services to some seven thousand four hundred families. The components of the project include extension, adaptive research, community development agricultural input, rural roads, training

and monitoring and evaluation. The farmers were able to increase their agricultural productivity, social services were improved and several rural roads were constructed and the water situation was markedly improved, thorough the digging of wells and the installation of irrigation pumps. Staff of the project was trained in addition to five thousand farmers' leaders. The project generally has a favourable impact on the livelihood of the people in the early phases in the project area. However, the extension funding started to decline in 1994 and, accordingly, a rural development corporation was established to search for funding to sustain the project. A Jabal Marrah Company for roads was created but soon disappeared and the project management was transferred to the state of West Darfur. The deterioration of the project continued, and in 2002 the president declared the project as a national project within the domain of the Federal Ministry of Agriculture financed from the Ministry of Finance development budget.

Western Savanna Development Project (WSDP)

The Western Savanna Development Corporation was enacted in 1978 and by 1982 funding was secured from IDA, ODA, and Saudi Fund for Development and the Government of Sudan (GOS) amounting to twenty-six million dollars for the first phase, which ended in 1984. Phase II started in 1986 funded by IDA, IFAD, ODA and GOS allocating forty-six million dollars. The project served an area of one hundred and thirty-five square kilometers within South Darfur State.

The project aimed at unlocking the economic potential and improving the welfare of the people through enhancing supply and security of food and water and conserving and protecting the natural resources from degradation. Specifically, the project was aiming at increasing grain production and improving farming systems, livestock improvement, and improved soil and water management. The project's activities included adaptive research, extension and water settlement, veterinary services, livestock management, range and pasture improvement.

The project achieved reasonable success in regard to its set objectives. However, as a number of problems were encountered, including lack of credit and inadequate crop protection, low level of agricultural technology and shortage of inputs and problematic procurement procedures; the project is now dormant.

Umm Kaddada Area Development Scheme

The Umm Kaddada Area Development Scheme was started in 1988. It is one of several Area Development Schemes implemented jointly by the GOS and UNDP, aiming at increasing the capacity of the poor to sustain their livelihoods through self organisation, access to micro-credit, agricultural services and inputs and the increased capacity of the poor to sustain their livelihoods.

The Umm Kadada ADS falls within the semi-desert zone with an annual rainfall

ranging from 150mm the north and 450mm in the south and with sandy soils, sparse vegetation of cacia and traditional farming with livestock raising. Local economies suffer from frequent droughts. Water supply sources are limited to deep bore holes. The resources in the area are marginal. The ADS covered an area with a total population of eighty thousand distributed in fifty-one villages. The expansion area of the ADS has one hundred and forty-nine thousand indigenous population and thirty-seven thousand internally displaced people (IDP) in 5 villages

The project area is characterized by poverty, limited resources potential, fragile production systems and poor social services, which require a combination of physical and human factors for development.

The ADS has generally laid the basis for a workable integrated development model. The project succeeded in the mobilization of the village populations in different institutional set-ups. However, the project is not yet self-reliant.

North Darfur State is committed to continue the project upon termination of UNDP funding.

IDD EL FURSAN ADSs (ADSIF)

Located in South Darfur State Idd EL Fursan ADS covers nine rural localities. Some seven hundred thousand to a million people of different tribes live in the project area. The population is a mixture of sedentary, semi-sedentary and nomadic groups. Agriculture and livestock are the principal sources of livelihood.

ADS/ F aimed at the development of community based organisations working through development committees at the Rural Council level. The main activities included *sandug* financing.

Development Strategy

In view of the environmental hazards, the poor capacities for natural resources management, inadequate information on natural resources, depletion of forests and biodiversity, desertification and land degradation, and social protection inadequacies, land tenure problems, tribal conflicts and the urgent need for accelerated rapid economic growth and poverty reduction, in view of all these considerations the priority development options would centre around sustainable accelerated agricultural growth and improved social services.

- Enhancing natural resources management through strengthening information base, land reform, conservation measures and sustaining the natural pastures.
- Raising agricultural productivity through improved farming systems- improved technologies.
- Increase resource use efficiency.
- Improving agricultural production systems by providing inputs and support agricultural services like credit.
- Invest in rural infrastructure – roads, power, and drinking water.
- Improve social services.
- Increase investment in agriculture.
- Improve marketing system.

All these strategies may be adopted through sustainable integrated rural development projects, guided by pro-poor policies and centred on improved natural resources management for increased sustainable agricultural productivity, improved rural infrastructure, reliable services including extension, credit and crop protection in addition to improved social service and better marketing channels.

References

- Ibrahim, Abdel Rahman Abbakar. 1999. *The Development of the Livestock Sector in the Sudan: A Case Study of Public Policy Analysis*. Social Science Research Report Series, no. 12. Addis Ababa: OSSREA.
- Alderman, H. and Paxson, C. H. 1992. 'Do the Poor Insure: A Synthesis of the Literature on Risk and Consumption in Developing Countries', Working Paper 1008, Agriculture and Rural Development Department, The World Bank.
- Ibrahim, F. N. 1984. *Ecological Imbalance in the Republic of the Sudan: With Special Reference to Desertification in Darfur*, Bayreuth, Germany
- Buchanan-Smith, M. and Mohammed, M. I. 1991. Regional Policy Food Insecurity: The Case of Darfur, Western Sudan Ministry of Finance, Report, Khartoum, Sudan
- Babiker, Mustafa. 1996. 'Management of Aridity: Water Conservation and Procurement in Dar Hamar, Western Sudan.' In *Managing Scarcity: Human Adaptation in East African Drylands*, edited by Abdel Gaffar M. Ahmed and Hassan A. Abdel Ati, 107-126. Proceedings of a regional workshop, 24-26 August 1995, Addis Ababa, Ethiopia. Addis Ababa: OSSREA.
- Ali, Ali Abdel Gadir. 'Structural Adjustment Programmes and Poverty Creation: Evidence from Sudan.' *Eastern Africa Social Science Research Review* 8, no. 1 (January 1992): 1-21.
- Keen, David. 1991. Targeting Emergency Food Aid: The Case of Darfur 1985, in Maxwell, Simon, ed. *To Cure all Hunger*, IT, Exeter, U.K.
- Tobin, I. N. 1985. 'The Effect of Drought Among the Zaghawa of Northern Darfur,' *Disaster*: 9, 213-23.

Conclusion

CONCLUSION

THE collection of papers presented here has two main themes, environmental degradation and ethnic conflict in Darfur. The former theme has profound implications for both farmers and herders; the latter is an ongoing reality in Darfur. The causal relationship between the two themes has yet to be fully explored, but it evidently exists. This is an area that requires further research.

One issue not directly addressed in the papers presented here but which has increasingly come to the fore is the question of land ownership and rights to land in general. Some nomadic groups argue that they are disadvantaged, in contrast to settled communities, because they do not have clearly-defined land rights. In the estimation of the present writer, land and land ownership will remain crucial to the resolution of the conflict in Darfur.

A final comment: the present collection of papers underscores the necessity for much more research. Darfur is, environmentally and ethnically, a very complex region that defies simple categorisation. Before the long-term and short-term problems of Darfur can be resolved, much more needs to be known about the region.

R.S. O'Fahey

Glossary

GLOSSARY

Ajawid	elders
Arda	parade; procession
Baqqara	cattle nomads
Dar	tribal territory
Dukhn	millet; pennisetum typhoideu
Fariq	nomad camp
Feddan	area of land; 0.420 hectares
Gardud	soils formed near the base of hills by the weathering of rocks
Hafir	man-made pool
Hakkama	poetess; singer, especially among cattle nomads
Hakura/hawakir	landed estate granted by the sultans
Hashab	acacia; acacia senegal
Janjawid/janjaweed	nomad militias; bandits
Khalwa	Quranic school
Khor	riverbed
Manzalla	nomad camp
Massar	passage way for livestock between cultivated area
Mokhamus	area of land, approximately 10 square meters

Murahilin	nomadic militia
Nazir	chief of nomadic tribe
Qoz	sand-dune; soil type common in Darfur
Seeniya	grazing area for livestock
Talaig	communal grazing land
Ushur	tax
Wadi	riverbed
Wathaiq tamlik/wathiq tamlik	land charter from the sultans
Zaribat hawamil	unattended animal fences
Zaribat al-hawa	airfences

A Darfur Timeline

A DARFUR TIMELINE

- c. 1200-1300** A Daju state in the area southeast of Jabal Marrah.
- c. 1500-1600** A Tunjur state located in northern Jabal Marrah and Jabal Si. The identity of the Tunjur has yet to be established.
- c. 1650** The emergence of a Fur state onto the plains west of Jabal Marrah. The first historical ruler of the Keira Fur dynasty was Sulayman Solongdungo “The Arab” (but also with the meaning “red man”).
- 1700-1750** A series of wars between the Keira state and their western neighbours, Wadai.
- 1751-86** Reign of Muhammad Tayrab. Expansion east of the mountains. Tayrab conquers Kordofan; the Darfur state now larger than present-day Nigeria.
- 1791-92** Establishment of a permanent capital at El-Fashir.
- 1821** Kordofan conquered by the Egyptians and annexed to the Egyptian Sudan.
- 1850-60s** Darfur a major trading partner with Egypt: a series of largely futile campaigns against the cattle nomads.
- 1874** Battle of Manawashi, which marks the final stage in the conquest of Darfur from the south by the slave-trader, al-Zubayr Pasha al-Mansur. Darfur incorporated into the Egyptian Sudan.
- 1874-82** Resistance to Egyptian rule by a series of Keira “shadow sultans”.
- 1882** The Mahdist revolution comes to Darfur.
- 1893** The last “shadow sultan”, Ali Dinar b. Zakariyya, surrenders to the Mahdists. He is taken to the Mahdist capital, Omdurman.

- 1898** On the eve of the battle of Omdurman, in which the British destroy the Mahdist army, Ali Dinar and a group of Darfur chiefs race back to Darfur. The Darfur Sultanate is re-established.
- 1916** Conquest of Darfur by the British; Ali Dinar killed.
- 1921** Revolt of faqih Abd Allah Sihayni in Nyala; the last Islamic messianic revolt in Darfur.
- 1922** Consolidation of Indirect Rule in Darfur.
- 1930-50s** Heyday of "Indirect Rule" in Darfur.
- 1956** Independence of the Sudan.
- 1966** Formation of the Darfur Development Front; alliance with the al-Sadiq al-Mahdi wing of the Umma Party.
- 1972** The beginning of the dismantling of the "Indirect Rule" system.
- 1985-6** Drought and desertification begin to make serious inroads in northern Darfur.
- 2003** Formation of the Sudan Liberation Army/Front (SLA/M).
- 2003** Formation of Justice and Equality Movement (JEM).
- 2003-5** Protracted conflict at various levels throughout Darfur.

Bibliography

BIBLIOGRAPHY

Adam Azzain Muhammad & al-Tayyib Ibrahim Wadi, eds. 1998. *al-Niza'at al-qa-baliyya fi 'Sudan* [Tribal Conflicts in the Sudan], Institute of African and Asian Studies, University of Khartoum.

Adam Azzain Muhammad, ed.. 2002. *al-Tanmiyya, miftah al-sallam fi Darfur* [Development, the Key to Peace in Darfur], Centre for Peace and Development Studies, University of Juba.

Adelberger, Joerg. 1990. *Vom Sultanat zur Republik. Veranderungen in der Sozialorganisation der Fur*. Stuugart: Fritz Steiner Verlag.

Assefa, H. 1996. 'Ethnic Conflict in the Horn of African Myth and Reality', in K. Rupesinghe and V. Atchikov (eds.), *Ethnicity and Power in the Contemporary World*, U.N University Press, Tokyo.

Ahmed, A. M. & Harir S. 1982. *Sudanese Rural Society: Its Development and Dynamism*, (Arabic text) DSRC University Khartoum Press, Khartoum.

Ahmed, A. M. 1992. 'Rural Production Systems in the Sudan: A General Perspective', in Doornbos, C. (ed), *Beyond Conflict in the Horn*, ISS, The Hague.

Africa Watch. 1990. 'The Forgotten War in Darfur Flares Again', *Report*, London.

Bernard Bonnet. 2000. *Shared Management of Common Resources: Strengthening Local Skills*, IIED issue paper no. 94.

Babiker, Mustafa. 1996. 'Management of Aridity: Water Conservation and Procurement in Dar Hamar, Western Sudan.' In *Managing Scarcity: Human Adaptation in East African Drylands*, edited by Abdel Gaffar M. Ahmed and Hassan A. Abdel Ati, 107-126. Proceedings of a regional workshop, 24-26 August 1995, Addis Ababa, Ethiopia. Addis Ababa: OSSREA.

De Wall, Alexander. 1989. *Famine that Kills. Darfur, Sudan 1984 - 1985*, Oxford University Press, Oxford.

De Wall, Alexander. 1990. 'Emergency Food Security in Western Sudan : What is it for?', in Simon Maxwell, *To Cure all Hunger*, IT, Exeter.

El Mahdi S. Mohamed. 1979. *Introduction to the Land Law of the Sudan, Khartoum*, Khartoum University Press.

Hamid A. Mohamed. 1975. 'Traditional Insitutions and Resources Management in Darfur', in Medani M. M. Ahmed (ed.) *Indigenous Knowledge for Sustainable Development in Sudan*, Sudan Library Series 20, Khartoum.

Fukuki, K. & Markakis, J. 1994. *Ethnicity and Conflict in the Horn of Africa*, James Curry and Ohio University Press, Oxford and Ohio.

Harir, S. 1993. 'Arab Belt' Versus 'African Belt': Ethnic - Political Conflict in Darfur and the Regional Cultural Factors', in Harir, S. and Tvedt, T. (eds.) (1993) *Short-Cut to Decay: The Case of The Sudan*, James Currey, London.

Harir, S. 1992. *Militarization of Conflict, Displacement and The Legitimacy of The State: A Case From Darfur Western Sudan* ,CDS, Bergen, Norway.

Ibrahim, Abdel Rahman Abbakar. 1999. 'The Development of the Livestock Sector in the Sudan: A Case Study of Public Policy Analysis' *Social Science Research Report Series*, no. 12. Addis Ababa: OSSREA.

Ibrahim, Fouad N. 1984. *Ecological Imbalance in the Republic of the Sudan, with references to Desertification in Darfur*, Bayreuth.

Johnson, Douglas. 2003. *The Root Causes of Sudan's Civil Wars*, Oxford: James Currey.

Keen, David. 1991. 'Targeting Emergency Food Aid: The Case of Darfur 1985', in Maxwell, Simon *To Cure all Hunger*, IT, Exceter, U.K.

Keen, David. 1994. *The benefits of famine: a political economy of famine in south-western Sudan, 1983-1989*, Princeton University Press, Princeton.

Markakis, J. 1991. *Environmental Stress and Security in the Horn of Africa*, Sigruna, Sweden.

Mohammed-Salih, M. A. 1989. *Ecological Stress, Political Coercion and Limits of State Intervention; Sudan in Ecology and Politics* (ed), Ornas and M. A. Salih, SIAS, Sweden.

Morton, James. 1992. 'Tribal administration or no administration: the choice in Western Sudan', *Sudan Studies*, 11.

Mustafa M. Suleiman and Yagoub A. Mohamed. 1995. 'Land Tenure Issues in Water Harvesting: Case Study, North Darfur', unpublished Report.

O'Fahey, R. S. 1980. *State and Society in Darfur*, C. Hurst and Company, London.

O'Fahey, R. S. 2006. (forthcoming) 'Has Darfur a future in the Sudan?' *The FletcherForum of World Affairs*, Tufts University, Boston, 30/1.

O'Fahey, R. S. & M.I. Abu Salim. 1983. *Land in Dar Fur*, London: Cambridge University Press.

O'Fahey, R. S. & Spaulding, J. L. 1974. *Kingdoms of the Sudan*, Methuen, London.

Phillipson, David W. 1985. *African Archaeology*, Cambridge University Press, London.

Prunier, Gérard. 2005. *Darfur: the ambiguous genocide*, London: Hurst & Company.

Suliman, M. 1992. *Civil War in the Sudan: the Impact of Ecological Degradation*, ENCOP publication No.4.

Suliman, M. 1993. Civil War in the Sudan, From Ethnic to Ecological Conflict, *The Ecologist*, vol. 23 No 3.

Theobald, A. B. 1965. *Ali Dinar, Last Sultan of Darfur: 1898-1916*, Longman, London.

Tobin, I. N. 1985. 'The Effect of Drought Among the Zaghawa of Northern Darfur', *Disaster*: 9, 213-23.

Tothill, J.D. 1948. *Agriculture in the Sudan*. London: Oxford University Press.

Voll, John O., and Potts Voll, Sarah. 1985. *The Sudan: Unity and Diversity in a Multicultural State*. Boulder, Colorado: Westview Press.

Mohamed, Yagoub A. 1975. *Some Spatial Aspects of Rural Change in Western Sudan*, PhD Thesis, University of Liverpool.

Mohamed, Yagoub A. 1996. 'Drought and the Need to Change: the Expansion of Water Harvesting in Central Darfur', in Chris Reij et. al (eds.) *Sustaining the Soil: Indigenous Soil and Water Conservation in Africa*, Earth scan Publications.

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Secretary-General Kofi Annan (second from left) meets with community leaders at the Zam Zam Internally Displaced Persons Camp, in the Darfur region of Sudan.

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