

**NATURAL RESOURCES AND THE RURAL
DEVELOPMENT CHALLENGE IN SUDAN: THE
CASE OF THE GREATER KORDOFAN STATES**

BY

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CHALLENGE IN SUDAN: THE CASE OF THE GREATER
KORDOFAN STATES**

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DECLARATION

Student Number: 4200-995-2

I declare that this thesis on **Natural Resources and the Rural Development Challenge in Sudan: The Case of The Greater Kordofan States** carried out in the Republic of Sudan and supervised by Professor Solomon Yirenyiboateng of University of South Africa is my own work.

The thesis has not been previously submitted in part or in whole to any other university for academic examination towards any qualification. It is my own work in design and in execution, and that all reference material contained therein has been duly acknowledged.



M. I. Mahdi Osman

1 February, 2018

Student Signature

Date

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ABSTRACT

This study is a contribution to the research projects in Africa that are concerned with the analysis of the various conflicts that currently face the continent. Political, ethnic, religious, cultural, and other forms of conflicts have increased in number over the past five decades. The academic community has been making its contribution to the understanding and resolution of the conflicts through its research projects. The contributions of the academic community are widely acknowledged in this regard.

This study is about those conflicts emanating from differences in the cultural interpretations of natural resources between crop farmers and nomadic herdsman. The example selected belongs to those conflicts, which are entrenched in the cultural practices of rural communities. These conflicts are unique, since most of them predate the political, economic, and ethnic-based conflicts, most of which have emerged since the colonial era. Understanding these types of conflicts thus constitutes an important area of the development process of countries such as the Republic of Sudan, which already has many conflicts to contend with.

The areas elected the North, South and West Kordofan States constitute some of the conflict hotspots of the Republic of Sudan in terms of the cultural-natural resource conflict dynamics. The understanding and resolution of the conflicts between the crop farmers and nomadic herdsman in the region have the potential to offer enormous benefits to the peace needed for the long-term development of Sudan. The objectives of this study were chosen purposely to

contribute to the research projects on the peace-conflict discourse of the Republic of Sudan. They were aimed at finding out how the cultures of the crop farmers and nomadic herdsman of the Greater Kordofan states explain the conflicts and the efforts of the Sudanese authorities to help address them.

The critical realist research approach has been selected as the framework for the study. This involved a number of steps. First, information on the nature of the current policies and plans of the government of Sudan to address the conflicts has been collected as one basic element of the challenge of development of the Greater Kordofan region. The challenge has been discussed in terms of the gap currently existing between the government's peace building plan objectives on the one hand and the actual outcomes on the other. Next, information was collected from the relevant stakeholders on the reasons for the persistence of the conflicts between the nomadic herdsman and the crop farmers despite the efforts on the part of the government at building peace between them. Generating information in this way led to the recommendation that the stakeholders identified in this study hold the key to the success of the attempts at building long-term peace between the crop farmers and the nomadic herdsman of the Greater Kordofan States. The recommendations of the study are based on the idea that opportunities always exist for the stakeholders to introduce positive change in their society.

Key words: Gap analysis, environmental management, livelihood-based conflicts, development policies and plans, social transformation, stakeholder analysis, critical realist research methodology, dialectics, peace-building mechanisms.

TABLE OF CONTENTS

DECLARATION.....	iii
ACKNOWLEDGEMENT.....	iv
ABSTRACT.....	vi
TABLE OF CONTENTS.....	viii
LIST OF TABLES.....	xvi
LIST OF FIGURES.....	xviii
LIST OF ABBREVIATIONS AND ACRONYMS.....	xxii
CHAPTER 1: INTRODUCTION.....	1
1.1 Problem statement.....	1
1.2 Modeling the layers that make up the conflicts.....	18
1.3 Situating government development policies and plans in the analysis of the conflicts.....	36
1.4 Background and context.....	50
1.5 Importance of the study.....	55
1.6 Research questions.....	59
1.7 Study objectives.....	59
1.8 Study objectives and the related concepts on the social transformation challenge.....	60
1.9 Concluding remarks.....	64
1.10 Definitions of key concepts.....	65
1.11 Limitations of the study.....	70
1.12 Organization of the study.....	71

CHAPTER 2: SOCIO-ECONOMIC PROFILE OF THE STUDY

REGION.....	73
2.1 Introduction.....	74
2.2 Economy and demography.....	72
2.3 History.....	75
2.4 General characteristics and prevailing livelihood systems.....	76
2.5 Governance issues.....	80

CHAPTER 3: LITERATURE REVIEW..... 81

3.1 Introduction.....	81
3.2 The reductionist problem.....	84
3.3 The environmental systems influences approach.....	86
3.4 The cultural influence approach to the use of natural resources...	88
3.5 The critical realist approach.....	91
3.6 The role of public policies and plans in conflict resolution.....	97
3.7 Assessment of conflict resolution policy effectiveness.....	102
3.8 The analysis of gaps: variations around a theme.....	104
3.8.1 The critical theory research procedure in the analysis of social challenges.....	106
3.8.2 The Pentagon model.....	108
3.8.3 The DREIC model of Bhaskar.....	110
3.8.4 The Hegelian dialectical approach to gap analysis.....	111
3.8.5 The MELD model and gap analysis.....	112
3.9 Concluding remarks.....	115

CHAPTER 4: CONCEPTUAL FRAMEWORK.....	118
4.1 Introduction	118
4.2 The independent existence of reality, stratification, open systems, and causality.....	119
4.3 Emergence in its various forms.....	121
4.4 The critical realist framework and the non-implementation of public policies and plans.....	124
4.5 Application of the four phases of the MELD model to the research on the conflicts.....	128
4.6 Concluding remarks.....	132
CHAPTER 5: RESEARCH METHODOLOGY.....	134
5.1 Introduction	134
5.2 Research design used and justification.....	137
5.3 The units of observation used and justification.....	140
5.4 Identification of the stakeholders used in the study and justification.....	144
5.4.1 Reconceptualization and causality issues.....	144
5.4.2 Sampling: the stakeholders used and justification.....	146
5.4.3 The nine stakeholders who provided the information for the study.....	154
5.5 The research instruments used and justification.....	157
5.6 The research questionnaires and the nature of information collected.....	159
5.6.1 Ensuring credibility, relevance, and reliability in the study.....	160

5.6.2	The nature of information collected under the themes addressed in the models.....	163
5.6.2.1	Information on the nature of the natural environmental systems..	164
5.6.2.2	Information on the cultural lenses for using the natural resources	164
5.6.2.3	Information as to how the conflicts have emerged from the various cultural lenses.....	164
5.6.2.4	Information on the nature of the government plans in place to address the conflicts and the achievements/impacts (1M of the MELD model).....	165
5.6.2.5	Information on what the stakeholders think contribute to the persistence of the conflicts and how they are reacting to those factors (2E of the MELD model).....	165
5.6.2.6	Information on the recommendations for addressing the factors contributing to the persistence of the conflicts (3L and 4D phases of the MELD model).....	166
5.7	Data analysis.....	166
5.7.1	The mixed methods.....	170
5.7.2	A geographical perspective on the conflicts.....	170
5.8	Limitations of the methodology.....	172
5.9	Concluding remarks.....	173
CHAPTER 6: STUDY FINDINGS.....		175
6.1	Introduction	175
6.2	The state of the natural environmental system in Greater Kordofan.....	178

6.3	The natural environmental systems and the livelihoods of the crop farmers and the nomadic herdsmen.....	184
6.4	The programmes and projects in the government policies and plans for preventing the conflicts.....	188
6.5	The project implementation challenges of the plans for conflict prevention between the crop farmers and the nomadic herdsmen...	195
6.5.1	The assignment of special responsibilities to government officials for facilitating the implementation of the policies and plans for ensuring peace between the crop farmers and the nomadic herdsmen.....	198
6.5.2	The plan for promoting the development of the nomadic livestock sector into the cash economy.....	199
6.5.3	The plan for the creation of corridors and pastoralist camps for the nomadic herdsmen.....	201
6.5.4	The plan for building the productive capacities of the two systems through the development of water conservation.....	204
6.5.5	The plan for encouraging the households to conserve rainwater by building simple rainwater storage facilities in their homesteads.....	206
6.5.6	The plan on community-based afforestation projects.....	207
6.5.7	The plan on community-based soil conservation projects.....	208
6.5.8	The plan for encouraging the nomadic herdsmen and crop farmers to engage in mixed farming.....	209
6.5.9	The plan for organizing festivals, workshops, and other activities for bringing the nomadic herdsmen and crop farmers together to share ideas and experiences.....	209

6.5.10	The plan for using extension education for promoting the activities of the crop farmers and the nomadic herdsmen.....	210
6.5.11	The plan for using designated villages as resource or exhibition centers for the crop farmers and nomadic herdsmen.....	212
6.5.12	The plan for creation of specific projects to link some crop farming activities to those of the nomadic herdsmen.....	213
6.5.13	The challenge of project non-implementation.....	215
6.6	Some missing elements in the plans.....	226
6.7	A factor analytical perspective of the conflicts.....	232
6.7.1	The variables for the application of the factor analytical technique and justification.....	234
6.7.2	Matrix table of the raw data on the 23 variables.....	242
6.7.3	Table of correlation coefficients.....	243
6.7.4	The factor loadings.....	247
6.7.5	The factor scores.....	251
6.8	The persistence of the conflicts: towards an understanding of the causes.....	260
6.8.1	The influences of the natural environmental system of the study region.....	268
6.8.2	The cultural factor.....	269
6.8.3	Problems emanating from the economic activities of the big businesses.....	269
6.8.4	The psychological aspects of the conflicts between the crop farmers and the nomadic herdsmen.....	271
6.8.5	The lack of funding for implementing the projects in the plans.....	271

6.8.6	Lack of incentives for the government officials to work on the peace initiatives.....	273
6.8.7	Lack of police officers and other security personnel for preventing the conflicts between the crop farmers and the nomadic herdsmen.....	273
6.8.8	Inaccessibility of the villages.....	274
6.8.9	Lack of modern communication technology facilities.....	275
6.8.10	The closure mentality.....	276
6.8.11	Lack of local initiatives for bringing the crop farmers and the nomadic herdsmen together.....	276
6.8.12	Corruption, nepotism, and ethnicity.....	277
6.8.13	Acts of sabotage.....	277
6.8.14	Lack of coordination among the organizations involved in rural development projects in the Greater Kordofan region.....	278
6.8.15	The Fear of the Unknown factor.....	278
6.8.16	Lack of information sharing and dissemination about the crop farmers and the nomadic herdsmen.....	279
6.8.17	Lack of political will on the part of the Sudanese government to mobilize the necessary resources to implement the plans on the peace building projects.....	280
6.9	Different statements, different ideas, and different disciplinary backgrounds.....	280
6.10	The conflict problem in its bigger context.....	286
6.11	Concluding remarks.....	289

CHAPTER 7: RECOMMENDATIONS AND CONCLUSION.....	291
7.1 Introduction	291
7.2 The 3L and 4D phases as a solution.....	291
7.3 Phase 3L: awareness creation and other strategies for disposing of the seventeen problems.....	295
7.4 Phase 4L: implementing the seventeen plans under the Transformative Agency phase.....	301
7.5 Dealing with the two options.....	305
7.6 Future research areas.....	307
7.7 Concluding remarks.....	310
BIBLIOGRAPHY.....	313
APPENDICES.....	337

LIST OF TABLES

Table 1.1:	The dominant crops of the Greater Kordofan Region.....	40
Table 1.2:	The Livestock resources of the nomadic herdsman.....	41
Table 1.3:	Population distribution in the twenty one districts of Greater Kordofan.....	54
Table 5.1:	The 21 districts of the Greater Kordofan region showing the villages from which information was collected for the study	143
Table 5.2:	Distribution of the sample sizes of the stakeholders among the twenty one districts of the Greater Kordofan Region.....	149
Table 5.3:	Assignment of the districts of the research assistants.....	153
Table 6.1:	Some key biographical information on the research participants.....	177
Table 6.2:	Some key statistics on performance in the extension programmes (2015-2016).....	211
Table 6.3:	Key statistics on the conflicts between the crop farmers and the nomadic herdsman (2015-2016).....	219
Table 6.4:	List of some successful projects linked to the plans on the prevention of the conflicts.....	225
Table 6.5:	Matrix table of critical information of the conflicts between the crop farmers and the nomadic herdsman.....	244
Table 6.6:	Table of correlation coefficients.....	245
Table 6.7:	Matrix table of factor loadings.....	248
Table 6.8:	Factor analysis – the eigenvalues.....	250
Table 6.9:	Table of the factor scores.....	252

Table 6.10:	Key statistics on the districts scoring positively on factor 1.....	254
Table 6.11:	Key statistics on the districts scoring positively on factor 2.....	256
Table 6.12:	Key statistics on the districts scoring positively on factor 3.....	258
Table 6.13:	Application of the three phases of coding in the grounded theory scheme.....	264
Table 6.14:	Typical analytic statements associated with the stakeholders	281
Table 7.1:	Comparing the different outcomes to be associated with the implementation and non-implementation of the plans on the seventeen problems.....	306

LIST OF FIGURES

Figure 1.1:	Model indicating the role of the natural environment system as the pacesetter in the conflicts.....	20
Figure 1.2:	Application of the 4-planar being encompassing the “social cube”.....	27
Figure 1.3:	The dialectics between government-based development policies and the conflicts in the study region.....	42
Figure 1.4:	Model indicating the position of state development policies on the conflicts between the crop farmers and the nomadic herdsmen in the Greater Kordofan region.....	44
Figure 1.5:	An outline of the basic structure of policy/plan implementation in organizational activities.....	47
Figure 1.6:	Map of Sudan showing the provinces.....	52
Figure 1.7:	The triangular relations between the key stakeholders on the conflicts.....	58
Figure 1.8:	Model illustrating the relations between the desired state and the current state as an important starting point in the social research process.....	61
Figure 1.9:	A model presenting the gap as a call for action.....	62
Figure 3.1:	Application of the critical realist stratification model from the perspective of the influences of the natural environmental systems.....	96

Figure 3.2:	The critical realist stratification model of the conflicts from the perspective of the causal powers of government policies and plans.....	98
Figure 3.3:	A Gap Analysis model of the links between future desire and the current state of affairs.....	105
Figure 3.4:	Model illustrating the need for addressing gaps in activities as steps to the realization of desires.....	106
Figure 3.5:	A 5-step procedure for undertaking evaluative research from the critical realist perspective.....	109
Figure 3.6:	Model presenting the distance/gap between the desires of communities to their current situation as the challenge or obstacle facing change/transformation.....	115
Figure 4.1:	Model tracing the location of the challenge of policy non-implementation processes (absence) to the situation at the Actual level.....	127
Figure 4.2:	Outline of the MELD model of social transformation.....	129
Figure 4.3:	Outline of the key elements of the policy implementation challenge processes.....	131
Figure 5.1:	Model indicating the layers that feature in this chapter.....	136
Figure 5.2:	Research design outline.....	137
Figure 5.3:	Outline of the research design in the study.....	138
Figure 5.4:	Locations of the twenty one districts of the Greater Kordofan region.....	142
Figure 5.5:	The three critical realist levels used for data collection from a geographical perspective.....	171

Figure 6.1:	Mean annual rainfall map of Sudan (in mm) showing the location of the Greater Kordofan region.....	180
Figure 6.2:	The agro-climatic zones of Greater Kordofan.....	181
Figure 6.3:	A broader regional perspective of the agro-climatic zones of Sudan and the surrounding countries.....	182
Figure 6.4:	Map showing the major corridors currently used by the nomadic herdsmen.....	202
Figure 6.5:	Model presenting the persistence of the conflicts as a form of constraint or challenge that needs to be dealt with.....	223
Figure 6.6:	Model indicating the location of the problem of non-implementation of plans at step six	224
Figure 6.7:	Graph of the eigenvalues.....	251
Figure 6.8:	Map showing the distribution of Factor Score 1 in the districts.....	253
Figure 6.9:	Map of Factor Score 2.....	257
Figure 6.10:	Map of Factor 3 factor scores.....	259
Figure 6.11:	Lamination showing the disciplinary backgrounds of the stakeholders in the crop production and nomadic activities.....	285
Figure 7.1:	Model presenting the nature of the essential steps needed to achieve peace between the crop farmers and nomadic herdsmen under study.....	293
Figure 7.2:	Model indicating the importance of the 17 problems and their negation phase in arriving at a peaceful relationship between	

	the two groups.....	294
Figure 7.3:	A model illustrating a government official monitoring the achievements and failures in the 17 plans (boxes) as the basis for finding the number of challenges that have been removed.....	302
Figure 7.4:	A model giving a picture of the nature of information that could be obtained at the 4L phase on the magnitude of problems that have been disposed of.....	303

LIST OF ABBREVIATIONS AND ACRONYMS

CILSS	Permanent Interstate Committee for Drought Control in the Sahel
CPA	Comprehensive Peace Agreement
ECCG	The 4 elements of Bhaskar's social cube (refer to pp 26- 27)
FAO	Food and Agriculture Organization
FOTU	Fear of the Unknown
GDP	Gross Domestic Product
IDP	Internally Displaced Person
IFAD	International Fund for Agricultural Development
HH	Households
IOM	International Organization for Migration
MELD	Acronym used in Bhaskar's absence-based 4 phases of social transformation
NGO	Non-Governmental Organization
OCHA	Office for the Co-ordination of Humanitarian Affairs
OECD/DAC	Organization for Economic Co-operation and Development Assistance Committee
SPLA-N	Sudan People's Liberation Movement
SPLM	Sudan People's Liberation Army-N North
TINA	There Is No Alternative
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNU	United Nations University

CHAPTER 1: INTRODUCTION

1.1 Problem statement

Natural resources have played and continue to play pivotal roles particularly in the living conditions of the rural communities of Africa. Over the centuries, the climate, soils, drainage systems, the fauna, and flora have provided resources for supporting the livelihoods of millions of rural households (HH). The rural communities have been drawing on their natural resources to address their needs for food, building materials, medicinal plants, mineral resources, religious/spiritual activities, entertainment, and other aspects of their lives. Their contribution to the Gross Domestic Product (GDP) of the African countries is highly appreciated (Mazur and Titilola, 1992; Knight, 1980). Their indigenous knowledge systems, in particular, play significant roles in providing valuable information for increasing the quality of research projects on the natural resources of Africa (Reij, 1991; Mazur and Titilola, 1992; Swift, 1996).

In the area of environmental management and development, it is in the rural areas that the bulk of the soil, vegetation, wildlife, and drainage conservation projects are located. The long-term sustainable development of Africa will thus very much depend on how the rural natural resources of the various African nation states are conserved. The natural resources are both a means and an end of the development process. They represent a vital asset, providing inputs to the development process.

The natural resources need to be conserved to also give a respectable face to the communities in which they are located. From the interactions with the rural communities of the Greater Kordofan region of the Republic of Sudan, where this study is based, the impression they portray is that the way the natural resources appear to the public visually should, inter alia, give an indication of how that society respects nature. Their position is that the visual appearance of the soils, vegetation, and drainage systems of the rural communities of Africa need in fact to be considered as one crucial measure of the living conditions of the communities concerned (interviews with local chiefs of three districts in rural Kordofan, 2016).

The literature on this aspect of rural natural resources indicates that these resources cannot appeal to the public visually unless they are well managed and properly maintained (Alcorn, 1995). Their conservation is also vital from the economic, socio-cultural, and political perspectives. To a certain large extent then, one can argue that the visual appearance of the natural environmental systems can give vital clues or inferences regarding the nature of some underpinning community values, norms, and principles.

These are some of the essential lessons, which the researcher has learnt from the rural communities of the Greater Kordofan region. It is interesting that the communities have over the decades related some of their achievements and failures in life to, among other things, the visual appearance of their land, to the quality of the vegetation cover, to the conditions of their drainage systems, the greenery of their cultivated lands, the biodiversity in the localities, and even to the freshness of the air around. They also continue to relate their successes and failures to the extent to which their natural resources address their material needs for food, medicinal plants, building materials, cultural and spiritual needs,

their entertainment needs, and others. These relations between the natural environmental systems and the living conditions of the rural communities constitute one of the important aspects of rural life in the Greater Kordofan region.

While so many issues could thus be researched on the rural natural resource –human development interface of the Greater Kordofan region – this study, however, focuses attention on the potential contributions which the crop farmers and the nomadic herdsman of the Greater Kordofan region could play in the economic development of the rural communities in the region. In terms of the size of the population of the region whose livelihoods depend on the crop farming and nomadic herdsman sectors, these two activities are key to the needs of the communities of the Greater Kordofan region. It is common knowledge in the rural communities that these two sectors hold the key to job creation, income generation, and the related multiplier effects in the region. Nevertheless, over the decades, the full potentials have not been realised, and there is every indication that the various government departments, civil society, and sections of the business community are working hard to ensure that the challenges facing the activities of these two sectors are removed.

This study is organised within the framework of the efforts in place to address the challenges facing the sustained growth of the two sectors. It is set in the framework of the challenges, which individuals and organisations tend to face as they go about trying to address their needs, aspirations, development plan objectives, and what might generally be termed the goals of public good or prosperity. This reality of the challenges, which tend to stand in the way of social progress, is a universal phenomenon, which features in the theories and practices of development at the global,

national, and local scales. Terms such as dialectics, opposing forces, constraints, obstacles, and others are commonly used to refer to this situation. The terms are used particularly in research projects interested in why certain expectations tend to elude society (Hegel, 1977; Foucault, 2000; Bhaskar, 2008).

Putting mechanisms in place to get rid of the challenges which tend to prevent people from attaining their aspirations, is central in philosophy, social theory, and practical development issues such as those dealing with development projects management implementation programmes. They run through the various disciplines because they touch on crucial issues that are of concern to people – that is, how to get aspirations, objectives, tasks, and goals implemented without any frustrations or impediments (Lafferty, 2004). The overall purpose of this study is to disclose how this critical aspect of development challenge finds expression in the livelihoods of rural communities in The Greater Kordofan region.

The researcher has selected this theme on challenges of development of the Greater Kordofan region concerning the ongoing conflicts between crop farmers and the nomadic herdsmen of the area. The challenge relates to the failure of the efforts at resolving the conflicts that have persisted over the decades between the two communities over the different ways in which they use the natural resources of their region. It relates to the challenge of getting rid of the problems or constraints, which stand in the way of implementing the plans in place to build long-term sustainable peace between the crop farmers and the nomadic herdsmen of this study. This type of challenge is the theme in the critical realist research approach used in this study.

The title for this study has been chosen purposely to make a contribution in this area of the development of the rural areas of the Greater Kordofan region. There are certainly other challenges facing the sustained use of the natural resources of the rural areas of the Greater Kordofan region for promoting the development of the communities, but this study has abstracted the conflicts between the two groups to highlight the idea that people cannot take conflict resolution challenges and their livelihoods for granted. The nomadic herdsmen and the crop farmers have over the decades put their own mechanisms (in the form of their culture) in place to pursue their livelihoods and in the process-generated conflicts between them. This conflict situation is a major development challenge in the development of the rural areas of the Greater Kordofan region. The conflicts have major economic, environmental, and other problems.

As posited by McCandless and Carbo (2011), getting rid of conflicts and other undesirable conditions of society is a prerequisite for long-term sustainable peace and development. They argue that peace and security are central and that removing conflicts in society constitutes an important step in addressing some of the major development challenges of social life. It is in the context of this discourse that a number of models have been drawn upon in this study presenting the conflicts under study as a major development obstacle or constraint that tends to create distances, gap, or void on the way towards achieving the expected, ideal peaceful social situations.

The advantages, which the communities under study stand to gain by taking the necessary action to get rid of their conflicts, will be elaborated on in the chapters that follow. The source of the conflicts that features in this study is linked to the annual migrations of the nomadic herdsmen of

the relatively dry North Kordofan region with their families and thousands of livestock to the relatively wet and more humid South Kordofan region for purposes of grazing their livestock and also for avoiding the harsh conditions of their dry season. It is also linked to conflicts, which take place in other parts of the Greater Kordofan region, which become the destination for the nomadic herdsman in relation to the seasons. During the rainy season of the Greater Kordofan region, cows, donkeys, sheep, and other livestock are taken to various parts of Greater Kordofan, where good quality pasture and free surface water become available. Once at their destinations, the nomadic herdsman usually make arrangements with the local chief (the Omda) for the use of the available pasture.

This cultural practice of the nomadic herdsman implies that the farms of the crop farmers, the open grasslands, the ponds, streams, other natural water bodies, and the wild, uncultivated plants become the sources of food, water, and resting places of the nomadic activities. These nomadic activities have grown to become the source of conflicts between, in particular, the sedentary crop farmers (the host population) and the nomadic herdsman (the visitors) over the centuries. The study findings on the current negative impacts of the conflicts in their various environmental, economic, and social dimensions will be elaborated on in Chapter 6.

The Comprehensive Peace Agreement (CPA) of 2005 helped to bring to an end the years of civil war between Northern and Southern Sudan. Most people largely think of the CPA when discussing conflicts in Sudan. What is however often pushed under the carpet is what might be described as the equally destructive and protracted “small-scale wars” in the form of the conflicts between the crop farmers and the herders of the Greater Kordofan region of Sudan. These two groups in Sudan have been involved in

protracted conflicts over the decades over crop farms, stock routes, gardens, watering points, and other open spaces for decades with major negative economic, cultural, political, and environmental consequences. This aspect of the conflicts in Sudan is the topic of this study. This aspect of the conflicts of Sudan continues to divert the attention of the central government of the country from attending to other critical issues of relevance to the local communities in the areas of employment creation, skills training, in the provision of social amenities, income creation, environmental conservation, the provision of housing, and other needs of the communities.

The researcher has selected this topic because the conflicts associated with the use of the natural resources between the rural communities under study have direct links with the other sectors in the development of the households. The authorities are dealing with communities that have lived in close proximity to “conflict zones” for centuries. The study by the United Nations Development Programme (UNDP) (2006), for example, puts the population of the nomadic herdsmen in the Greater Kordofan region at about 20% of the total population of the region, that is, about 800,000. This population figure needs not necessarily constitute a problem. However, the fact that the bulk of the nomads migrate on an annual basis largely to the southern parts of the Greater Kordofan region traversing and destroying crop farms, ponds, and other rural infrastructure projects belonging to sedentary farmers of the south carries with it major social, environmental, and economic problems.

The socio-cultural dimension of the conflicts is that the major recipient regions for the nomads are sedentary crop farmers who are largely blacks living in the southern parts of Greater Kordofan region, who are non-

Muslim and also non-Arabic, unlike the nomadic herdsmen in the north. Under the current conditions of climate change, the severity of drought has been increasing over the past 40 years in the northern parts of the region, leading to the intensification of the migration processes of the nomadic herdsmen to the relatively more humid south. The worsening climatic conditions explain why the nomads see the need for them to move their livestock on an annual basis in larger numbers to the crop-producing regions in the south for purposes of grazing their animals. This cultural practice is centuries old and is today associated with many confrontations over land ownership, trade in weapons, deaths, property destruction to thousands of households, and environmental degradation every year.

While the majority of the rural population of the Greater Kordofan region make their living from farming and other pursuits, the nomadic herdsmen, on the other hand, see the annual migrations as the norm. The culture of the nomadic herdsmen is embedded in the number of livestock they own and the few material possessions that accompany them and their families on the yearly migrations. The study findings indicate that the various government administrations of Sudan have put in place concrete policies and plans for addressing the conflicts between the nomadic herdsmen and the crop farmers. The various governments have taken time over the decades to put in place a number of policies and plans with much potential to get rid of the conflicts. Among the study findings, however, is the problem of the lack of implementation of those policies and plans.

It is rather unfortunate that the conflicts over the trespassing of the lands, the crops, the ponds, and other material assets of the crop farmers in Kordofan by the nomadic herdsmen continue to intensify over the years. This problem explains the increasing annual farm attacks, attacks on the

nomads, the destruction of vital public infrastructure, the loss of human lives, and the negative publicity made by the media and other sources that have been driving away potential investors from the Greater Kordofan region. This is a common problem that has been noted elsewhere by Blench (1996), Braukaemper (2000), and Adam (2008). Public figures continue to look to state institutions of the Republic of Sudan to use their powers to mobilise the necessary resources to build long-term peace between the crop farmers and the nomadic herdsman. Leaving the conflict resolution processes in the hands of the private sector, the local warlords, and other opportunistic groups can only give the impression of the existence of elements of the “failed state” and “poor governance” in those parts of the Greater Kordofan region where the conflicts are wreaking havoc on ordinary rural households (Hussein, 1998; Harragin, 2003; International Food Policy Research Institute, 2007).

The academic community needs to make its presence felt in situations where conflicts between neighbours can be so persistent and destructive by coming on board with appropriate research tools that have the potential to make a practical contribution to finding appropriate solutions (Chambers and Howes, 1979; Mamdani, 1999). The researcher has organised this study with the objective of opening a new chapter on the publications on the conflicts between these two rural communities in the Greater Kordofan region. In doing so, the study has drawn on theories, which systematically identify the processes by which the conflicts have evolved, indicating how various mechanisms have interacted over the years to produce the current conflict situation. The researcher has derived the theories in this study from the critical realist research framework. The researcher applies the theories in the discussions to the findings and recommendations of the study.

The overarching theme in the findings of this study is about the attempts by various public servants of the government departments of Sudan to use their influence to help formulate and implement plans for getting rid of the conflicts between the crop farmers and the nomadic herdsman. Working with the relevant stakeholders, the study findings indicate that the government officials have consistently set targets under various programmes for preventing the conflicts in each financial year. The implementation of such targets has, however, been generally below expectation. The findings indicate that gaps have continued to exist between the various targets and the actual achievements in addressing the conflicts. The government departments of Sudan, however, continue to rely on these same public policies and development plans to hope for better results in the future. The officials in the government departments have been saying literally that *there is no alternative* (TINA) to the peace process and that the government departments will continue to use the instruments of development policies and plans to resolve the conflicts.

The study findings indicate further that those linked to the conflict relations between the crop farmers and the nomadic herdsman do monitor developments in the conflict relations and are aware that new strategies need to be applied for the prevention of the conflicts. This indicates, as will be elaborated on later in Figure 1.5, that decision-makers such as the government officials do take performance evaluation processes seriously and do make use of the information obtained from such evaluations to develop and formulate new strategies for the future. As will be argued below, at Step 7 in Figure 1.5 (*measure and evaluate*), those linked to the conflicts under study need to constantly evaluate the circumstances of their operations. Step 7 in Figure 1.5 is the phase where organisations and other

decision-makers need to generate the information needed to modify their future decision-making processes.

It is rather remarkable that the government officials linked to the conflicts between the crop farmers and the nomadic herdsmen of the Greater Kordofan region are involved in decision-making processes based on the outline in Figure 1.5. The findings indicate that the other stakeholders linked to the activities of the crop farmers and the nomadic herdsmen are equally involved in such monitoring processes. One dilemma, however, is that resources are not currently available to enable the government officials to implement whatever new policies and plans they might formulate.

This research project is thus a contribution to the research information needs of the government officials assigned to building peace between the crop farmers and the nomadic herdsmen of the Greater Kordofan region of Sudan. The nature of the action needed is about closing the gaps that currently exist between the objectives and targets set in the plans of the government departments and the actual achievements over the decades in terms of peacebuilding between the two groups. The theme that runs through the study findings is thus about the *challenge of implementing the existing plans on the conflicts*. It is about gaps between the expected and the observed; about difference, divergence, intended, and unintended outcomes; and between desirable and undesirable outcomes, among others.

The researcher has thus structured the recommendations of the study on this overarching challenge of closing the gap between the objectives and targets associated with the development plans as against concrete achievements. This study is thus very much based on the critical realist message that *what is the current case* cannot and must not be separated

from *what ought to be the case tomorrow* (Bhaskar, Frank, Hoyer, Noess and Parker, 2010: 15). It is very much about the transcendental arguments that dominate the critical realist ontological discourse concerning *what must be the case in order for certain outcomes to be possible*. These transcendental-based ideas in the critical realist research approach find expression in the MELD model, the details of which will be discussed in Chapter 7.

Research projects dealing with issues such as sustainable development, peace and reconciliation, regional planning, environmental conservation, and international relations, among others, would ideally find the critical realist research approach most appropriate by finding out the nature of the guidelines in place to promote the development, peace, regional planning, and environmental conditions desired by the country or community concerned. Critical realists describe such guidelines as having the causal powers to produce certain outcomes by virtue of their nature (Harre and Madden, 1975; Nelson and Wright, 1995; Yeung, 1997; Kadeisoja, 2007). In other words, such guidelines serve a useful purpose by providing stakeholders with specified rules, targets, motivations, behaviours, and codes of conduct to follow in order to achieve certain set objectives. The critical realist research approach thus accords a privileged role to ontology in the understanding and transformation of reality. It is concerned with the identification of connections and the relations essential to the existence of the object of interest.

The role of human agents in interpreting social mechanisms differently to produce intended and unintended outcomes is central to understanding the concept of development challenge. This indicates that the different interpretations of public guidelines, rules, norms, and plans by

stakeholders can constitute the major source of the existence of the gaps. As an illustration, in Chapter 6, the researcher pays particular attention to the roles of government officials in managing the conflicts between the crop farmers and the nomadic herdsmen of the Greater Kordofan region. The premium put on these officials emanates from the various accounts of the rural communities whose narratives have helped to bring into the limelight the legacies, which such public officials have left in the minds of people years after their official duties were over. Their narratives indicate that the government officials have never been a homogenous group but have been people with different attitudes to work and who have been leaving both commendable and regrettable legacies on the conflicts under study. The recommendations of the study will show how changes in the attitudes of the government officials towards their duties can go a long way in building peace between the crop farmers and the nomadic herdsmen.

This study thus takes exception to those who contend that the government officials tasked with helping formulate and implement policies and plans for preventing the conflicts between the crop farmers and the nomadic herdsmen are there only to promote certain sectional, political, cultural, ethnic, religious, and economic interests. As pointed out by Le Roux and Graaf (2001: 195-212), Hesse and Thebaud (2006), and other critical realist authorities, such generalisations and deterministic theories have to be rejected in favour of theories which are based on the facts on the ground. The findings from this study are contrary to the deterministic positivist/functionalist theories which are characteristic of certain social research paradigms.

This study has relied considerably on the information and knowledge of the stakeholders associated with the conflicts to obtain the data for

presenting the study findings, the conclusions, and recommendations in this study. The study findings indicate that the stakeholders linked to the conflicts have practically adequate information and knowledge on the reasons why the conflicts persist in their communities. The recommendations of this study are also based on the idea that the knowledge, experience, and aspirations of the stakeholders linked to the conflicts are crucial for obtaining a deep understanding of the conflicts and also for building long-term peace between the crop farmers and the nomadic herdsman. The rationale for adopting this inductive and transformative approach to the research process is based on themes in social theory and development studies as articulated by Chambers (1983), Le Roux and Graaf (2001), Shackleton, Campbell, Wollenberg and Edmunds (2002), Assister and Noonan (2007), and Bhaskar (2008), among others.

The themes indicate that what stakeholders choose to do with their natural resources is a property of their worldviews (Millennium Ecosystem Assessment, 2005). They highlight the idea that stakeholders have some amount of freedom to interpret public guidelines differently to produce intended and unintended outcomes (Danermark, Ekstrom, Jakobsen and Karlsson, 2005; Assister and Noonan, 2007). They argue however, that stakeholder world-views, actions, and interpretations can be full of distortions, contradictions, and problems, which can frustrate their efforts at improving their living conditions (Bhaskar, 1986; Agger, 1992). Thus, their recommendation is that those stakeholder actions and interpretations, which go contrary to the official rules, need to be disposed of.

Chang and Rowthorn (1999) and Archer, Bhaskar, Collier, Lawson and Norrie(1998), among others, maintain that the State is well positioned to

use the powers at its disposal to intervene in development processes for purposes of helping people to better address their needs, challenges, concerns, and aspirations. They argue that the appropriate solutions could be found for societal problems if social researchers do take serious account of the realities on the ground in conducting their research projects

The above propositions are central to the critical realist research approach. The critical realist-informed stratification model adopted in this study has made it possible to bring into the picture the various levels occupied by the stakeholders linked to the conflicts. Agger (1992), Smith (2000), Denscombe (2000), Blunt (2004), Higson, Castro and Nielsen (2003), among others, have discussed how stakeholders and their underlying social mechanisms tend to occupy particular layers or strata and influence, and can change one another through their interactions. This mutual transformation process between the actions of people and their underlying rules, guidelines, policies, and plans occupies a central position in critical realist theory. The various stratification models that feature in this study are based on dynamic and mutual transformation relationships between people and their underlying social mechanisms.

The aforementioned critical realist stratification research outline is rapidly gaining recognition as a framework of choice in the conduct of social research. The framework conceptualises the objects of study broadly into the *Empirical layer*, concerned with the descriptions of surface appearances; the *Actual layer*, concerned with the actions and interpretations of stakeholders; and what is more, with the disclosure of the nature of the policies, rules, plans, guidelines, and norms in place at the *Real level* to regulate the actions of the stakeholders concerned (Danermark, et al , 2005: 24). At this stage, it needs to be mentioned that

the critical realist approach, which has been used to generate the study findings, has helped to make this study empirical, interpretive, evaluative, transformative, and relevant to the current situation (Morrow, 1994; Flyvberg, 2001; Hartwig, 2007).

The researcher now turns attention to the transformation component of the critical realist research approach. This component indicates that change or transformation is an integral part of social reality. It indicates that social reality is always in the process of becoming other than what it is at any time and that stakeholders need to consciously manage such changes in order to achieve their objectives. The management process includes, for example, the use of education programmes and other resources for purposes of empowering and motivating people with new knowledge to act in certain ways. On this point, Bhaskar (2008: 233), for example, posits that the more people are provided with new forms of knowledge about the benefits of some programmes, the more they will be prepared to adopt such innovations in their day-to-day activities. This normative aspect of the social research process requires that social researchers incorporate in their recommendations new strategies for implementation to help communities address the problems facing them.

On the foregoing point, the findings on the fourth objective of this study indicate that the conflicts persist because the stakeholders are yet to take the necessary steps or strategies to confront what they see as the obstacles underpinning the removal of the current conflicts. The answers obtained from the communities give an impression about local communities who have much knowledge about causal processes/factors, but who are apparently sitting with those problems without getting rid of them. This is largely because the authorities are yet to use awareness programmes and

other relevant strategies to motivate the communities to see the need to get rid of the factors underpinning the persistence of the conflicts.

The awareness creation models drawn upon in this study argue that raising consciousness about the opportunities that exist for communities to get rid of their problems is one issue that needs to be taken up seriously. It is asserted in the section devoted to the recommendations of this study (Chapter 7) that consciousness creation is a critical tool for positive social transformation. The exemplar of positive transformation discussed in this study is about the benefits that flow from getting rid of the constraints in life (Bhaskar, 1998, 2008; Archer, Bhaskar, Collier, Lawson and Norrie, 1998; Danermark, et al, 2005; Sayer, 1992, 2000).

With particular reference to the communities of the Greater Kordofan region, the theme in this study is about giving the communities the knowledge and other resources needed to help them emancipate themselves from the current conflicts between them. This study is based on the idea that emancipating the crop farmers and the nomadic herdsmen from the conflicts, which currently frustrate their attempts at producing at the maximum is critical. It is based on the idea that freedom from all types of problems matters. It argues that freedom from problems has the potential to give communities the power to advance in life.

At this point in the discussion, it needs to be mentioned that this study is about the difference that the critical realist approach can make in the understanding and transformation of social conditions. Social researchers can always make choices regarding ontology, epistemology, and methodology in their concrete research projects. What social researchers choose to study on their research topics and how they choose to study them

are properties of their interpretations of what the world out there means to them (Danermark, Ekstrom, Jakobsen and Karlsson 2006: 32). The researcher could equally well have based this study on the positivist, interpretivist, or other social research approaches. There are however, some major flaws with such approaches, which the researcher discusses under the literature review chapter. The researcher has selected the critical realist research approach on the basis of some merits, which will become evident in the chapters that follow.

1.2 Modelling the layers that make up the conflicts

Underpinning the critical realist ontology-based position is the idea that social researchers always need to give ample opportunities to people to enable them to present their accounts of causality. This is because the stakeholders out there tend to be well positioned to experience the causal processes at work. From such first-hand accounts, the critical realist position is that the researcher can then present or interpret the information generated from the research participants (Sayer, 2000: 36). From such ground-based information, plans and ideas for raising consciousness for positive change can then follow (Agger, 1992; Assister and Noonan, 2007; Mertens, 2009).

Comprehensive, up-to-date information regarding the causes for the persistence of conflicts between the crop farmers and the nomadic herdsman of the Greater Kordofan region of Sudan is currently lacking. The study findings in this project are based on fieldwork conducted on the conflicts covering the period 2013 to 2016 in which the relevant sample of the stakeholders linked to the conflicts was approached to provide their accounts concerning what they think are the causes of the persistence of

the conflicts. Their accounts indicate how various environmental, cultural, and political/management factors have operated jointly to explain the conflicts. Out of their accounts has been produced the explanatory framework in this study based on the idea of emergence indicating how causal processes at the various layers have emerged from one another systematically to produce the intended and unintended outcomes or situation of the conflicts at the Empirical level (Archer, et al , 1998: 110).

Figure 1.1 presents a picture of this idea of emergence or causal modelling adopted in this study. This emergence or stratification based mode of explanation constitutes an important element in this research project.

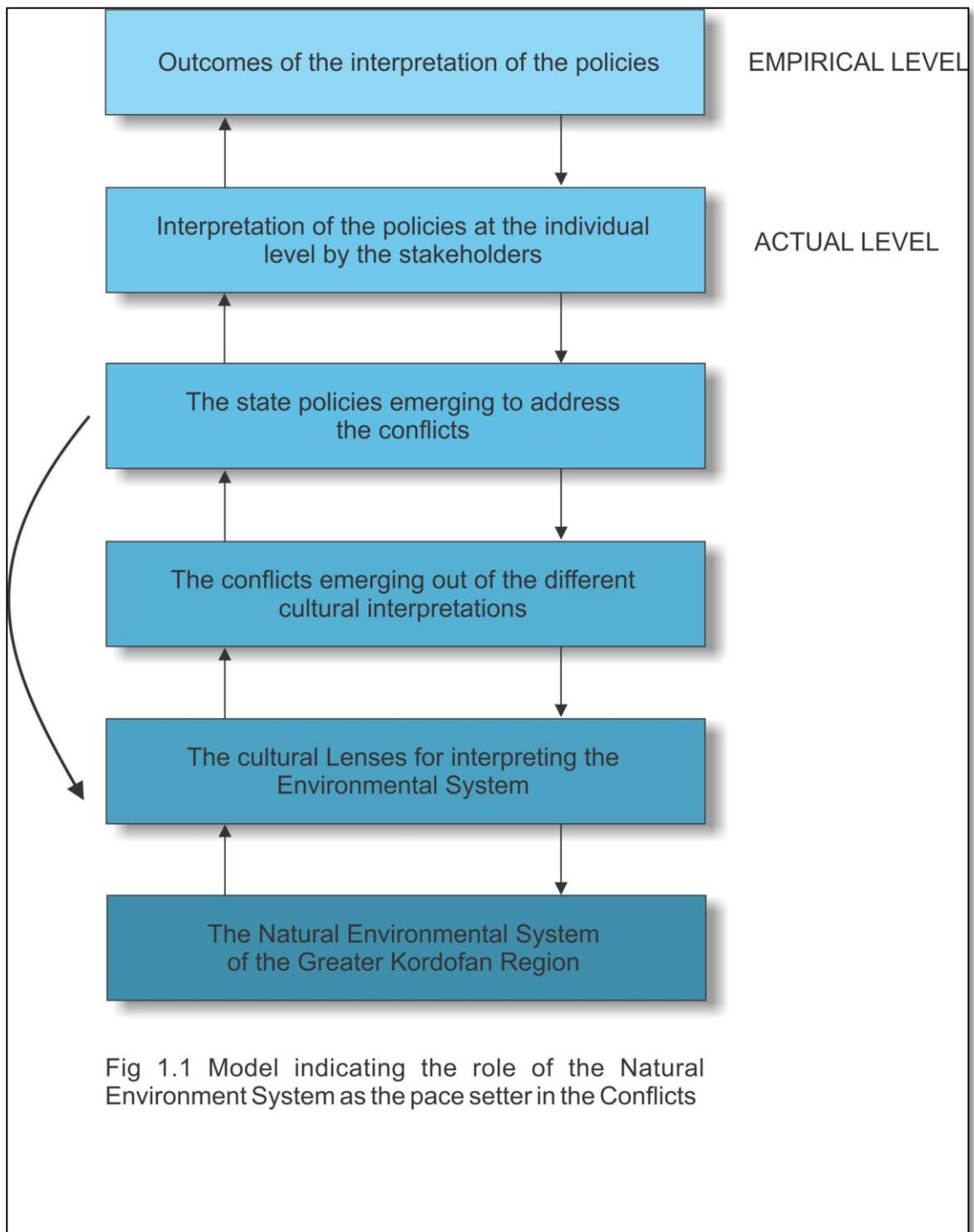


Figure1.1: Model indicating the role of the natural environment system as the pace setter in the conflicts

The version of emergence model presented in this study indicates how the different cultural lenses of the crop farmers and the nomadic herdsmen

communities have emerged from the natural environmental systems in the Greater Kordofan region which has, in turn, led to the emergence of the conflicts and subsequently brought the government authorities and other organisations into the picture to address the conflicts. Hartwig (2007: 125) defines the concept of emergence as a form of systems framework for explaining causal processes. This approach to the analysis of the conflicts in Figure 1.1 indicates how the sequence of events underpinning the conflicts has been modelled in terms of the dominant mechanism appearing at particular conjunctures.

The population of the crop farmers and the nomadic herdsmen represent about 80% of the Greater Kordofan region that makes them of such importance in any programme intending to contribute to the long-term development of the Republic of Sudan as a whole. The term nomadic herdsmen or pastoralism generally refers to groups of people who for one reason or the other find it necessary to migrate following the rains and pasture in pursuit of their livelihoods (El Tahir, 2002). The movements of the nomads can involve crossing borders of other countries with the political implications that they imply.

In the study region, the nomadic herdsmen rely on their domesticated animals such as sheep, cattle, camels, and goats, which travel with them in their annual migrations to the Kordofan region. Their domesticated animals are largely of poor quality, since they only sell their livestock in times of dire need to satisfy pressing needs such as water and food. The livestock is raised largely as status symbols. Such cultural practices are thus reflected in the very limited and unpredictable sale of their livestock.

The Greater Kordofan nomadic herdsmen always refer to their “Dar” or home-land from which they operate yearly between the dry and wet seasons, keeping the nights in their tents. In the past, they had their indigenous local community-based political administrative systems. These were however abolished in 1970 and incorporated into the current local government systems of the Republic of Sudan. A handful of the nomads in the Greater Kordofan region are beginning to engage in small-scale agriculture, often migrating for short distances, usually twice per year and maintaining permanent dwellings. The term transhumance is therefore used for such families. These types of nomads are also referred to as “semi-nomads” (El Sammani, 1967, 2001, 2004, 2010; El Sammani, El Tayeb, Abdallah and Suliman, 1984; UNDP, 2006:3). The records indicate that some efforts have been put in place in recent decades, to settle some semi-nomadic families in the Greater Kordofan region. This is however of limited importance.

This study is about the relations between the sedentary crop farmers of the Greater Kordofan and the typical nomadic herdsmen, since the population of the semi-nomads is rather inconsequential. The term nomadic herdsmen in this study therefore does not apply to the semi-nomads. The researcher conducted this study with the “full-time” nomadic herdsmen. The study findings and related models thus apply only to them. The researcher employed both quantitative and qualitative research methods to enable the nomads and the sedentary crop farmers to generate the information in this study.

In addition to these two key communities, the researcher has also collected information from other stakeholders who have become linked to the farmers and the nomads over the decades in various ways. These include

service providers to the crop farmers and the nomadic herdsmen, the customers of the products of the two communities, and government officials who act as extension officers. They also include social workers, human settlement building officers, non-government organisations involved in various development programmes that impact on the activities of the crop farmers and the nomadic herdsmen, police and security officers, traditional leaders linked with land tenure issues, and some individuals whom the researcher consulted in view of the deep knowledge they have about the conflicts. Out of such consultations, the researcher has developed a number of models based on Actor/Stakeholder Network (Latour, 2005) and related concepts to highlight the roles of stakeholders in producing change.

The stratification model (Figure 1.1) provides what might be described as a “stages of development model”, showing how the natural environmental system of the Greater Kordofan region sets the broader scene or context for the various stakeholders involved in the conflicts to emerge. The layers, strata, or laminations constitute one key feature of the critical realist research model used in this study. In this “stages of development model” can be seen the relevance of the concept of “emergence” in this study whereby the upper layers emerge from the layers below. Thus, Figure 1.1 illustrates how cultural lenses have emerged from the natural environmental systems, leading subsequently to the conflicts and ultimately, to the coming into being of the state-sponsored public policies and plans for dealing with the conflicts.

The researcher has developed Figure 1.1 through interactions with the crop farmers and nomadic herdsmen over the period 2013 to 2016. The model was thus inductively derived. It is an inductive, evaluative, theory

discovery research approach, which allowed the researcher to outline a theoretical, or emergentist account of the factors underpinning the persistence of the conflicts between the two groups. The model has provided the researcher the means to discover and disclose to the public the key concepts or factors underpinning the existence of the current conflict situation.

The stratification model and the four perspectives of the conflicts

An examination of Figure 1.1 indicates that four layers associated with the conflicts can clearly be identified. The researcher derived them systematically through the inductive method, which enabled the crop farmers and the nomadic herdsman to disclose valuable items of information. These items of information were about the different ways in which the crop farmers and nomadic herdsman utilise their cultural lenses to interpret the natural environmental systems and how these have led to the current conflicts and their concerns, fears, and hopes about the conflicts. The interactions have led to the understanding of how the different cultural lenses used by the crop farmers and nomadic herdsman have inadvertently produced the conflicts between the two communities. They also indicate as argued by Ebel, Bhal, Fox and Vallicourt (2004) how the state institutions and other organisations have responded to the conflicts by setting up a number of policy and planning mechanisms for peace-building between the two communities.

On top of the layers in Figure 1.1 is the current challenge faced in the implementation of the government policies and plans for the peaceful coexistence of the two communities. This indicates that no understanding of the conflicts is possible without reference to the role of government

policies and plans on the conflicts. The model indicates that the top layer (that is, the government conflict prevention implementation challenge) is today a reality that needs to be acknowledged. It is for this reason that Chapter 6 devotes considerable attention to the nature of the policies and plans of the Sudanese government for addressing the conflicts under study.

An examination of Figure 1.1 indicates that four perspectives could be discerned which are arranged systematically from the *natural environmental systems*, through the *cultural*, to the *conflict*, and finally, to the *government conflict prevention policies*. Given the importance of the government conflict prevention policies, it became clear to the researcher that Figure 1.1 had to be reconceptualised. This was to help bring into the picture the current and increasing role of the Sudanese government's various development policies and plans which lay the guidelines on the conservation of the natural environmental systems, on the development of the cultures and the livelihoods of the crop farmers and nomadic herdsman, and lastly, on the prevention of the conflicts under study.

Figure 1.4 provides an outline of the reconceptualisation of Figure 1.1. It can be noted in Figure 1.4 that today it is the broader Sudan government development policies and plans, which set the tone for understanding the persistence of the conflicts. Murphy (1995), Holling (2001), and Mcloughlin (2001) have discussed the value added to environment-related research projects through the inclusion of the roles of public policies, plans, and the activities of stakeholders.

The engagement of the researcher with the crop farmers, the nomadic herdsman, their customers, service providers, and the other stakeholders resulted in their disclosure of information on their experiences, concerns,

perceptions, and aspirations for the future from various disciplinary backgrounds. The interactions entailed different forms of interviews with the relevant stakeholders. The researcher has also accessed the relevant records and documents relating to their activities. The researcher organised the voluminous raw data in the field notes into readable narrative descriptions during the phase of data collection in 2015/2016, which has helped to identify the four explanatory themes. Out of the interactions has also emerged an understanding of the factors working in support and also against the Sudanese government policies in place for addressing the conflicts between the crop farmers and the nomadic herdsmen.

The findings in this study will also indicate that the four perspectives on the conflicts (as indicated in Figure 1.4) have their corresponding north-south geographical divides (that is, between North and South Kordofan) in terms of the *ecological, cultural, conflict, and the conflict prevention* dimensions. In Chapter 6, the researcher applies an analytical data procedure, based on the statistical technique of factor analysis, to illustrate the spatial perspective of these four themes.

With the above general background introduction to the rationale for filling the gaps in the existing information and knowledge on the conflicts under study, attention is now turned to the critical realist-based ontological-axiological chain model and how it has been applied to the four themes in this study. The ontological-axiological chain is one of the explanatory models in critical realist-informed research indicating the contributions of certain factors in producing social outcomes.

In this study, the researcher uses the acronym ECCG (where E stands for the natural environmental system; C for the cultural lenses of the crop

farmers and the nomadic herdsman; C for the conflicts between them; and G for the governance policies in place to establish peace between the two communities). The researcher models Bhaskar’s dialectical critical realism within this articulated system as $G > C > E$, where $>$ for “constellationally contains” implies that the conflict prevention measures contain C, C, and E; the conflicts contain C and E, that is, the culture of the crop farmers and nomadic herdsman and the natural environmental system; and finally E (the natural environmental system), the base from which the rest of the factors primarily emerged from. This scheme is based on Hartwig (2007: 301).

Figure 1.2 indicates the key aspects of Bhaskar’s 4-planar model as applied to the four themes discussed above.

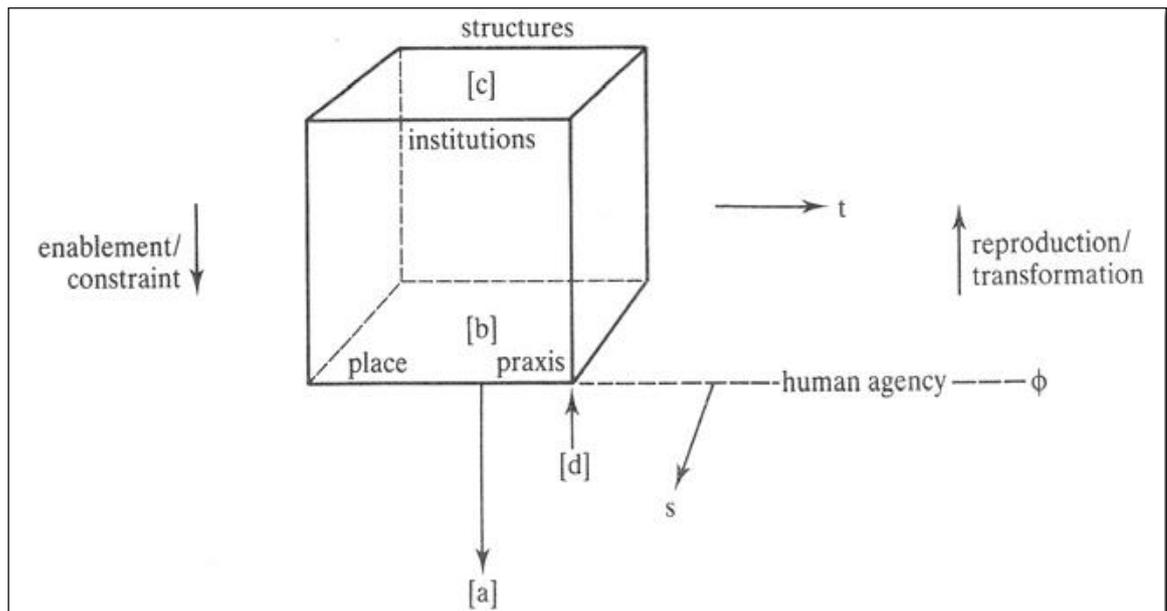


Figure 1.2: Application of the 4-planar being encompassing the “social cube”

Source: Hartwig (2007: 301)

The 4-planar being depicted in Figure 1.2 is broken down as follows:

- (a) plane of material transactions with the environmental system, or nature
- (b) plane of the cultural lenses of the two communities
- (c) plane of the conflicts
- (d) plane of plans and policies for sustainable development and also for preventing the conflicts

The role of governance or the state institutions in promoting the broader imperative of sustainable development and in preventing the conflicts also stands out clearly in the aforementioned 4-planar model. As was illustrated in Figure 1.1 and also in Figure 1.2, the four perspectives are not independent entities but are made up of complementary networks of mutually consistent structural elements. They situate the embodied agent (the stakeholders in the conflicts) as being thrown into a natural-social world of four types of mutually irreducible relationships. They indicate that any efforts to understand the conflicts between the crop farmers and the nomadic herdsmen will have to acknowledge the influences that these four factors or plans impose on them.

It needs to be noted further that the stratification idea encapsulated in Figure 1.4 illustrates the hierarchical nature of the emergence phenomenon of the conflicts. It illustrates that the study of the conflicts is concerned with identifying the broad causal mechanisms underlying the emergent properties (retroduction), and also with explaining how these interact to produce the conflict events (retroduction). The model further indicates how social mechanisms at the macro scale (Real level) are ultimately manifested (at the Actual level) in the form of individual microscale

human experiences of conflicts with all the psychological and other implications. The intimate links between the micro and the macro thus emerge in Figure 1.4.

It needs to be mentioned then that Figure 1.4 also constitutes an important element of the propositions of this study. It serves to indicate how the various layers make their unique contributions to the understanding of the existence of the conflicts under study. The layers are concrete inductively based findings, which emerged from the interactions with the stakeholders in this study. They thus very much constitute ground-based theories. This means this study is thus very much theory-informed and theoretically informative as well (Sayer, 1992: 86).

From the literature, one observes that various research reports of renowned international organisations such as the United Nations, the African Union, and the European Union continue to highlight the importance of relying on the narratives of people for offering explanations, developing concepts, ideas, and recommendations in social research projects. This approach can help to bring into the limelight the perceptions, culture, experiences, and concerns of the stakeholders concerned. Bhaskar (1998), Dick (2008), Foucault (2000), Mertens (2009), Oliver (2011), Reason and Bradbury (2008), Wadsworth (2010), The Organisation of European Economic Development (1995), and The European Union and United Nations (2012), among others, have all stressed the importance of, *inter alia*, basing explanations in social research on the perceptions of the stakeholders concerned. This position has been discussed further by Booth (1994), Foucault (2000), Babbie and Mouton (2001), Flyvberg (2001), Murray (2004), Heyns and Stefisyun (2006), and Shockley (2006).

Concerning the *environmental perspective* of the conflicts, the north-south differences in the climatic and other ecological variables in the region have provided an important dimension to the understanding of the problem statement in this study. For geographers interested in the relations between standards of living and the conditions of the natural environmental systems, this aspect of the findings indicates how the arid conditions in the north have over the centuries provided the motivation for nomadic herdsman in that part of North Kordofan to move their livestock in their thousands every year to the south, giving rise to the violent confrontations experienced yearly (Buckles, 1999; Crotty, 2005; Redman-Maclaren, Mills and Tommbe, 2014).

The Greater Kordofan region is located in an ecological region known for its apparently sharp north-south climatic differences. The area lies in the Sahel zone of Africa adjacent to the Sahara desert. Any mention of a geographical region in Africa bordering on the hot, dry climatic conditions of the Sahara desert and the relatively more humid grassland regions of the savannahs brings to mind the Sahel Zone of the continent that stretches from Senegal in the west to Somalia in the east. This buffer zone between the arid Sahara Desert and the dry grassland regions of the savannahs constitutes a zone of ongoing struggle between the forces of desertification from the north and those of “green development” from the south (CARE Sudan, 1977; International Fund for Agricultural Development [IFAD], 2009; Harragin, 2003). It is a buffer zone where the battle between the forces of desertification and projects on green development continues unabated. It is a buffer zone where it could well be said that the dialectic theory of Hegel finds its finest expression in terms of “every situation inherently having its own negation, and every status quo inherently having

its own resistance” (Inwood, 1992; Hegel, 1977). The desert climatic region in the Greater Kordofan region has its opposite in the relatively more humid savannah climatic region to its south. In this context, the nomads on an annual basis travel south to feed their livestock, thereby setting in chain major conflicts along the stock routes, farms, water points, and the villages on the way.

The government officials have over the decades transformed the policies in place to regulate the relations between the two communities. In the past, members of the public used to complain about the apparent inconsistencies, failures, favouritisms, lapses, and other forms of flaws in the policies and plans for getting rid of the conflicts. Today, however, there is increasing evidence that issues on democracy, human rights, distributive justice, wealth sharring, power sharing, equality and ethics are coming on board within the governance policies, plans and programmes which, if implemented, will be able to achieve the goal of peaceful coexistence between the crop farmers and the nomadic herdsman and thereby improve the living conditions of the two communities.

With the Greater Kordofan region straddling a zone of the foregoing environmentally unstable processes, the rural communities there can simply not afford to fail to implement the state-sponsored peacebuilding policies, development plans, and other initiatives in place to help in their own development. The policies and plans exist to assist them to live in peace and thereby raise their living conditions. Today, there are serious issues on the annual problems of land degradation, drought, and famine in the villages across the region. Other problems include the mushrooming of unplanned settlements, over-cultivation around settlements, the conversion of rangeland into marginal cropland, intensive cultivation in places

vulnerable to drought, heavy fuel-wood extraction, deforestation leading to a spiral of decreasing crops and livestock, increasing land pressure, and declining livelihoods. The stakeholders linked to the conflicts between the crop farmers and the nomadic herdsman need to take seriously the various government policies and development plans in place for peacebuilding. This surely has the potential to usher in the peace and tranquillity needed for their long-term sustainable development.

Figure 1.1 is thus a model that indicates how the *natural environmental systems* at the bottom layer set the tone. The model indicates that the natural environmental conditions (the soils, climatic, drainage, vegetation, and fauna) continue to provide a broad range of natural resource-based options to the rural communities to engage in a number of activities.

The second layer from the bottom in Figure 1.1 highlights the role of *cultural lenses* of the two communities concerning the conflicts between the crop farmers and the nomadic herdsman. Here, the model indicates that the clash between the two communities could, to a large extent, be interpreted as a clash between indigenous Africans who see the land as a resource for crop production and the nomads who see it rather as a resource for moving livestock in relation to the movement patterns of the rains and moisture. These two cultures incidentally are also differentiated in terms of the largely Christian South Kordofan and the largely Muslim North Kordofan. In addition, the Arabic culture and the indigenous black African culture meet “coexist” or “clash” in this region of the Republic of Sudan, although the coming together of the two need not be manifested in terms of conflicts.

Thus, from the foregoing anthropological perspective, the *cultural* factor indicates that the conflicts between the two communities exist because none of the two simply wants to give in to their worldviews. The two thus exist today largely as opposing cultures. The role of opposing cultures in the development process occupies a central theme in dialectic theory (Callinicos, 1998). Once the cultures are built largely on the basis of hatred, domination, and the elimination of the other from the area of contestation, then culture takes on the role of a negative and destructive social mechanism, guideline, norm, and rules of behaviour (Agger, 1992; Spencer and Thomas, 1998).

This study has identified the cultures of the crop farmers and the nomadic herdsmen as a major factor in the persistence of the conflicts. One major development challenge in the rural Greater Kordofan region can thus, to a large extent, be attributed to the apparent hostile relations between the two cultures. Culture, as part of human interpretations, is thus depicted in Figure 1.1 as a decisive factor in the conflicts. The model shows that from the cultural conflict layer has emerged the various policies, plans, and other initiatives for addressing the conflicts (Pratt, 1995; Sayer, 1998; Giacchino and Khabase, 2003), and therefore, the importance of the concept of emergence in the study of the conflicts under study.

One prominent area in which the cultural interpretation of the natural resources of the region finds expression is in the area of economic activities. Here, the study findings indicate that the crop farmers in South Kordofan see the land as a means for engaging in the cash crop economy. In this way, the crop farmers are generally better off economically than their nomadic herdsmen counterparts in North Kordofan who see their livestock not as a resource for material wealth but as mere social status

symbols. The differences in per capita incomes thus partly explain why population migration for better living conditions is largely from the north to the south of Kordofan. In the process, conflicts over available jobs, the forestry, agricultural, and other resources have increased in South Kordofan over the decades with negative social consequences (International Food Policy Research Institute, 2007: 41).

The programmes for improving the living conditions of the rural communities through the use of their natural resources are thus inseparable from the different cultural lenses being used to interpret the concept of natural resources. This is the one reason why this study puts particular premium on the role of the Sudanese state institutions in addressing the conflicts through the cultural discourses of the two communities. A reconceptualisation of the conflicts as depicted in Figure 1.4 shows that the government departments need to continue playing meaningful roles. Here, one can recognise the importance of the concept of the developmental state in providing the environment or conditions for peace to exist between the crop farmers and nomadic herdsman as they go about using their natural resources to address their material and other needs (Mark and Gordon, 1998; Owen, 2014).

The organisations operating in the study region are themselves increasingly becoming aware that the various policies, plans, and programmes of the government departments are inseparable from the cultural lenses of the crop farmers and the nomadic herdsman. Thus, running through the items displayed in Figure 1.1 and Figure 1.4 are the hands of the various departments and institutions of the authorities of Sudan that are continuously laying the policy and planning frameworks for the two

communities to make their contributions to the national development effort.

Both models indicate that the processes at work are cyclical rather than linear. Starting from the bottom layer in Figure 1.1 and Figure 1.4 to the top layer, one sees emergence, whereby new products, situations, and outcomes emerge from some pre-existing objects or conditions. Starting from the top layer to the bottom layer, however, one sees “retroduction”, indicating how one can retroduce the mechanisms responsible for the existence of the object or outcomes concerned (Corning, 2002).

It is interesting to note that Figure 1.1 and Figure 1.4 bring out further that the layers are also expressed in disciplinary terms involving crop farmers, nomadic herdsmen, government administrators from various departments working for peace and reconciliation, service providers from various public and private sectors, and consumers of the products of the two communities, among others. With a system having such a multi-dimensional nature, the stratification model thus appears particularly relevant for this study. Johnston (1983), Bhaskar, Frank, Hoyer, Noessand Parker, (2010), and Price (2014) submit that the critical realist lamination or stratification model is particularly suitable for objects with such multi-dimensional ontological properties where the layers can indicate how concepts on climate, soils, vegetation, and animal husbandry link up to issues on anthropology, sociology, psychology, political science, development studies, and public administration to promote understanding.

1.3 Situating government development policies and plans in the analysis of the conflicts

While the merits of basing this study initially on the stratification model of Figure 1.1 have already been discussed, the researcher has to point out that Figure 1.1 is rather closed around the influences of the natural environmental systems. Figure 1.1 apparently begins and ends with the influences of the natural environmental system of the study region on the living conditions of the communities. However, as is commonly known, the condition of the natural environmental system is today one of the issues of concern to national and local governments. No longer are communities and private businesses, in particular, free to use the natural environment systems and the associated natural resources the way they like. Such a situation can only lead to anarchy; environmental degradation; the eventual depletion of the natural resources, which could lead to poverty; and a lowering of living standards. Thus, the strong case made in this study is for continued state involvement in the sustainable use of the natural environmental systems by local communities. As demonstrated by Redclift (1987), Walter and Salt (2006), Bhaskar, et al (2010), and Price (2014), among others, understanding the conditions of the natural environmental systems of communities and how local communities use them to address their needs requires an investigation into how state policies, plans, and regulations provide the framework for the communities concerned. The important roles played by the state institutions in regulating the use of the natural resources cannot be ignored.

Taking this position seriously explains why the researcher has found it necessary to go deeper beneath the natural environmental systems-conflicts

interface to bring the roles of government policies and development plans into the picture. The government policies and development plans layer indicates how the public authorities use the state powers at their disposal to regulate activities within the natural environmental resources, the economy, politics, cultural practices, and other development-related activities. This study is based on the reality that the state guidelines, policies, and development plans exist out there as an important social mechanism (an intransitive object) which plays critical roles in regulating the use of natural resources and other aspects of development for that matter. It is in the context of this ontological reality that the researcher has developed Figure 1.4 as a reconceptualisation of the model that was initially discussed under Figure 1.1. It needs to be pointed out that this study brings the role of public policies and plans into the picture to support those normative models of social change which seek to recommend theories on social transformation which can, among other things, promote the peace needed for long-term development.

One normative social transformation model, which is drawn upon to serve as an exemplar on this study on conflicts, is the MELD theory of Bhaskar (2008). In Chapter 7, the researcher uses this model to argue that whenever problems, challenges, and other forms of constraints are identified in the development process, the necessary action programmes, interventions, and responses need to be applied to achieve the intended outcomes. Such interventions are essential because Bhaskar maintains that they can introduce the ideal conditions upon which future practical decisions for moving the development process forward along the desirable trajectories could be based. The role of state policies and plans for disposing of the

challenges facing society is discussed in this study from the perspective of the MELD model.

It is in this context of the causal powers of government policies and plans serving as ideal normative mechanisms getting rid of particular problems of society that the recommendations of this study are conceptualised. State-based policies and plans, when informed by democratic principles, can provide the necessary framework for addressing societal problems (York, 1988; Allotey, 2005; Onkware, 2015).

The type of perspective, which takes into account the vital role of state policies and plans as displayed in Figure 1.4, is currently missing on the current research projects on the conflicts between the crop farmers and the nomadic herdsmen of the Greater Kordofan region. Figure 1.4 fills this gap by advancing a research approach based on a stratified ontology, which puts the role of the State in the forefront as having the causal powers for replacing conflicts with peace (Bhaskar, 2006).

This critical realist approach to conceptualising the conflicts under study is one hallmark, which separates this study from existing ones. The state policies and plans for preventing the conflicts are conceptualised as the ultimate beacon or sentinel which the relevant stakeholders need to look up to for direction. Some (Mark and Gordon, 1998; Buckles, 1999; Heyns and Stefisyun, 2006; Yirenkyi-Boateng, 2016) have argued in favour of taking into account the role of state-sponsored policies and plans in the analysis of conflicts from such a normative perspective.

The plans of the government of Sudan are based on the axiom that peace axiomatically promotes development, just as development axiomatically reduces conflicts. It is acknowledged these days that donors will not give

development aid to conflict-ridden countries and that investors will also avoid conflict-ridden countries. It is common knowledge these days that countries such as Cambodia, Rwanda, and El Salvador which have come out of wars and other forms of conflicts and are today quite stable politically are obtaining various forms of international aid to accelerate their development efforts. From this perspective, it is clear that peace is needed in the Greater Kordofan region for the local communities to successfully address their various needs (African Union, 2004; Assister and Noonan, 2007).

The outline in Figure 1.4 thus constitutes one important theoretical framework for this study. It indicates that one cannot afford to turn a blind eye on the role of government institutions, plans, and development programmes in the analysis of the conflicts in this study (International Food Policy Research Institute, 2007; Onkware, 2015). The analysis of the nature of the Sudan state development policies and plans in the Greater Kordofan region thus very much holds the key to the understanding of the current state of affairs of the conflicts between the crop farmers and the nomadic herdsmen.

The natural resources of this fragile environment need stability to develop on a sustainable basis. Massive land reclamation projects involving afforestation, soil conservation, irrigation, the building of dams, the practice of mixed farming, environmental education, the establishment of game parks, and effective and sustainable land tenure systems all need to be in place in addressing the conflicts. Thus, improving the living conditions of the crop farmers and the nomadic herdsmen through various government-supported initiatives constitutes a key requirement for the

long-term peaceful coexistence of the crop farmers and nomadic herdsmen (Norberg and Cuneming, 2008).

On the aforementioned point, attention is now turned to some insights into the economic activities of the crop farmers in the study region. The importance of the crop production activities could be captured in Table 1.1.

Table 1.1: The dominant crops of the Greater Kordofan region

Type of crop	Uses
Gum Arabic	Exports
Sorghum (Dhura)	Main staple food
Millet (Dukhun)	Food
Groundnuts (Foul Sudani)	Oil for local consumption and seeds for export
Sesame (Simsim)	Seeds for export and oil for local consumption
Vegetables (e.g. Okra and Spinach)	Food
Hibiscus flower (Karkadi)	Mainly for export
Watermelon (Bateikh)	Seeds for export and fruits for local consumption
Wild fruits (e.g. Aredaib, Gidhaim, Laloub, Nabeg, and Gongulais)	Food

Source: Fieldwork, 2015-2016

The crop production activities play critical roles in the food production sector of the region. They also support the livestock, poultry farming, and related activities. The crops include sorghum, millet, gum-arabic, sesame, groundnuts, fruits of various kinds, and hibiscus flower, among others. A substantial percentage of the crop output is exported to the neighbouring

states and other countries during the rainy seasons. The nomadic herdsmen also make their own unique contribution to the economy of the region. These include the occasional sales of milk and other animal products. The bulk of their value, however, lies in the social status and symbolism associated with having large herds of animals.

Table 1.2 gives a broad overview of the contributions of the nomadic herdsmen to the economy of the Greater Kordofan region.

Table 1.2: The livestock resources of the nomadic herdsmen

Type of livestock	Uses
Sheep	Meat, milk, and for sale (export and local markets)
Cattle	Status symbol; nomadic activities; occasional sales of cow products
Horses	Status symbol
Donkeys	Means of transport; nomadic activities; occasional sales of donkey products
Camels	Status symbol; nomadic activities; occasional sales of camel products
Goats	Status symbol; nomadic activities; occasional sales of goat products

The information from Tables 1.1 and 1.2 indicates that potentially, the crop farmers and the herdsmen can make a major positive contribution to the development of the Greater Kordofan region through employment and income creation, tourism, and other related activities. Figure 1.3 thus provides an overview of the impacts that good state policies and plans could have on the conditions of the stakeholders under study.

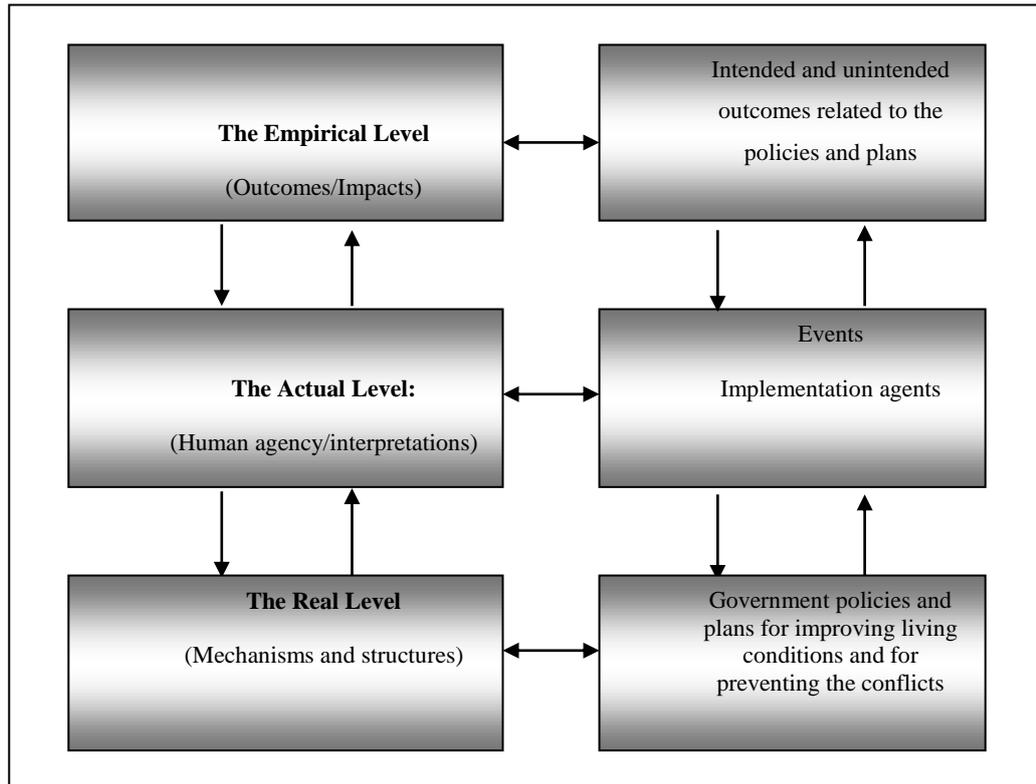


Figure 1.3: The dialectics between government-based development policies and the conflicts in the study region

Source: Adapted from Johnston (1986: 52)

Figure 1.3 illustrates that democratically based development policies and plans have the potential to play important roles in social transformation processes (Roux and Graaf, 2001). This is one theme in the critical realist normative social transformation model (MELD) of Bhaskar (2008) which features Chapter 7 of this study. Figure 1.3 is based on the theory that improvements in the living conditions of the crop farmers and the nomadic herdsman through state-based development policies and plans can go a long way in addressing their complaints, concerns, and therefore, the conflicts or peace situation.

Attention is now turned to the outline of the reconceptualisation of Figure 1.1 as depicted in Figure 1.4. It needs to be mentioned at this stage that the actual number of layers in a study is dependent on a number of factors such as the level of resolution at which the project is located. In this study, the national government policies constitute the last layer at the bottom. The model indicates that an open system in which various stakeholders come on board with different agendas that will thus lead to intended and unintended outcomes is being dealt with. With such relative freedoms available to the stakeholders, the arrow of time will thus be embedded in the system, carrying with it much instability and inevitability of transformation. Figure 1.4 is thus a reconceptualisation of the conflicts problem in which the broader state development policies and plans now come into the picture.

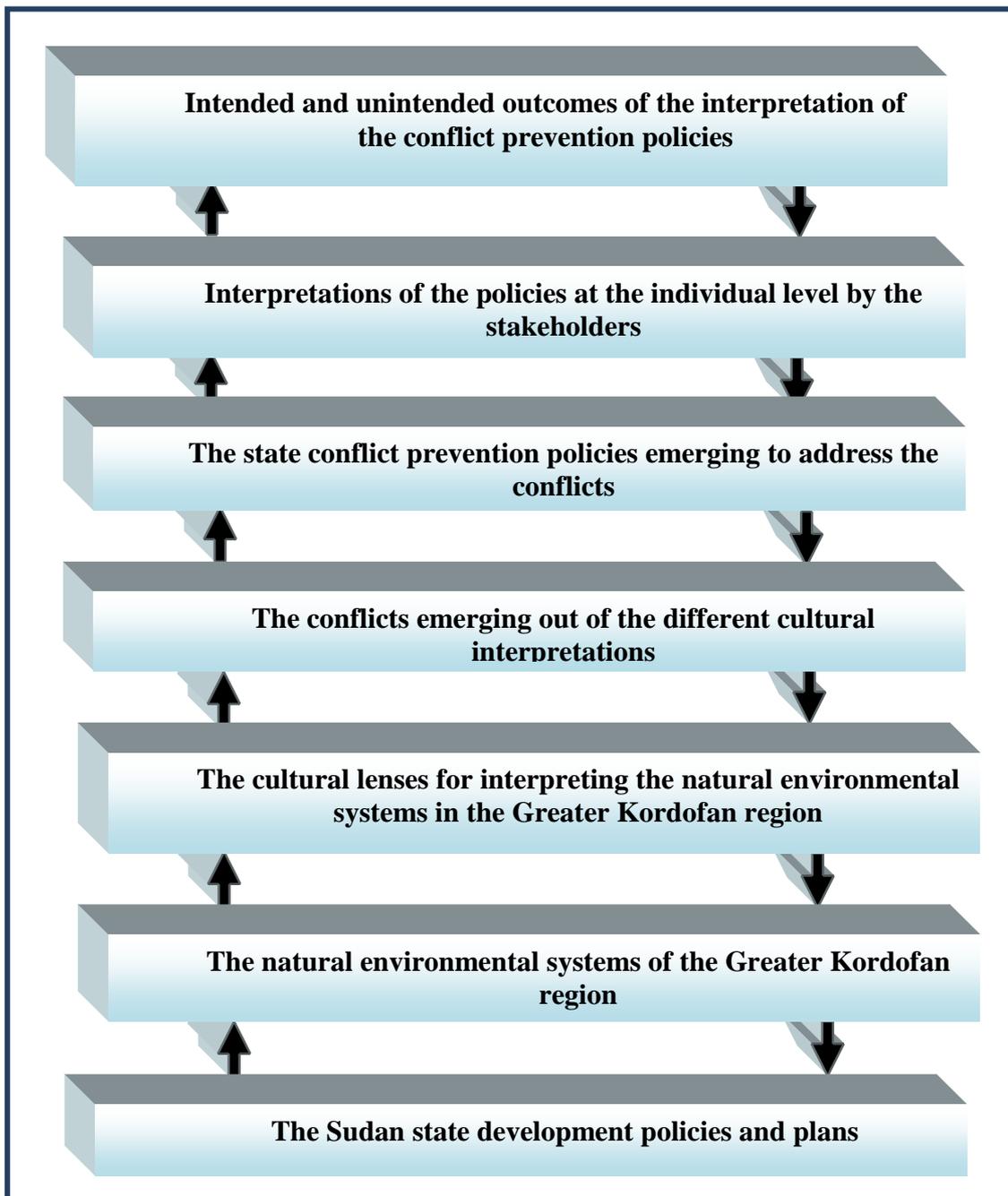


Figure 1.4: Model indicating the position of state development policies on the conflicts between the crop farmers and the nomadic herdsmen in the Greater Kordofan region

Figure 1.4 illustrates the stratification position or level of abstraction taken in this study in terms of the role of the state-sponsored development policies and plans in the conflicts between the crop farmers and the nomadic herdsmen in the Greater Kordofan region. As indicated in the

model in Figure 1.4, the start and end points in this study are about the nature of the policies and plans in place to address the conflicts between the crop farmers and the nomadic herdsman under study. The chief issues at the top and bottom layers are about the conflict prevention strategies and the actions that need to be taken to implement the policies concerned.

The public is logically satisfied when stakeholders comply with the guidelines, targets, and other rules associated with public policies and plans (Giacchino and Khabase, 2002). This situation is associated with the intended outcome element at the Empirical level of the stratification model. However, there is the dilemma that one has to acknowledge the reality of the unintended or undesirable outcomes emanating from social action.

Non-implementation of public policies and plans is today acknowledged as one of the dilemmas or unintended outcomes in the development process. In the fields of business management and other development organisations at both the local and international scales, the challenge of non-implementation of plans and policies continues to pose a major challenge in the way of societal progress (Hill and Hupe, 2006). This issue constitutes one of the themes in this study where the factors in the way of implementing the policies and plans of the Sudanese government on the conflicts are discussed. The discussions in Chapter 6 will bring out that there is simply no necessary relation between public policies/plans and the outcomes experienced at the Empirical level. Stakeholders can simply refuse to comply with the public guidelines. In this connection, one realises that peace and conflicts thus tend to coexist as opposing forces (Bhaskar, 2006).

Johnston (1986: 33) and the broader social research community describe the paradox of public policy non-compliance by making reference to the concept of the *prisoner's dilemma* where the best solution to social progress involves all stakeholders honouring their commitments towards the implementation of public policies and plans. The prisoner's dilemma concept indicates that no stakeholder in programme implementation processes will agree to the implementation of the rules in the policies unless all others do. However, invariably the theory explains that some of the stakeholders often think of gaining some selfish advantages by stepping out of line. Thus, the best solution is that the implementation processes need to be binding to ensure wholesale compliance, maximum cooperation, and therefore maximum benefits to all (Johnston, 1986: 58). Finding out the extent to which the policies and plans on peacebuilding between the crop production-nomadic herdsman activity systems in the Greater Kordofan region are being complied with and the factors explaining the situation thus constitute a theme, which runs through this study.

Herein lies the merit in Figure 1.4. The model indicates how the critical realist concepts of emergence, stratification, causal powers, open systems, human agency, intended and unintended outcomes, and social transformation mechanisms all come together to explain the situation regarding the implementation or non-implementation of the policies and plans for getting rid of the conflicts between the crop farmers and the nomadic herdsman.

With the broad architecture of the conflicts and the related critical realist concepts of stratification sketched out, attention is now turned to Figure 1.5. Since issues of governance, management, policy formulation, and

planning have been discussed as being central in the application of critical realism in social research, considerable attention now needs to be given to the outline in Figure 1.5 to add more value to the introductory discussions to the critical realist research approach.

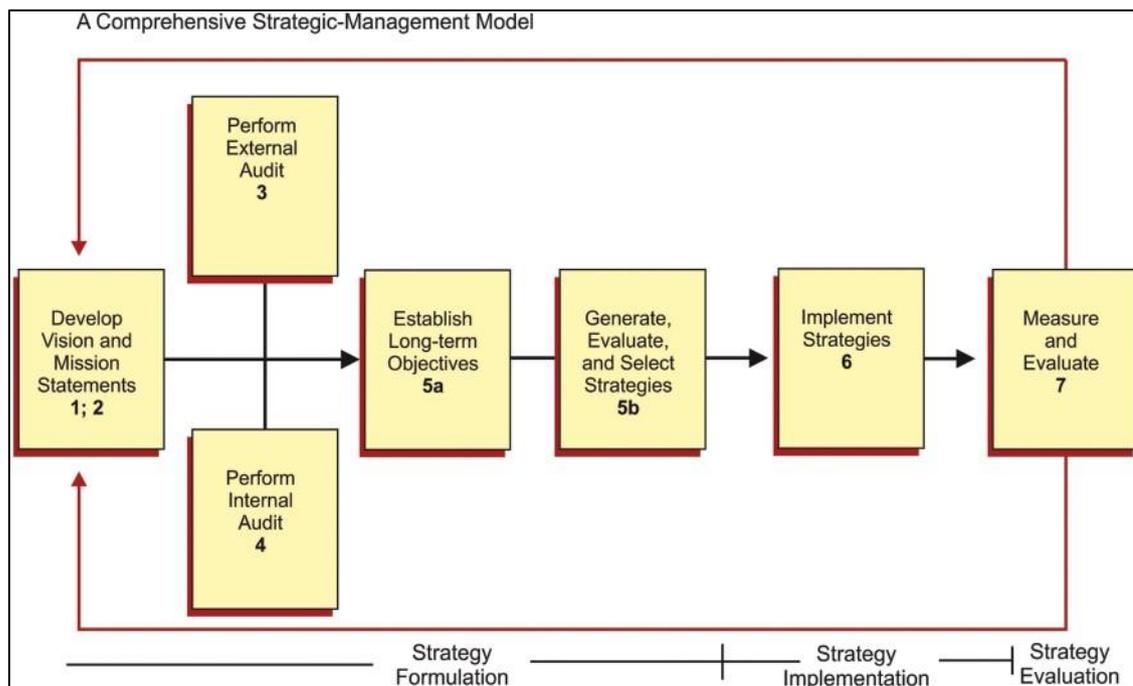


Figure 1.5: An outline of the basic structure of policy/plan implementation in organisational activities

Source: David (2004: 14)

The relevance of basic management and governance principles as outlined in Figure 1.5 has been broadly acknowledged by authorities in the various social science disciplines and management organisations, both locally and internationally (David, 2004). The reason for this wide acknowledgement is due to the fact that the outline in Figure 5.1 has been found to feature in organisational studies, policy analysis, project evaluation, impact analysis, and above all, in issues dealing with explanatory research (the conditions accounting for the existence of certain situations).

Figure 1.5 is of relevance in this study because it helps to bring out those components of policy and plan implementation and monitoring processes of organisations, which do provide the context for concrete actions (David, 2004). In this connection, particular reference is made to Step 7 in Figure 1.5, the phase where organisations do constantly take a step back to evaluate their performance. Step 7 indicates that organisations do reflexively apply the awareness of their situation or historicity to modify the future conditions of their situation. Step 7 is critical because it is at such a stage that issues of underperformance, deviations from some ideal standards, gaps in programme implementation, project backlogs, and other problems could be identified. In this connection, the link between Step 7 and Steps 1 and 2 becomes critical. The model highlights that the information obtained at Step 7 needs to constitute material or input for decision-making at Steps 1 and 2.

An examination of the outline in Figure 1.4 indicates that the Sudan government development policies do involve the issues in Fig 1.5 in terms of steps 1, 2, 3, 4, and 5 in their plans and policies. In critical realist language, it would be said that the strategies under Step 5b in Fig 1.5 consist of guidelines, objectives, and rules for stakeholder implementation. The issues at Step 5b then relate to the guidelines at the Real level displayed in the many critical realist stratification models in this study.

From the foregoing perspective, it further needs to be pointed out that Step 6 in Figure 1.5 represents the actions of agents at the Actual level of the critical realist stratification models. Step 7 in Figure 1.5 will comprise the evaluation of the outcomes associated with the activities concerned at the Empirical level of the critical realist model. It is associated with the evaluation of performance from where the faults, underperformance,

constraints/challenges/problems in the way to achieving the set objectives would be identified. The information obtained from the performance evaluation exercise provides vital information on shortcomings, which can then be used as the basis for finding out the causes of the shortcomings, and the strategies for addressing them. Figure 1.5 illustrates that from Step 7, one has gone back to usher in a new programme of action at Step1. It needs to be mentioned that the basic outline in Figure 1.5 has been found to guide the activities of those government departments in the Greater Kordofan region tasked with addressing the conflicts between the nomadic herdsman and crop farmers of the area.

The guideline in Figure 1.5 also constitutes the general format followed in the operations of organisations elsewhere. According to Benet, Pantuliano, Fenton, Vaux, Barnett and Brisset (2010), the objectives of institutions and organisations can fruitfully be accomplished if they undertake periodic research for purposes of *evaluating their performance*. Holland (2004), Jones (2011), and Logan (2011) add further insights into the importance of measuring and evaluating organisational performance by showing how organisations could use the findings from such evaluations to take important decisions for the future.

The European Union (2012) and the United Nations organisations have also made considerable contributions in this area of organisational performance evaluation (UNDP, 2010; United Nations Environment Programme [UNEP], 2007, 2012, 2013; IFAD, 2009). The theme highlighted in these reports is about the fact that performance evaluation can disclose the nature of the obstacles in the way of achieving the set objectives of individuals and society. The exercise is thus relational in nature by comparing the ideal against the actual, the expected against the

actual, the possible against the actual, and the present state against a better future.

It needs to be mentioned therefore that the various critical realist models in this study are very much based on the outline in Figure 1.5. The relevance of Figure 1.5 in understanding the MELD model, which constitutes the theoretical framework for this study, will be emphasised in Chapters 3,4,5, 6, and 7.

1.4 Background and context

Conflicts between crop farmers and nomadic herdsmen do occur in different parts of Africa. In the West African region, for example, the annual migrations of the nomadic herdsmen often involve crossing the boundaries of other nation states (Abba Gana and Usman Tar, 2008; Egemi, 2008). The causes of the conflicts between the two groups have been related to factors such as the increasing human population growth, the increases in the population of the livestock of the herdsmen, the increasing expansion of the crop production areas; leading to reduced land areas for the nomads, climate change, the lack of intensive farming practices of the crop farmers; leading to their need for and use of large tracts of land for farming, and the inability of the public policies on the conflicts to maintain positive and long term cordial relations between the two groups (Craig, 1991; SOS Sahel International, 2009).

This study seeks to introduce an aspect of theory into the existing knowledge base on the conflicts under study by focusing attention on the concerns, ideas, and aspirations of those linked to the conflicts. The information from the stakeholders concerned fills an important gap in the

existing knowledge that the communities in the Greater Kordofan region have on the conflicts. The aspects of information on the conflicts have emerged systematically through interactions with the stakeholders concerned. Instead of going to the field with some preconceived ideas as to the objectives of this study, the researcher rather allowed the interactions with the stakeholders to dictate the nature of the information disclosed in this study. Thus, through a series of iterative processes, it has become evident that a number of factors, previously unknown, underpin the conflicts. The discovery of causality from such an inductive research procedure constitutes one of the merits of this study.

Through interactions with the various stakeholders linked to this study, it has become evident that the state institutions of the Greater Kordofan region have demonstrated considerable responsibility over the decades in the relations between the crop farmers and the nomadic herdsmen by instituting a number of policy frameworks for ensuring peaceful coexistence between the two communities. Numerous development programmes have also been introduced in the region, specifically to help raise the living standards of the two communities (SOS Sahel, 2008).

Although other bodies such as local and foreign non-governmental organisations (NGOs) are also at work in the region making their own contributions to the solutions to the conflicts, and also establishing other development projects for the benefit of the two communities, the Sudanese state policies in place to provide the required environments for long-term development have been found to be particularly important. This is because these are permanent policies backed by the national constitution of the Republic of Sudan representing an authentic, reliable, and credible source of power and legitimacy for regulating the relations between the crop

farmers and the nomadic herdsman (Chang and Rowthorn, 1999). No other institution or organisation of state, business, or civil society in the sovereign state of Sudan come any close to the powers assigned to the official state policy framework and guidelines for regulating the relations between the crop farmers and the nomadic herdsman of the Greater Kordofan region.

Interactions with the stakeholders have also brought into the picture the need to look beyond national borders of Sudan to find out how external factors impact on local developments. Thus, in this study, the impacts of developments in the countries surrounding Sudan are also brought into the picture by looking at how the activities of Sudanese political armed groups in Darfur and the Nuba Mountains and Blue Nile regions, for example, are using the conflicts between the crop farmers and the nomadic herdsman to achieve certain political agendas. All such information emerged from interactions with the stakeholders associated with the conflicts.

Figure 1.6 provides an overview map of the region surrounding the Greater Kordofan area.

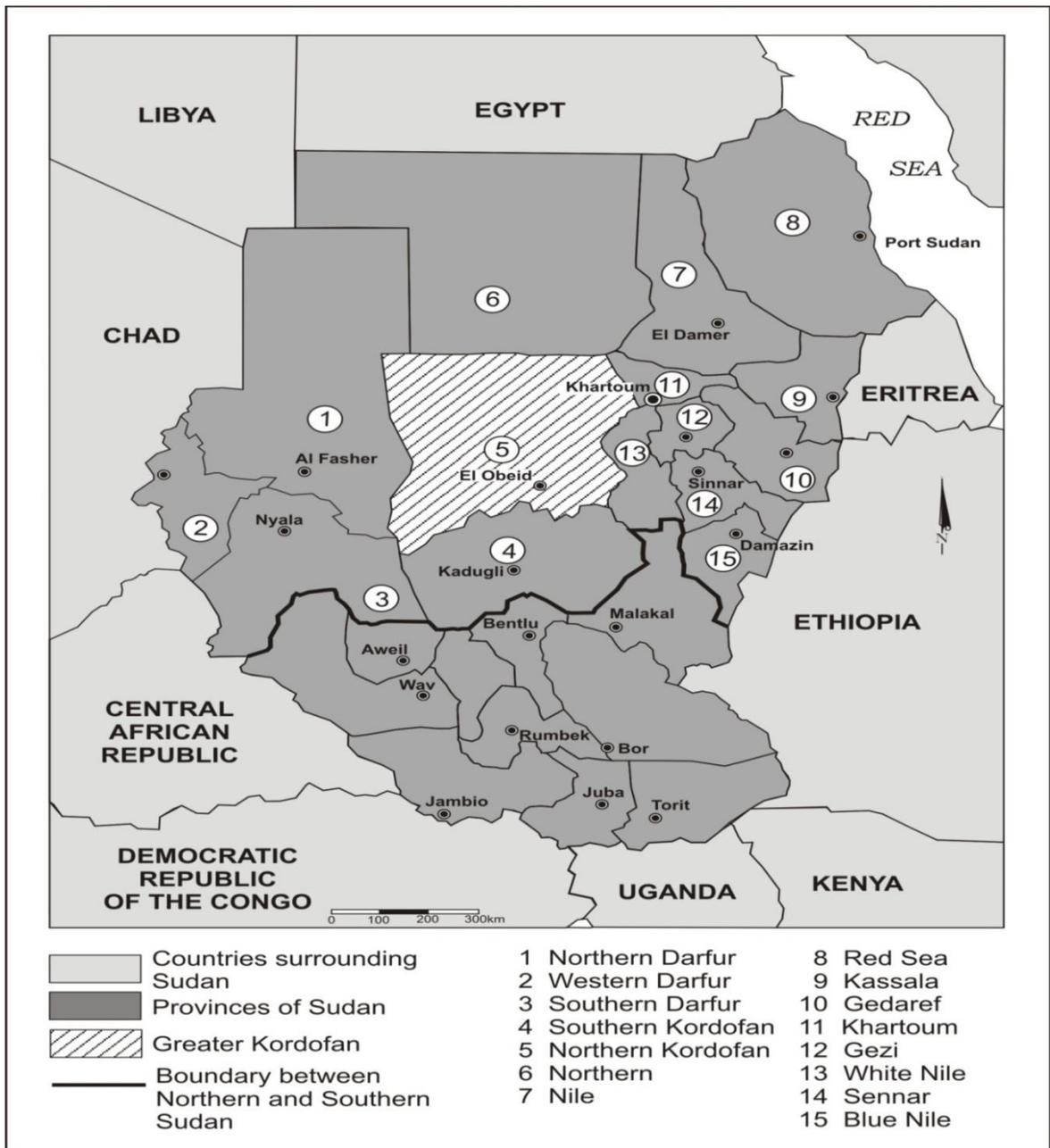


Figure 1.6: Map of Sudan showing the provinces

Table 1.3 provides some statistics on the population distribution in the districts comprising the Greater Kordofan region in 2016.

Table 1.3: Population distribution in the 21 districts of Greater Kordofan states (2016)

District	Population
Sheikan(ElObeid)	518,232
Abu-Jubaihah	165,918
Bara	479,918
Al-Diling	241,289
Al-Rahad	247,149
Lagawa	213,343
Al Nahoud	390,000
Jabrat Elsheikh	85,000
Abu Zabad	126,754
Kadugli	185,752
Wad-Banda	180,000
Al-Rahad	247,149
Al Khwei	101,716
Abyei	90,000
Soudari	270,363
Talodi	98,937
Um Dam	75,000
Um Rwabah	360,000
Kauda	65,000
Gubaish	130,000
Al Salam	110,000

1.5 Importance of the study

The importance of this study can be assessed from a number of perspectives. In the first case, the two activities selected for the study –crop farming and nomadism – represent the livelihoods of the majority of rural households under study. The two communities have used the natural resources of the study region – the climate, vegetation, wildlife, soils, the geology, and drainage system –over the years to produce crops such as gum-arabic, millet, sesame, sorghum, groundnuts, watermelons, vegetables, fruits, and hibiscus flowers. The nomadic herdsman, on the other hand, have used their resources to link up with activities related to the use of horses, donkeys, camels, cattle, sheep, and goats. These activities are indispensable sources for creating employment, incomes, skills development, export relations, and as vital sources of investments in projects for improving the conditions of the drainage systems, the vegetation, the soils, the climate, the geology, and the fauna of the region. It is therefore important that peaceful conditions be created to enable the communities to make the best use of their energies to improve their living conditions while at the same time conserving their natural resources. One importance of this study thus lies in the attention it helps to raise about the role being played by the natural resources in the living conditions of the communities of the Greater Kordofan region.

The study findings indicate that the two activity systems have evolved over the centuries, providing the means of sustenance for millions of rural families. This implies that changes in the operations of the two activities can affect many other activities in the Greater Kordofan region through the numerous linkages that have developed between these activities and the

other sectors of the economy of the Greater Kordofan region. The crop farmers are linked to the food supply situation in the region which very much has to do with issues of life and death knowing the history of famine and drought which is common in this part of the Horn of Africa. The nomadic herdsman, on the other hand, are very much linked to the livestock industry of the Greater Kordofan region. To all intents and purposes then, these two activity systems represent the very foundation on which the economies of the rural communities lie. Any twists and turns, ups and downs, and fluctuations in the activities thus have major implications in the lives of the communities.

Taking the importance of the above into consideration, the implication is that any mention of conflicts on the crop farming and nomadic herdsman activities needs to be taken seriously. As indicated earlier, the Greater Kordofan region lies in a geographical region where the climatic conditions are not the most ideal for rain-fed agricultural activities and livestock farming. Unfortunately, conflicts do exist between the two key players in the rural communities, the crop farmers and the nomadic herdsman depriving them of the maximum benefits, which they can derive from their natural resources. The study thus illustrates how the state institutions need to come on board to help the local civil society organizations and communities to get rid of the conflicts, which have been designated as the one *challenge* which needs to be addressed (Ajawin and De Waal, 1999).

In the third place, the study helps to focus attention on the role of public policies and development plans in the prevention of such natural resource-based conflicts. This study uses the findings to illustrate how the state institutions could better provide effective leadership in community-based

conflict resolution matters. The government officials linked to the activities of the nomadic herdsmen and the crop farmers in the Greater Kordofan region should thus find this study useful.

For the academic community, this study serves to illustrate the importance of human values and meanings in the identification of the relevant explanatory factors needed for understanding social situations. As interactions with the stakeholders expanded, the study was able to identify what the various stakeholders perceive as the factors explaining the persistence of the conflicts between the crop farmers and the nomadic herdsmen under study. These causal factors have been summarised in terms of some 17 variables, which are discussed in Chapter 6. This type of ground-based information is currently missing in studies on the crop farmers and the nomadic herdsmen.

The importance of this study can further be seen in the way it uses the critical realist research approach to make a case for combining elements of descriptive, exploratory, quantitative, qualitative, explanatory, evaluative, and transformative studies in a single study. This property of the critical realist research approach only became apparent as the researcher intensified interactions with the research participants in this study.

The transformative component of the study finds expression in the consciousness, which this study seeks to raise in the stakeholders concerning the opportunities that await them to use the information and other resources they have on the conflicts to address the problems promoting the conflicts. This study thus opens a fresh chapter on publications on the relations between the crop farmers and the nomadic herdsmen by highlighting that getting adequate access to the meanings,

which communities put on their situation, has the potential to produce the understanding needed for positive transformation in society. This study has adopted the dialectic theory, conceptualised in terms of opposing forces (between the imperatives in the forces working to promote peace on one hand and the forces working in the opposite direction) to undertake this project (Callinicos, 1998; Foucault, 2000; Bhaskar, 2008).

From the foregoing, Figure 1.7 thus seeks to indicate the nature of the triangular relationship that currently exists between the two groups and the state policy implementation officials charged with ensuring compliance with the policy and planning guidelines. It shows the state actors working on the plan formulation processes on the one hand and two other key stakeholders operating to implement the plans on the other hand.

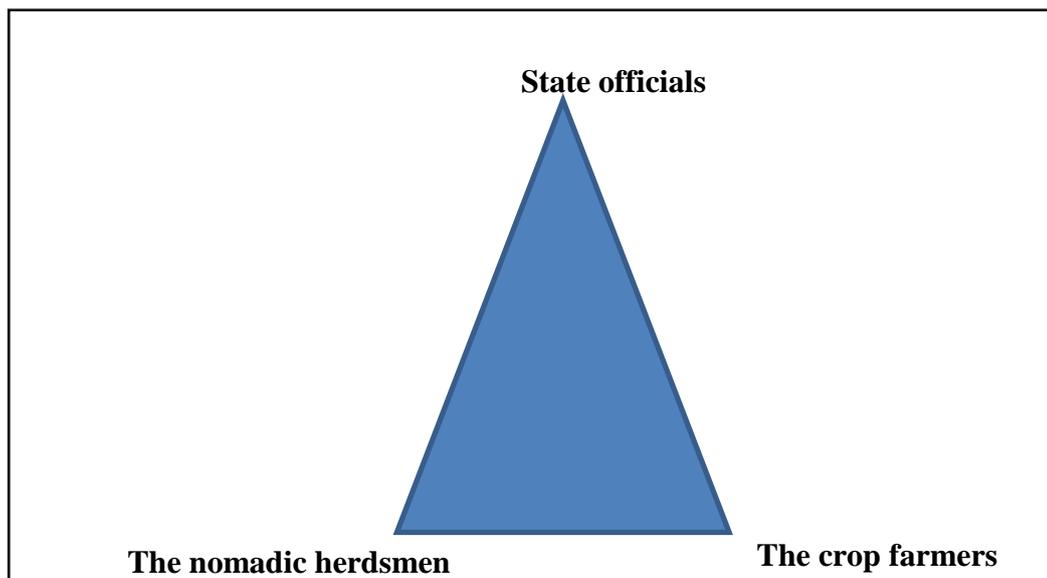


Figure 1.7: The triangular relations between the key stakeholders on the conflicts

In the discussions in Chapter 6, this outline in Figure 1.7 will highlight how the various stakeholders have managed to identify a number of factors, which explain the persistence of the conflicts. This model will be

used to analyse the paradox in which communities know the causes of certain problems but somehow fail to take the necessary steps to get rid of them.

1.6 Research questions

From the foregoing discussions, the following study questions come to the forefront:

1. What is the current state of the biogeographical system in Greater Kordofan, and how have the crop farmers and the nomadic herdsmen interpreted these natural resources from their cultural perspectives?
2. How have conflicts emerged out of the different cultural interpretations of the natural resources?
3. What is the current nature of the Sudanese government policies and plans on the conflicts between the two crop farmers and nomadic herdsmen and the challenges facing their implementation?
4. What factors do the stakeholders linked to the conflicts think contribute to their persistence, and how have they been reacting to those factors?
5. What are the long-term strategies that could be used to get rid of the conflicts?

1.7 Study objectives

The study objectives are as follows:

1. To obtain information on the current state of the biogeographical system in Greater Kordofan and how the crop farmers and the nomadic herdsman interpret this natural resources from their cultural perspectives
2. To find out why conflicts have emerged out of the different cultural interpretations of the natural resources
3. To identify the nature of the Sudanese government policies and plans on the conflicts between the two crop farmers and nomadic herdsman and the challenges facing their implementation
4. To identify the factors that the stakeholders linked to the conflicts think contribute to their persistence and find out how they have been reacting to those factors
5. To discuss the long-term strategies that could be used to get rid of the conflicts

1.8 Study objectives and the related concepts on the social transformation challenge

As already discussed, this study is very much embedded in the challenge people face in their efforts to attain certain ideal development conditions. The very title of this study is structured on the challenges or obstacles which tend to operate as opposing forces against the desires of people distancing them from their efforts at arriving at a certain preferred situation. This distancing or separation phenomenon constitutes a central

issue in this study. The various discussions in this study will be centred on this idea of non-identity, separation, void, absence, and gaps. For this reason, gap analysis features in the dissertation. For purposes of this study, gap analysis is deployed to illustrate how the desires of people from transforming their lives into something better are often blocked or frustrated by certain constraints.

Figure 1.8 and Figure 1.9 have therefore been introduced at this stage of the discussion to give an idea about the nature of gap analysis under consideration. They indicate how gaps can constitute major challenges to the achievement of certain objectives, desires, or aspirations of people. They also highlight that once such gaps emerge in the lives of people, those concerned need to remove the gaps to enable them to be free to pursue the desired imperative of a better life. This study draws upon the information in Figure 1.8 and Figure 1.9 to suggest that the academic community can contribute to progress in society by undertaking research which can identify the nature of the gaps that constrain people from addressing their needs, the causes of those gaps, and how they could be disposed of.



Figure 1.8: Model illustrating the relations between the desired state and the current state as an important starting point in the social research process

Source: Based on Yirenkyi-Boateng, 2016b



Figure 1.9: A model presenting the gap as a call for action

Source: Adapted from Yirenkyi-Boateng, 2016b

The idea behind the two models in Figure 1.8 and Figure 1.9 is to help bring on board the social transformation model of Bhaskar, popularly designated as MELD (2008). The MELD research methodology begins with the identification of what is missing in the lives of people with recommendations as to how those necessary missing situations could be addressed. According to Hartwig (2007: 24), the MELD model is based on the necessity of using the presence of gaps, negativities, opposing forces, problems, and constraints as a resource or opportunity for positive transformation in society. It is based on the idea that human action needs to emerge as necessary responses to the existence of the gaps and other forms of distances that separate ideal situations from the actual situation on the ground, as illustrated in Figure 1.8 and Figure 1.9. The two models are therefore drawn upon to encapsulate the ideas articulated in Bhaskar's MELD model in which the first phase of the social research process, that is **1M**, requires obtaining information on the nature of the obstacles, gaps, or distance between an expected ideal state and the current state of the topic under discussion.

Hartwig (2007: 71) contends that Phase 2 of the MELD model, that is **2E**, **entails** obtaining information concerning what is lacking in the consciousness, resources, or ability of people to take the necessary steps to address the obstacles/constraints concerned. Phase 2E thus represents the realm of searching for information on the processes underpinning the existence of the obstacles, gaps, or distance concerned. The importance of Phase 2E is that it can offer the explanations and understanding needed for empowering people to see the need to get rid of the gaps concerned.

With the situation at Phase 2E settled, Phase 3 that is **3L**, then requires the formulation of what is termed the Holistic causality phase in the MELD

model. Hartwig (2007: 51) indicates, among other things, that this phase represents the new mechanisms, policies, and plans that need to be put in place by those concerned to get rid of the constraints/gaps separating them from achieving their ideal state.

Phase 4, that is **4D**, is termed Transformative praxis. This phase represents the practical steps needed to implement the new policies, plans, and strategies formulated at Phase 3L (Hartwig, 2007: 329).

The aforementioned outline is taken up further in Chapters 3, 4, 5, 6, and 7. They illustrate how the MELD model of Bhaskar has been applied in the theoretical framework, methodology, the findings, and recommendations of this study. In the discussions, it will be argued that the MELD model is not just some abstract philosophical concept but a theory and methodology for addressing practical, social, and development issues.

1.9 Concluding remarks

This chapter has helped to set the scene for the subsequent chapters. It has provided a backdrop to the study. The problem statement has been discussed in terms of various perspectives in which the idea of *challenge* could be conceptualised. It has been argued that conceptualising the challenges facing the stakeholders can be analysed in terms of the constraints separating them from some ideal social situations.

By drawing on the dialectical critical realist research concept of *absence*, the chapters which follow will demonstrate that getting access to information on the disparity between the ideal expected situation and the actual situation can go a long way in helping to draw up new models for

future progress. This refers to information on the constraints preventing people from achieving their objectives.

The critical realist model is based on the idea that people always tend to carry around certain attitudes, values, perceptions, meanings, and orientations that influence how they act, among other things, in relation to public policies and plans. Arbnor and Bjerke (1997:7) summarise this interpretive element of social transformation by stating that “peoples’ ultimate presumptions tend to have a bearing both on how they look at problems and on how they look at existing and available sets of techniques and at knowledge in general”.

The chapters, which follow, will show that this statement is very applicable to the understanding of the way the stakeholders in this study interpret the Sudanese government’s policies and plans for preventing the conflicts between the crop farmers and nomadic herdsman differently to produce gaps between the objectives underpinning those policies and plans and the actual outcomes. It will emerge that while a small section of the stakeholders under study was found to comply with the government plans for addressing the conflicts under study (the intended outcome component), the majority of them (some 85%) were found to belong to the group that could be described as non-compliant, “the problem group”, and therefore what could be described as the source of the challenge of project non-implementation.

The study findings will indicate that critical realism is uniquely placed to disclose the gaps which exist in social life within the complex open systems that underpin human practices. The discussions will be based on the MELD idea that, by taking time to access information on the

constraints of people, one can go far in helping to find long-term solutions to those constraints.

In the next section, the key concepts used in this study are explained. The bulk of the explanations are derived from Hartwig (2007).

1.10 Definitions of key concepts

Absence: This is the basic principle underpinning dialectical critical realist account of social change. Instead of the positive account of change, Bhaskar employs absence or negativity as the motor, which propels social change. This account is presented in four phases (1M, 2E, 3L, and 4D) in the MELD model (Hartwig, 2007: 17).

Causality: This denotes the influences of underlying causal powers of mechanisms and what they are capable of doing in social life by virtue of their nature (Harre and Madden, 1975; Boscovitch, 1996). Concrete outcomes depend ultimately on contingent/external factors related to the actions of the agents or stakeholders located in the Actual level (Hartwig, 2007: 50).

Conflict prevention mechanisms: This refers to the programmes, policies, and plans in place to prevent conflicts in an area.

Critical realist research: Research based on the stratified ontology framework of Bhaskar (Hartwig, 2007: 143).

Critical theory: This is an aspect of social theory, which seeks to change a situation, or condition deemed undesirable. It is very much associated with the ideas of the Frankfurt School (Hartwig, 2007: 82).

Cultural studies: These are research projects indicating the role of culture in influencing social change (Hartwig, 2007: 85).

Development challenge: A basic concept in dialectic theory indicating how problems tend to emerge in social life to prevent people from attaining their desired objectives, wants, and needs.

Dialectics of power: Bhaskar (2008) explains this concept as entailing unequal power relations that tends to increase the levels of inequalities over time (Hartwig, 2007: 209).

Emergence: This is a term used to describe how new objects or situations emerge from interactions. Bhaskar's lamination model illustrates that higher-order levels tend to emerge from lower-order levels, but they also shape, constrain, and enable them (Hartwig, 2007: 125).

Evaluative research: This seeks to provide information on the extent to which some objectives and targets in projects, plans, policies, and other programmes have been achieved. The disparity between the targets and the outcomes can be determined in such evaluations and used as material for future decision-making.

Factor analysis: This is a multivariate statistical technique used to uncover statistical relationships among a number of variables. It seeks to find a way of condensing the information contained in a number of original variables into a smaller set of dimensions (*factors*) with a minimum loss of information.

Governance model: A form of management and public administration system that seeks to give direction to stakeholders in relation to some set objectives.

Grounded theory: A mode of inference or analysis developed by two sociologists, Glaser and Strauss (1967), and it operates reversely from the positivist deductive inference approach. According to Danermark, et al (2005), theory is developed from the data rather than the other way round in the grounded theory research method. This makes it an inductive approach, a method of using empirical data without pre-conceived theories.

Human rights: This is an important aspect of development theory indicating how all sections of society could be mobilised to implement common policies, plans, and objectives

Inferences: This refers to a logical approach to making conclusions from certain premises or conditions. There are inductive, abductive, deductive, and retroductive inferences which can be used to make conclusions (Danermark et al, 2005: 79-114).

Internal relations: The types of qualitative bonds linking stakeholders, events, actions, and other phenomena in terms of causal processes (Sayer, 1992: 24).

Natural environmental system: A system involving the interactions between the geology, soils, drainage system, climate, vegetation, and animal life in a region.

Ontological monovalence: One basis of the critique of the MELD model of the positivist-based Hegelian dialectic theory, which is based on the idea that being is purely positive and present. In place of this perspective of the dialectic and change process, the Bhaskarian dialectic is based on the idea that absence also has causal powers to make a difference in the world (Hartwig, 2007: 354).

Policy analysis: The study of the way public policies are used to produce change in society.

Reductionism: Theory, policies, plans, norms, and practices which tend to leave out certain key elements needed for full understanding for achieving some desirable results. Harre and Madden (1975: 81) maintain that an appropriate conceptualisation model is one based on the principle of natural necessity.

Scorecards: A set of indicators or measuring items used for performance measurement. It features in evaluative research.

Social mechanisms: The policies, plans, guidelines, and rules for purposes of regulating certain operations/activities. In this study, the conflict prevention policies and plans are presented as exemplars of social mechanisms.

Social transformation: A basic reality is a social life in which change occurs through the interactions of certain objects and variables.

Three-tiered ontology: The model associated principally with Bhaskar (1979) which conceptualises social entities as being constituted by three basic interlinked parts – the empirical, actual, and real levels. Based on this basic model, the critical realist model indicates that provincial policies, for example, constitute one important underlying mechanism, which the stakeholders located in the Actual level interpret differently to produce the intended and unintended outcomes at the Empirical level.

Unintended outcomes: Unexpected or anticipated results or impacts associated with some situations, plans, or programmes. Such unintended

outcomes can give indications of the level of the gaps separating the expectations from the actual outcomes.

1.11 Limitations of the study

In pursuit of this study, a number of limitations were encountered that had some impact on the study at various stages. These limitations include the following:

- The major limitation of the study is the vastness of the Kordofan region as the study region, the distance to be covered, and the logistical problems related to data collection. The financial and other resource implications in committing to a study of this magnitude to cover the whole province was the biggest limitation.
- Contrary to expectation, there is limited published information on crop farmers and the nomadic herdsmen of the Greater Kordofan region.
- Most of the people contacted, including the government officials, and the literature available provided limited information on the state of the crop production by the farmers and livestock production by the nomadic herdsmen. Much of the data in this study was thus largely based on interviews conducted in 2015/2016.
- The lack of cooperation from some of the stakeholders such as the crop farmers and the nomadic herdsmen as well as the service providers for the farmers and the police officers was also another limitation at the data collection stage.
- Communication was also a limitation among some of the stakeholders, especially among those who were illiterate and

therefore unable to fully comprehend the issues involved in the questions and the importance of social research in general.

- In terms of theory, and making generalizations from this study, it needs to be noted that this project is essentially based on the inductive method whose findings are specific to the Greater Kordofan region.

1.12 Organisation of the study

In line with the objectives of this study, this work is made up of the following: background and study objectives, theoretical framework, methodology, results, and recommendations and conclusion, which is organised into seven chapters.

- Chapter 1 is the introduction consisting of background and orientation, the importance of the study, problem statement, and the objectives of the study in the Greater Kordofan region, the key concepts used in the study, and the limitations and organisation of the study.
- Chapter 2 sets out to introduce the study region, the Greater Kordofan states or region. It does this by looking at the physical geography background, the evolution of the region as a province, the population dynamics, economic activities, social services, and the Greater Kordofan growth and development strategy.
- The third chapter reviews literature of works on the topic.
- Chapter 4 shows how the concepts discussed in Chapter 3 are applied in this study to disclose the conceptual framework for this study.
- The fifth chapter is concerned with the research methodology used to address the objectives of this study.

- The sixth chapter is devoted to the research findings.
- Chapter 7 contains the recommendations and conclusion to the study.

This chapter thus began with a discussion of the problem statement underpinning this study, through discussions on the conceptual and methodological framework linked to the problem under study, thence, to the nature of the findings upon which recommendations of the study were made. Throughout, the critical realist research approach has been presented as the framework of choice for addressing the study objectives.

CHAPTER 2: SOCIO-ECONOMIC PROFILE OF THE STUDY REGION



2.1 Introduction

This chapter serves to provide some important background information on the history and political development of the Greater Kordofan states or region. This understanding is important in putting the discussions in this chapter in a political economy context. As argued by Ajawin, and De Waa (1999), the developments taking place in the various regions of the Republic of Sudan can better be understood through an understanding of the activities of the central and provincial governments.

Kordofan (Arabic: كوردفان *Kordofān*), also spelt *Kurdufan*, is one of the provinces of The Republic of Sudan. In 1994, it was divided into three new federal states: North Kordofan, South Kordofan, and West Kordofan. In August 2005, West Kordofan State was abolished and its territory

divided between North and South Kordofan States, as part of the implementation of the Comprehensive Peace Agreement (CPA) between the government of Sudan and the Sudan People's Liberation Movement (SPLM). West Kordofan was re-established in July 2013.

Today the Greater Kordofan states therefore cover an area of about 376,145 km² (146,932 miles²), with an estimated population in 2000 of 3.6 million. In 1983, the population was 3 million. The Kordofanian languages are spoken by a small minority in Southern Kordofan and are unique to the region, as are the Kadu languages. However, Arabic is the main and most widely spoken language in the Greater Kordofan region. The region's chief town is El Obeid

2.2 Economy and demography

The Greater Kordofan region is largely an undulating plain, with the Nuba Mountains in the southeast quarter. During the rainy season from June to September, the area is fertile, but in the dry season, it is virtually a desert.

The research projects of Abdel-Ati (2001), Adam (2008), and CARE Sudan (1977) indicate that the study region is famous for the production of gum-arabic (*acacia arabica*). Other crops include groundnuts, cotton, sesame, sorghum, hibiscus flower, and millet. The main tribal groups are Arab tribes, such as Dar Hamid, Kawahla, Hamar, Bedairiah, Joamaah, and Rekabeiah. In Northern Kordofan, there are large grazing areas used and inhabited by Arabic-speaking, semi-nomadic Baggara, and camel-raising Kababish. Nilotic tribes, Nuba, Shilluk, and Dinka also inhabit parts of Kordofan.

2.3 History

About the beginning of the 16th century, Funj from Sennar settled in the country; towards the end of that century, Suleiman Solon, Sultan of Darfur, conquered Kordofan. In 1779, the King of Sennar sent Sheikh Nacib, with 2,000 cavalry, to take possession of the country, which remained for about five years under the government of Sennar. There followed a considerable immigration of Arab tribes and native people from Sennar and Dongola into the country. The Sennari, however, suffered a decisive defeat in 1784, and thereafter under Darfur viceroys, the country enjoyed prosperity. The inhabitants lived in peace and were not troubled with taxes; the merchants were exempt from duties, and the tribute paid was a voluntary present to the Sultan of Darfur. Commerce extended in all directions. Caravans brought products from Abyssinia and Egypt into El Obeid and Bara, from which the greater part was again transported to other parts of Africa. This prosperity ended in 1821 when Mehemet Ali, Ottoman Viceroy of Egypt, sent his son-in-law, Mahommed Bey, the Defturdar, with about 4,500 soldiers and eight pieces of artillery, to subject Kordofan to his power. The monopoly enjoyed by the Egyptian governors in Kordofan impeded trade and stifled entrepreneurial activities.

The Muhammad Ahmad “El Mahdi” captured El Obeid in 1883. The Egyptian government dispatched a force from Cairo under the United Kingdom British General (William Hicks), which was ambushed and annihilated at “Sheikan” to the south of El Obeid. Following British reoccupation in 1898, Kordofan was added to the number of provinces of Sudan. In 1973, the region was split into the provinces “Mudiriya” of North Kordofan and South Kordofan, which became states “Wilayat” in

1994. In 2011, South Kordofan armed conflict broke out in June 2011, ahead of independence for South Sudan. Fighting has since involved rebel groups in “Darfur” and has expanded into other parts of The Greater Kordofan region. Today, the central government has to contend with a number of secessionist movements in Sudan.

2.4 General characteristics and prevailing livelihood systems

Greater Kordofan includes the two states of North and South Kordofan, each of which absorbed part of the territory of a third state formerly named West Kordofan in January 2005. The two states have a combined size of 380,000 km² and a population of about 3.8 million people; about 75% of the population lives in rural areas.

Research projects by USAID (2013) and UNDP (2006b) indicate that the social and ethnic composition of the study region is rather complex, with a variety of groups that can be differentiated on the basis of location, tribal affiliation, and form of livelihood (which in many cases is characterised by some form of mobility). The North-South Sudan conflict formally concluded with a CPA in January 2005 has resulted in internal displacement, particularly in South Kordofan and in the Nuba Mountains in particular. Parts of South Kordofan thus host a sizeable population of internally displaced persons (IDPs). Human development indicators pertaining to literacy, healthcare, and life expectancy in Kordofan compare unfavourably with the averages for Sudan.

Based on unpublished figures obtained from the United Nations Population Fund in Sudan, in 1993 about 29% of women and 52% of men in the region were literate (against 41 and 66% respectively at the national level).

Rural poverty is widespread. According to a household survey conducted by IFAD in May 2004 in Greater Kordofan, destitute households lacking both assets and labour power were around 25% of the total in North Kordofan, 30% in South Kordofan, and 17% in the then West Kordofan. Poor households (those owning few assets and characterised by high vulnerability) were about 30% of the total in North Kordofan and about 45% in the rest of the region, while less poor households (households that can satisfy their basic needs but may be vulnerable to serious crises) were about 26% of the population in the region as a whole. Households headed by women are today disproportionately represented among the poorest, and their numbers have grown over the past decade due to conflict and male migration. The majority of the population of the region depends on activities based on the utilisation of the local natural resources.

Cultivable land is used both by settled communities and by semi-nomadic agro-pastoralists for the production of food and cash crops. Settled communities include both smallholders, who represent the vast majority of farmers in the region, and owners of large mechanised farms, who are for the most part merchants and civil servants originally from the North or from Khartoum. Pastureland is also a key resource for both semi-nomadic pastoralists and settled farmers, some of whom raise livestock. Pastoralist communities in the region include nomadic and semi-nomadic (transhumant) camel and cattle herders, while settled agro-pastoralists usually own smaller animals or cattle. Water resources, including *wadis* and *khors*, are used by pastoralists and also for horticulture production, while agriculture is mostly rain-fed.

Rock excavations, termite mounds, and tree holes are used for honey production, and both settled and semi-nomadic communities for fuelwood,

building materials, edible fruits, and aromatic resin use the forests. Trees that produce gum-arabic have traditionally been an important cash crop and a periodic source of replenishment for fallow soil for farming communities, as well as a source of nutritious foliage for the livestock of camel herders. However, this is less so in recent years, due to a growing practice among gum-arabic tree owners of fencing off areas around trees to keep herders from grazing animals on foliage.

Based on their livelihood systems or their institutional and practical relationship to local natural resources or both, local users are a non-homogeneous group that includes farmers, seasonally migrant pastoralists (some of whom move along stock routes that cross the borders of their states), urban traders, and other non-local investors in farming schemes, oil companies, and government agencies. All of these can be considered natural resources stakeholders in Kordofan, and all have an interest in influencing access to and management of those resources, which are regulated by formal and informal institutions and authorities.

However, not all stakeholders are primary resource users, nor do they have comparable capacity to influence access and management. In addition, they often have conflicting interests with regard to resources, so that stalemate competition is possible and in fact recurrent. One reason for this competition is the fragility of the resource base in the area, particularly water and pastureland: the livelihoods of both farmers and herders largely depend on rainfall, which follows a highly erratic seasonal pattern and goes from an average of 750 mm a year in the south to less than 200 mm in the north of the region. Drought has also become a frequent occurrence in the past couple of decades: the massive drought that hit the area in the mid-1980s triggered substantial population displacement and relocation of

pastoralist groups closer to traditionally farming areas. Additionally, the region has suffered considerable environmental degradation from man-made causes, such as deforestation to expand agricultural land, failure to replant trees on fallow soil, and the development of a petroleum industry that has necessitated the construction of pipelines through farmland and grazing areas. Demographic pressure and the relative inaccessibility of some areas due to war-related insecurity have also reduced the availability of good grazing land for pastoralists, whose growing numbers of livestock (owing in part to growing market demand for meat) have led to overgrazing around water points, stock routes, and villages. This problem has been compounded by growing practices among settled communities of setting fire to crop stubs, collecting them for their use, or preventing herders from grazing their animals on them. This practice is partly the result of growing awareness among farmers that animal grazing on gum-arabic trees tends to limit the production of gum.

It is essential to note that many pastoralist groups only migrate seasonally while maintaining a home base (in other words, they are transhumant, though they may be regarded locally as nomads). Women, children, and the very old are often left behind in these home bases while men migrate; hence, their position during much of the year is vulnerable in terms of livelihood. The security of their resource entitlements have suffered from decreasing soil fertility partly due to increasing land scarcity linked to the expansion of mechanised farming schemes and other factors that have led to a decline in the customary practice of shifting cultivation to allow plots to stay fallow and to benefit from fertilisation provided by livestock grazing on crop stubs. The result has been soil degradation and intensified

pressure on both water and land resources, thus fueling stalemate competition.

2.5 Governance issues

The development processes in the Greater Kordofan region can only be properly understood when seen through the lens of the politics of the country. Today, central government is in charge of giving direction to the nature of the development policies and plans in the various regions and localities of The Republic of Sudan. In view of this, it will be realized that the discussions in the various chapters of this dissertation do pay considerable attention to the roles of the various government departments whose activities relate to the conflicts under study. The theoretical framework of this dissertation as well as the methodology employed indicate that much of the attention is paid to the relations between the crop farmers, nomadic herdsman and those government officials assigned to address the conflicts under study.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

The preceding chapter discussed the socio-economic profile of the study region ending with a mention of the important roles which some government departments are playing, in the conflicts under study. This chapter reviews the various publications on the conflicts as related to the objectives of this study. The literature consulted has been organised on the basis of those that are rather too descriptive, reductionist, and deterministic in nature to those that are interpretivist, and ends by indicating the merits of the critical realist approach in the analysis of the pertinent issues related to the study objectives.

The review is based on the idea that choices exist for undertaking social research. The statement by Arbnor and Bjerke (1997: 7) is thus relevant here. Their position is that the ultimate presumptions of the researcher will have a bearing both on how he/she conceptualises the object of study and therefore on how he/she collects information to obtain the study findings for making recommendations.

The importance of a literature review in empirical research has been discussed by a number of authors. Boote and Beile (2005), for example, have stated that thorough and sophisticated literature reviews constitute the foundation for substantial and useful research projects. Onwuegbuzie, Johnston and Collins (2009) have listed 23 benefits that can be derived from conducting a quality review of the literature. They have summarised the benefits of a literature review under the following:

- Helps to distinguish what has been undertaken and what needs to be undertaken
- In the identification of variables that are relevant to the topic
- In the identification of the relationships between theory and practice
- In helping to distinguish exemplary research
- In helping to avoid unintentional and unnecessary replication
- In the identification of the main research methodologies and designs that have been used
- In helping to identify contradictions and inconsistencies in the existing publications
- In the identification of the strengths and weaknesses of the various research approaches

In undertaking the review of the existing publications on the conflicts under study, the above merits that can flow from the review were acknowledged and served to give direction to this study. Out of the reviews, the researcher has selected the critical realist research model as the theoretical framework for this study.

There are a number of publications on the usage of natural resources which merely present study findings without criticising what might be described as the errors, false belief systems, and other problems associated with the topic being researched. The critique aspect of social research seeks to add such issues to research projects. These include the disclosure of information on problems such as the non-implementation of development policies and plans, environmental pollution, species extinction, the exploitation of the people/workers employed on the natural resource-based activities, the stealing of the indigenous knowledge systems on the natural

resources by powerful businesses and politicians, the possibility of the natural resources attracting foreign interests which might “colonise” the local communities, and above all, the conflicts which tend to emerge between local communities from the exploitation of those resources as is the case in the Greater Kordofan region (Government of Sudan, 2007, 2009, 2012).

Among those advocating for the inclusion of a critique dimension in the research projects on natural resources exploitation, mention can be made of those of Bannon and Collier (2003), Allotey (2005), and Bromwich (2009). The authors argue that merely understanding the cultural interpretations of natural resources can still leave untouched some major contradictions, errors, and other major problems, which could be associated with the usage of those resources. Thus, they highlight the need for communities to always look at the bigger picture by evaluating natural resources as an integral part of the bigger development challenge of the country or locality concerned as a whole. Taking such a relational perspective helps in conceptualising natural resources exploitation as part of a bigger system. In such a case, the resources would be analysed in terms of their relations with the rest of the economy.

Figure 1.4, for example, was introduced to demonstrate how the concept of emergence helps to demonstrate the roles being played by various stakeholders in the conflicts. Sayer (1992: 13-44) and other critical realists postulate that much of the task involved in conducting social research in general needs to demonstrate the way human actors interpret broad social mechanisms such as state public policies and plans differently to create intended and unintended outcomes at the Empirical level. This implies that

the critical realist approach solves the problem of reductionism in social research via the emergentist ontology.

The researcher spent considerable time and effort in synthesising the publications on this topic and consulted widely from the works of Bebbington (1991), Behnke and Scoones (1993), El Sammani, El Tayeb, Abdallah and Sulliman (1984), El Sammani (2001, 2004, 2010), Egemi (2008), Bromwich (2009), and Behnke (2012), among others, in the production of this study. The Sudan government publications on the conflicts between the two communities (Government of Sudan, 2009, 2012, 2013, 2014a, 2014b) have also proved helpful in this study. The publications by international research organisations have equally proved useful. These include the publications by the International Food Policy Research Institute (2007) and the United Nations (UNEP, 2007, 2008; UNDP 2006a, 2006b, 2010).

As indicated earlier, this review is undertaken in the context of the five objectives of this study. The publications discussed in this chapter will end with discussions on the concept of gap or absence that was touched upon in Chapter 1.

3.2 The reductionist problem

One of the major debates in social science research concerns two major positions held on reductionist and holistic approaches in explanations. The reductionist position tends to offer explanations by isolating one of a few variables and using such variables as the basis for explaining the existence of the object concerned. Empiricist-based explanations, for example, tend to confine explanations to some observable events and actions of the

conflict perpetrators and try to make predictions out of them. The variables selected in such research projects thus always invariably fail to satisfy the criteria of credibility, relevance, and reliability demanded from social researchers. Positivist-based research projects belong to this group of research projects. Mamdani (2013), for example, has argued against this reductionist approach to the conceptualisation of African conflicts in general. He contends that the bulk of the responses to such outcome-based research approaches to conflict analysis can only take the form of police and military deployments to arrest the perpetrators, thereby leaving out the underlying motivations, belief systems, norms, role assignments, rules, and guidelines inherent in the conflicts.

Thus, a positivist research on the conflicts between the nomadic herdsmen and the crop farmers would be interested in the measurable impacts of the conflicts, in the numbers of people and expenditures on the conflicts and how such variables can be used to make predictions. The sets of variables would be those concerned with numerical data for making predictions, controlling human actions, and standardisation (Yirenkyi-Boateng, 2016a).

The positivist research approach holds that the objective, empiricist information is the only valid way of finding out the processes, which underpin social situations. It asserts that the only authentic knowledge is that which is based on sense experience and positive verification. It is concerned with the making of empirical descriptions, impact analysis, predictions, generalisations, and statements of a law-like character, which relate to phenomena that are empirically recognisable.

This rather reductionist approach to undertaking social research has been criticised by Nelson and Wright (1995), Manger (2002), International Fund

for Agricultural Development, IFAD (2009), SOS Sahel International (2009) and USAID (2013) . In their critiques, the authors maintain that the empiricist approaches can only describe the outcomes of social processes but not explain the roles of the underpinning mechanisms accounting for the outcomes concerned.

Similarly, the interpretivist approach to conflict analysis has also been criticised for paying undue attention to the meanings and actions of the stakeholders associated with the conflicts without taking into account the broader motivations underlying the conflicts concerned (Castro and Nielsen, 2003; Abba Gana and Usman Tar, 2008). The critique of this approach has come from Nissani (1997), Sulliman (1997), Zartman (1997), Hamilton and Dama (2003), and Hesse and Thebaud (2006), among others, who have made a case for analysing human actions or interpretations via the retroductive method which puts emphasis on the broader structures and mechanisms that provide the relevant motivations and meanings to the conflict perpetrators.

As indicated in Chapter 1, the critical realist explanatory accounts on conflicts are based on a stratified ontology explaining how various mechanisms provide the context for stakeholders to participate in the conflicts concerned. Next, attention is turned to a discussion of how publications on the conflicts which have been based on the influences of the natural environmental systems have been presented.

3.3 The environmental systems influences approach

This approach argues that conflicts tend to emerge largely from the influences exerted by the natural environmental systems. This perspective

posits that resources or endowments of nature as related to the conditions of the geology, soils, climate, the drainage systems, and the natural vegetation can have major impacts on the levels of peace and conflicts in communities. For example, this position asserts that areas of fertile soils, abundant rainfall, and rich biodiversity can be the hubs of development. Such hubs can attract multiples of the population from other regions, which could lead to major conflicts between the host population and the immigrant population or foreigners (Scoones, 1996; Scoones and Thompson, 1996; Bannon and Collier, 2003; Blench, 1996).

The publications on this perspective in the past used to promote the idea of the natural environmental system determining the types of activities that communities had to engage in. Those early publications saw a one-way flow of power from the natural environmental system to the activities of human communities. Johnston (1983) submits that the culture of communities used to be presented as passive responses to the imperatives of the natural environmental systems.

At the same time, there is an aspect of this environment or ecological-based theory, which is that areas that suffer from severe droughts and other ecological problems could be the sources of massive population outmigration, which could negatively have an impact on the development of such resource-poor regions. Thus, Blaikie (1985), Biot, Blaikie, Jackson Blench (1996), Braukaemper (2000), Castro and Nielsen (2003), and others have used the term 'resource curse' to explain how natural resources could promote development and also at the same time generate conflicts under various circumstances.

The natural resources environmental determinism theory has been criticised by those in support of the cultural interpretivist approach who rather see the natural environmental systems as merely presenting sets of options to communities. Those promoting the cultural perspective criticise the environmental determinism school for its undue emphasis on the powers of the natural environment while under estimating those of human actions and cultural interpretations. Attention is therefore now turned to the cultural dimension of the analysis of natural resources.

3.4 The cultural influence approach to the use of natural resources

According to this perspective, it is what people want to do with their natural resources that carries weight. The cultural interpretation approach also puts an emphasis on the feedback relationship that exists between the natural environmental system and human activities. This dialectic approach argues that the natural environmental system influences what people do but that people also do change the conditions of the natural environmental system as they draw resources from it (Blunt, 2004; Mason, Josavama, Nielsen and Viriyasakultorn (2002).

This approach asserts that communities have options in the social world regarding what to do with their natural resources. What the social researcher needs to do then is to make discoveries from the thoughts and actions of the communities concerned. Thus, as argued by Warner and Jones (1998), Suliman (1997, 1999), Shazali (2002), UNEP, IOM, OCHA, UNU and CILSS (2011), YAM (Yahya Abdul Majeed) 2004 and Yahya Abdel Majeed (2008), in the same ecosystem, one typically observes differences in the living conditions of people reflecting the differences in the interpretations of the same natural resources. The cultural interpretation

theory on natural resources is thus about basing explanations on understanding people's cultural lenses, actions, values, and meanings on the natural environmental systems from their own perspectives.

The major advantage of this approach is that the researcher is forced to attend closely to what happens in the social world by providing rich, detailed information on how the natural resources are used, conserved, and treated by those concerned. This approach requires the researcher to look at the natural resources usage from many vantage points or lenses of those concerned – their cultural, religious, economic, ethical, and other social perspectives. How far the natural resources can go in supplying the cultural needs, medicinal requirements, food needs, spiritual needs, trade needs, aesthetic, and other needs thus depends on what the communities concerned have set as the limits to the use of those resources. Thus, Booth (1994) has promoted the idea that approaching the way communities make use of their natural resources should entail asking vital questions about the images and meanings, which they put on those resources. The answers from the questions posed can then yield important analytic statements or interpretations that can be used as the basis for developing grounded theories as articulated by Davidson (2002), Chilisa (2012), and Charles (2008).

This humanistic approach thus pays attention to the role of human activities, value judgements, and routines in influencing the outcomes of social processes. According to Johnston (1986), the basic feature of the cultural approach is its focus on the communities as thinking beings, on people as human rather than as dehumanised responders to stimuli in some mechanical way. This approach thus seeks to understand values, beliefs, and meanings of people, thereby obtaining a deep and sympathetic

understanding of the way such meanings result in concrete outcomes (Blunt, 2004).

The basic tenet of the cultural approach is that it presents social reality as a mental construction in which the world does not exist outside its observation and representation by the individual (Johnston, 1986, 1987). According to Johnston (1986: 56-57), this approach involves the idea that human ordering of their local resources is determined by the people themselves. This perspective states that people build up their own pictures of the world, within which their actions are predicated. The nature of those pictures is determined by the purpose for which those concerned are constructing them. The approach then is based on the idea that human actions are basically subjective. Thus, communities according to their local value systems, which are constantly modified in the light of new knowledge and experiences but whose criterion of truth is internal to the prevailing values, interpret natural resources.

The cultural approach to the analysis of the social outcomes can, however, be deterministic if the researcher concerned does not take care. Researchers can pay undue attention to the causal powers of the value systems of the communities concerned by ignoring the freedoms of the individual households to interpret the cultural norms on the natural resources differently as argued by Harre and Madden (1975) and Johnston (1986:97). Such a cultural reductionist deterministic approach can thus be similar to the natural environmental systems approach.

This cultural determinism approach has therefore also been criticised by critical realists such as Archer (1995) and Archer, Bhaskar, Collier, Lawson and Norrie (1998), Hoyer and Naess (2008), and Bhaskar, et al

(2010). Their position is that the role of individuals and groups in interpreting the imperatives in the cultural mechanisms differently to produce intended and unintended outcomes needs to be taken into account in the research process.

The researcher's position on this cultural perspective on the use of natural resources is that individuals and groups are not passive agents or dupes but actors who have some relative freedoms to produce a variety of outcomes from the same cultural norms. This position is one hallmark of the critical realist research paradigm to which attention is now turned.

3.5 The critical realist approach

The critical realist research approach seeks to address the problem of reductionism in social research by adopting ideas from the merits of the empiricist, interpretivist, structuralist, and critical theory to arrive at its integrative pluralist position. Critical realist research applies the integrative conceptualisation method incorporating information on concrete achievements at the Empirical level with qualitative-based information regarding how stakeholders interpret their norms, development planning and policy guidelines at the Real level.

The critical realist explanatory model postulates that explanations must be sought in underlying structures or mechanisms that underpin the social phenomena concerned. It is based on the idea that there is more to reality than that which is immediately perceived at the Empirical level. Bhaskarian critical realism emerged as an immanent critique of Humean empiricism and its theory of constant conjunction of observable events. Bhaskar's critical realism (1986) developed a form of "transcendental

realism” which offered a critique of Hume’s empiricist ontology by articulating a model of ontological stratification. This position is that explanations cannot be produced through the empirical studies of the phenomena (the positivist position), nor through the understanding of human actions (the interpretivist position), nor through the underlying structures alone (the structuralist position). The approach promotes the idea of integrating the merits of these positions.

The critical realist approach also argues that explanations need to be based on ideas from the different types of research. As contended by Holling (2001: 396) and Bhaskar et al (2010), because reality is emergent, open, and stratified, attempts need to be made to indicate how the disciplines and different types of research tend to mesh and emerge at different levels. The critical realist research approach thus abstracts from the following sources:

- Descriptive/Explanatory research
- Quantitative/Qualitative research
- Realist/constructionist research
- Basic/Applied research
- Observational/Participatory research
- Case study
- Evaluative research
- Longitudinal/Cross-sectional research
- Flatontology/stratified ontology-based research
- Multi-disciplinary/Interdisciplinary research
- Exploratory/Confirmatory, experimental research
- Conservative/Transformative, action research

Thus, from the statistical/quantitative type of research, the critical realist position is that the empiricist idea of using verifiable objective data, for example, can in fact be used to provide descriptive information on the current state of affairs of the conflicts. The empiricist methodology can, for example, be used to collect objective data such as the number of conflicts, incomes lost because of the conflicts, the skills wasted, the number of conflict victims, and the monetary value of properties lost to the conflicts. The numerical changes associated with the conflicts can be analysed with such empirical, verifiable data (Yirenkyi-Boateng, 2016a).

The interpretivist approach can also be used in the critical realist approach to supplement the findings from empirical descriptions by using the open-ended method of data collection to obtain information from the relevant stakeholders on the contributions they are making to either support or prevent the conflicts. Such qualitative information can provide an understanding about the causes of the conflicts (Braukaemper, 2000).

From the other types of research categories indicated above, the findings of this study in Chapter 6 will show that this project is based on applied research; it also combines both observations with the participatory approach. The findings in Chapter 6 will indicate that this project is a case study, which also compares the activities of the stakeholders involved in this study. It is also evaluative, since it evaluates the extent to which the stakeholders concerned are applying the conflict prevention policies on the ground. The study also has a historical element, since it looks at trends in the conflicts over the years. It uses the stratified ontology approach of the critical realist project combining the empirical, actual and real levels, and also from this perspective, it also employs the interdisciplinary research

approach. It is also an exploratory research project because it seeks to disclose how certain developments hitherto unknown have emerged over the years to lead to the conflicts. It is also a confirmatory research in a sense, since it seeks to confirm some key theories associated with the critical realist project. Finally, the study belongs to the transformative or action research project, as it indicates the necessary transformations needed to implement the existing policies and plans on the conflicts between the crop farmers and the nomadic herdsmen of the Greater Kordofan region.

By borrowing ideas from the various aforementioned research paradigms, the approach used in this study thus emphasises that the holistic approach has sufficient merit to serve as the framework for this study. This case for the holistic approach is well articulated by Morrow (1994), Harre and Madden (1975), Kaidesoja (2007), and Mertens (2009). By borrowing useful ideas from the above various types of research, one can notice how a comprehensive ground-based information can indeed emerge from the combinations which could result in research findings which could be simultaneously empirical (aspects of positivism), interpretive (aspects of interpretivism), structuralist (aspects of structuralism), and also critical. By combining the merits of the above perspectives, this critical realist-based study can therefore be seen as gaining its merit on the idea of integration (Yeung, 1997; Sayer, 1992, 2000; Bhaskar, 2008). The benefits emerge from the integration philosophy, which underpins the critical realist research approach.

Emergence, as discussed earlier, is thus evident in the use of the critical realist stratification model which indicates how new situations tend to emerge from certain conditions. According to Best and Holmes (2010), Sawyer (2005) and Hartwig (2007: 125), the concept of stratification is

very much linked to the emergence theory, which illustrates that when a large number of objects are brought together, this can result in completely new phenomena or situation.

Figure 3.1 thus gives a picture of the key elements, which constitute one of the theoretical frameworks associated with the critical realist-based research paradigm. The model indicates that empirical data will have to be collected. The relevant social mechanism (for example, the opportunities and constraints offered by the natural environmental systems or the government plans on the conflicts) will have to be identified or *retroduced*. Information on the various interpretations given by the stakeholders to the social mechanism concerned (that is, the activities linked to the natural environmental systems and the plans) will then have to be collected for purposes of explaining the outcomes. The problems associated with the different interpretations and activities of the stakeholders concerned (for example, the persistence of the conflicts) will then finally have to be discussed from the framework of critical theory and the sustainable development imperative.

Figure 3.1 is thus one of the models indicating how the crop farmers and the nomadic herdsmen to produce the two activity systems are interpreting the general imperatives of the natural environmental systems of the Greater Kordofan states differently. This basic aspect of the critical realist approach is well discussed by Dunleavy and O'Leary (1987) and Chang and Rowthorn (1999).

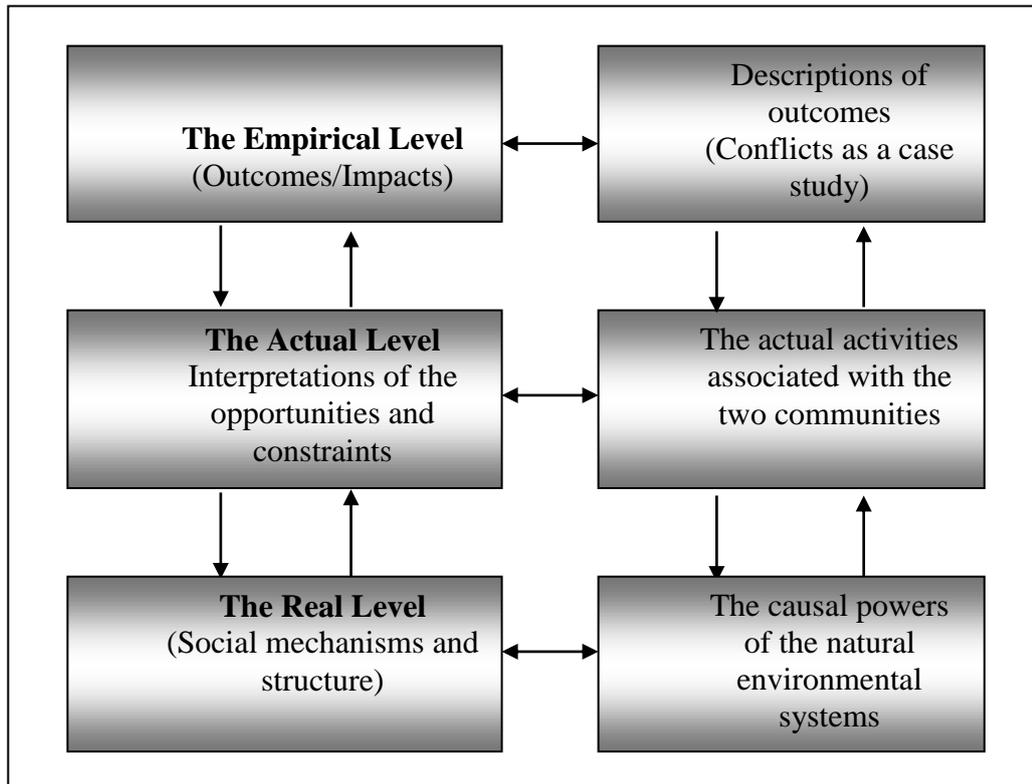


Figure 3.1: Application of the critical realist stratification model from the perspective of the influences of the natural environmental systems

Source: Adapted from Johnston (1986: 52) and Chang and Rowthorn (1999: 26)

The model in Figure 3.1 illustrates one central issue in this study –that is, how the communities are engaging in crop production and nomadic herdsman activities as their cultural interpretations of the constraining and enabling conditions of the general natural environmental systems. The findings on this aspect of the study are discussed in Chapter 6.

3.6 The role of public policies and plans in conflict resolution

Among the approaches to natural resources conflict management and resolution, mention can be made of those based on *Avoidance Strategy*. In this strategy, stakeholders keep the conflict from becoming public knowledge. They do this through *Mediation Strategy*, in which a third party is involved in a process of negotiation. This process of negotiation is done through *Adjudication Strategy*, involving the use of a judge or public administration to make binding decisions. *Negotiation Strategy* is based on a voluntary process in which the groups concerned reach agreement through consensus. Next, there is the *Arbitration Strategy*, whereby the conflict is submitted to a mutually agreeable third party who renders a decision. Finally, the last leg of the conflict management process is through *Coercion*, in which force is used to impose decisions on the parties concerned when necessary (Food and Agriculture Organization [FAO], 1989: 5). The government of Sudan through coercion and a combination of mediation, adjudication, and negotiations is addressing the conflicts between the crop farmers and the nomadic herdsmen.

Figure 3.2 illustrates that the public policies and plans today represent one of the important mechanisms for settling social conflicts. The critical realist stratification model upon which Figure 3.2 is based, will be used in the analysis of the conflicts between the crop farmers and the nomadic herdsmen in Chapter 6. It shows the government policies and plans providing the framework for decision-making by the crop farmers and nomadic herdsmen in the districts of the Greater Kordofan region. The discussions in Chapter 6 will indicate that the policies and plans on the conflicts are in place because it is increasingly being realised by the

stakeholders concerned that they contain the elements of mediation, arbitration, democracy, negotiation, and occasionally adjudication, which are crucial in promoting long-term development (Dunleavy and O’Leary, 1987; Le Roux and Graaf, 2001: 195-212; African Union, 2004; Taiwo, 2005).

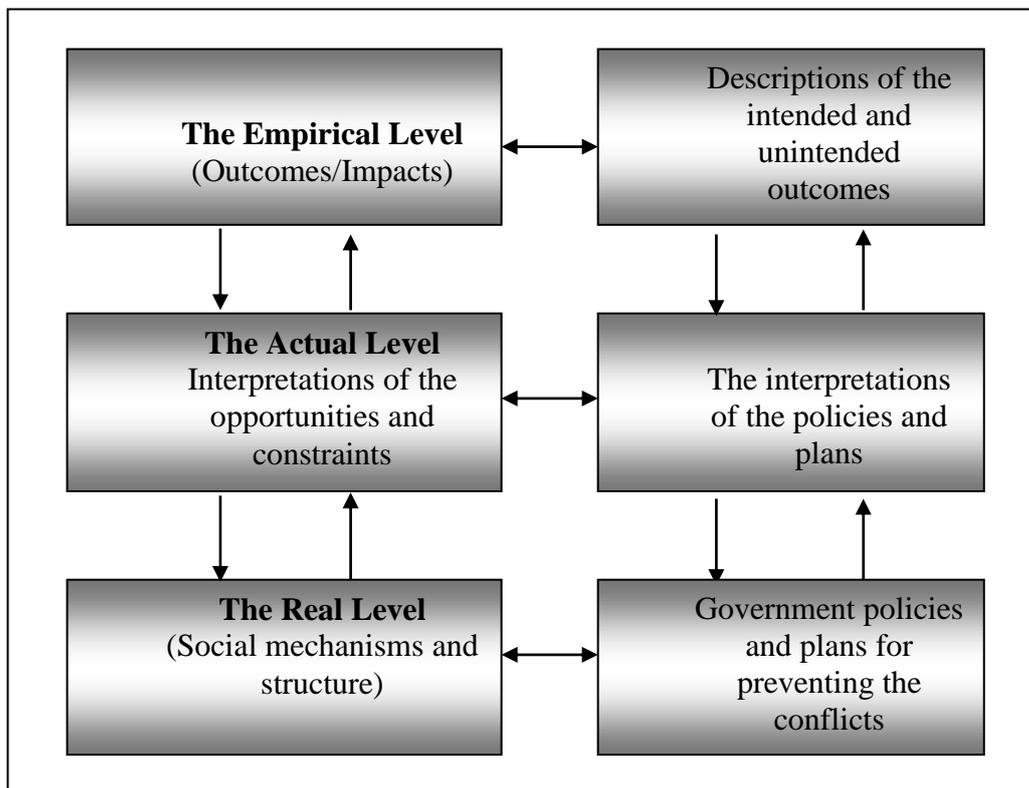


Figure 3.2: The critical realist stratification model of the conflicts from the perspective of the causal powers of government policies and plans

Source: Adapted from Johnston (1986: 52) and Chang and Rowthorn (1999: 26)

As clearly articulated by the African Union (2004: 9), peace is a precondition for development. Thus, the plans on the ground to build peace between the nomadic herdsman and crop farmers under study need to be seen as important guidelines. It will be noted in Chapter 6 that the plans are multi-dimensional in nature, covering a number of sectors and indicating that one cannot separate peace from the development process. Figure 3.2

illustrates that finding solutions to conflicts thus requires finding information not only on the activities of the conflict perpetrators as such but also for finding out the nature of the policies and plans set up by the authorities concerned to prevent the conflicts. From the dialectic perspective, the government policies and plans could thus be seen as opposing forces set up by the state institutions to counteract the activities of the conflict perpetrators as discussed earlier (Pawson and Tilley 1997; Makinde, 2005; Pawdel, 2009).

Winter (2003) agrees that getting access to the nature and objectives of the public policies and plans is central for purposes of understanding how far they can succeed in preventing the conflicts concerned. He argues that this is one important task which the critical realist research project can address. Among the issues that could be addressed in the policies are those concerned with the ideological origins of the policies and plans, the stakeholders who took part in their construction or design, the interests that the policies have been designed to serve, the flexibility of the policies, and the resources available to implement the plans and policies. To be effective, the literature on the conflict prevention policies indicates that the policies need to be formulated on the basis of agreed targets on activities that need to be achieved, performed, and also attained by the stakeholders concerned. Such activities and targets thus need to be communicated to all the stakeholders associated with the conflict prevention process to enable them to agree on the deliverables (FAO, 1989).

From the foregoing, it means the activities of those who have to implement the policies need to be evaluated constantly to find out the extent to which the policies and plans are succeeding or failing in addressing their objectives. Hill and Hupe (2006), for example, contend that monitoring

processes are crucial for obtaining regular information as to how the plans are succeeding in counter-acting the powers of the conflict perpetrators.

Details of the findings on these issues on policy and plan implementation and non-implementation problems appear in Chapter 6. In that chapter, the dialectic between the forces of fragmentation, separation, conflicts, and anarchy in the Actual level on one hand and those of integration, peace, harmony, and coexistence in the Real level on the other are discussed.

Among the merits of the critical realist research model is that one can recognise both the mixed method and the interdisciplinary research approaches. On the mixed method, it could be seen that the empiricist research method is applicable at the Empirical level concerned with facts and figures, whereas the qualitative research method is applicable at both the Actual and Real levels (Green, Benjamin and Goodyear, 2001; Onwuegbuzie, Johnston and Collins, 2009).

Another merit of the stratification model concerns the way it conceptualises the various layers from the disciplinary perspective. This is one feature which has been discussed from the framework of interdisciplinary research (Millennium Ecosystem Assessment, 2005; Hoyer and Naess, 2008; Bhaskar et al, 2010; Price, 2014). On this point, one recognises the government's policy guidelines as belonging to the areas of public administration and governance, and the activities of the various stakeholders derived from the departments and sectors linked to them. A section of the study findings in Chapter 6 discusses this idea of interdisciplinarity. Therefore, it becomes evident that the stakeholders in the crop production and nomadic herdsmen activities together with their service providers and peacebuilding agents come from different disciplines

such as veterinary science, peace and security studies, policy analysis, social work, crop science, public administration, anthropology, impact analysis, business management, cultural studies, geography, and dialectic studies.

Figure 3.2 also illustrates the dialectic between the causal powers of the policies and those of their interpretations by the stakeholders concerned. The model indicates that the two layers at the Real and Actual levels are involved in an apparent power struggle in which any one of the two could be in control at any time. Non-compliance with the plans located at the Actual level can only imply that the Real level has relatively little power or relevance.

Bhaskar's (1991, 2008) exposition of dialectic theory in terms of the struggle between peace and conflicts demonstrates that the dialectic in fact signifies any more or less intricate process of conceptual or social and sometimes even natural conflict, interconnection, and change, in which the generation, interpenetration, and clash of the opposing forces lead to their transcendence in a fuller or more adequate mode of thought or form of life (or being). Bhaskar, on this account, highlights that the dialectic concept could be used to analyse all types of relations comprising those associated with preservation, antagonism, fragmentation, annihilation, and also harmonious outcomes.

Thus arguing from the Hegelian perspective, one can conceptualise the Real level as the thesis that produces, meets, or engenders its opposite, (the antithesis at the Actual level) in the form of the interpretations of people or their attitudes towards the Real level. Hegelian dialectic asserts that the thesis and the antithesis can be in conflict with each other, and that there is

the tendency for this conflict to grow and increase to multiply and to ramify into many areas.

It is common knowledge that a situation of increasing conflict is inherently unstable and cannot be allowed to continue indefinitely. The critical realist approach thus rationalises the existence of public interventionist policies for purposes of getting rid of the conflicts and other problems in society. Thus from the framework of dialectic studies, the Real level will represent the thesis and the Actual level the antithesis working to undo the objectives set in the policies at the Real level. This implies that the Real level needs to constantly feature in critical realist-informed research as the context for concrete action (Hartwig, 2007: 101-106).

3.7 Assessment of conflict resolution policy effectiveness

From the foregoing, it is clear that dialectic theory has much to offer in the analysis of policy and plan failures and successes. Stakeholders always tend to find excuses for not implementing public plans and other initiatives. Such behaviours are always done for a number of reasons. It is because of such unknowns in human behaviour that there is always the need for constant monitoring concerning the extent to which people implement policy and planning guidelines, such as the tasks set and the duties assigned in those guidelines (Giacchino and Khabase, 2003). Information obtained from such evaluations can provide important answers regarding stakeholders who do not comply with the rules and why they do so. Having access to the reasons behind stakeholder interpretations of the public guidelines at the Real level can help to provide answers and better strategies regarding how stakeholders need to act, and therefore also

provide information as to who needs to be given credit and who needs to be cautioned.

Assessing the performance of stakeholders in relation to set policy and plan objectives was briefly touched on in Chapter 1. Hill and Hupe (2006) contend that evaluative research is critical for purposes of laying the basis for future positive social change. Their position is that undertaking evaluative research for purposes of promoting mutual understanding is important but that such understanding needs to be supplemented by strategies on policy implementation processes. The study of Schofield (2001) on the publications on public policy implementation processes provides critical information on the relevance of evaluative research in providing material for addressing practical problems. He makes a case for incorporating action strategies in the process of evaluating compliance in public policies and plans. This action and project evaluation element constitutes an important aspect of Bhaskar's dialectic-based MELD model.

On the above view, Nagel (1999), Peter and Pierre (2003) Makinde (2005), Paudel (2009), Onkware (2015), and Otiemo (2015) have explained why research projects based on policy implementation processes need to seriously take account of the actions of people. They argue that people can always take decisions, which can go contrary to the goals set in public policies and plans. Thus, their position is that one always has to contend with the reality of deviations, difference, gaps, distances, non-identity relations, and voids between the set objectives, guidelines, directives, rules, laws, targets, specifications, standards, agreements, and the actual situation on the ground.

The centrality of gap analysis in this study is thus based on its importance as a theory and as a method of analysis.

3.8 The analysis of gaps: variations around a theme

The discussions that follow elaborate on the various ways in which gap analysis has been conducted from various perspectives. The discussions indicate that the methodologies for the gap analysis tend to differ with some of the approaches beginning with the nature of the gap concerned and following this up with the relevant theory and methodology. In others, however, the theories precede discussions of the nature of the gap concerned. This section of the chapter ends with concluding remarks on the MELD model of Bhaskar based on gap analysis or absences.

Figure 3.3 is an outline which shows how one can conduct Gap Analysis beginning with a first phase of Gap Identification and ending with a Future Needs stage and feedback to the initial phase.

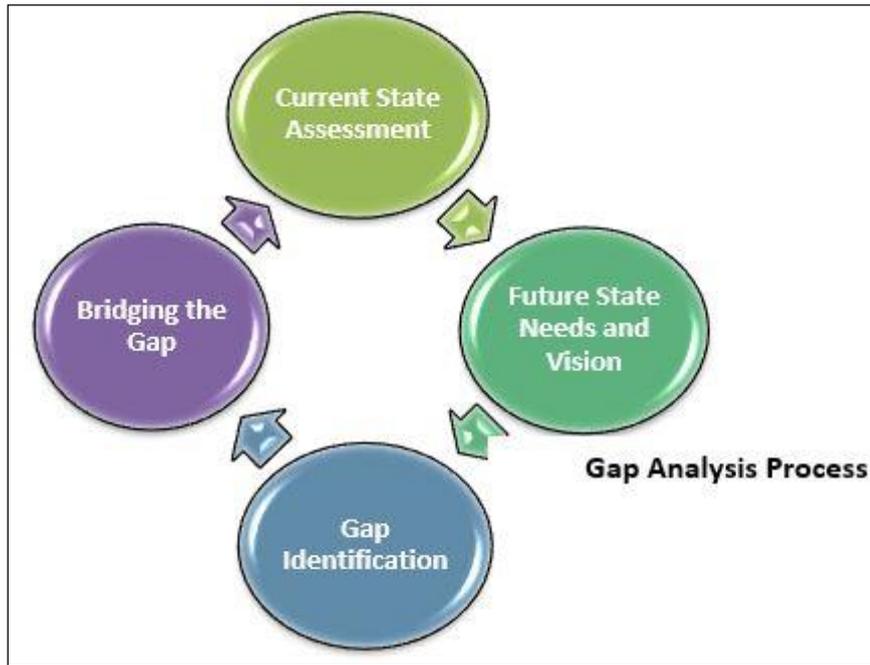


Figure 3.3: A Gap Analysis model of the links between future desire and the current state of affairs

Source: Adapted from Yirenkyi-Boateng, 2016a; 2016b

Figure 3.4 is another presentation of the necessity of identifying the problems, gaps, or constraints separating the current status pertaining to *where we are* and the steps needed to get to the ideal state of *where people want to be* – the state of freedom and progress.

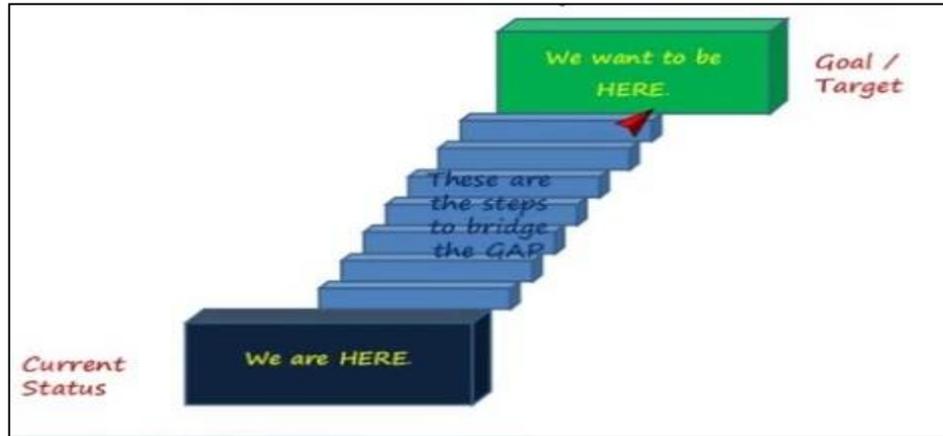


Figure 3.4: Model illustrating the need for addressing gaps in activities as steps to the realisation of desires

Source: Based on Yirenkyi-Boateng, 2016a; 2016b

The models in Figures 3.3 and 3.4 have been introduced as a backdrop to the discussions on gaps that follow. According to Bhaskar, as explained by Hartwig (2007: 17), the initial identification of gaps or problems in social life is an essential first step in the process of finding solutions to societal problems. This initial step then is about the need for identifying the nature of the constraints, gaps, the absence factor, or the non-identity relations between *what is* and *what ought to be the case*.

3.8.1 The critical theory research procedure in the analysis of social challenges or absences

The term “critical theory” was first developed by Horkheimer as a self-description of the Frankfurt School and its revision of Marxism. It now has a wider significance to include any critical, theoretical approach including feminism, culture, and development planning and liberation philosophy (Barrows, 1993; Morrow, 1994; Hartwig, 2007: 82). The approach takes

the issue of gaps seriously by suggesting how a better future can come into being by taking the necessary steps to remove the false ideologies, technologies, political systems, and unworkable norms, policies, and plans in society.

Critical theory is based on the idea that disclosing research findings per se is reductionist. The theory expects researchers to go beyond mere disclosure of current information by paying attention to the nature of the challenges, which stand in the way of attaining better futures. The theory calls on the research community to provide information to the research subjects that can make them reflect on their current activities so that they might see the necessity for future positive social conditions. The theory is therefore normative, since it involves making negative evaluations of certain current problems facing the research subjects.

The approach thus shares a common dissatisfaction with the contradictions that may be associated with the status quo. The approach is practical in that it seeks to provide better self-understanding for the research subjects who would need to get rid of the current negative situations under which they live. It is based on the idea that the negations need to be synonymous with emancipation through the provision of new knowledge for constructing new lifestyles for the improving living conditions.

The procedure of conducting research via the Critical Theory School entails generating information on the current problems and evaluating them from the perspective of variables such as democratic governance, resource ownership, accessibility of the population social services such as water, electricity, incomes, housing, jobs, transport, and communication services

and information. From such evaluations, the approach then expects the researcher to make the necessary recommendations.

Arguing from this critical theory research perspective, Assister and Noonan (2007) thus concur that progressive social research needs to be based on recommendations for changing the status quo for the benefit of the research subjects. The perspective is based on the idea that research projects need to end by incorporating issues of critique and transformation to highlight the point that social conditions cannot be allowed to exist as discrete fixed entities but as phenomena, which can always be critiqued and also become, something other than what they are at any moment.

3.8.2 The Pentagon model

Another methodology for researching the challenges of society has been suggested in a 5-step research procedure by Yirenkyi-Boateng (2016: 112). This methodology relates to his publication on the ethnic, cultural, conflict, and political conflicts in Africa. The procedure is set within the critical realist stratification framework and locates the first phase in the research process of the outcomes of the stakeholder interpretations of public guidelines at the Real level.

The outline that follows, however, indicates a first step in gap analysis which entails having access first, to the nature of the public policies concerned such as the targets set in the conflict prevention processes at the Real Level. The second step then involves obtaining information on the actual achievements or levels of implementation of the policy guidelines at the Actual Level. Comparing the information between the two would then

produce the outcomes at the Empirical level. This would thus entail an exercise in gap analysis.

Figure 3.5 presents the outline of this 5-step procedure. Yirenkyi-Boateng (2016a) demonstrated how this 5-step procedure could be applied in undertaking practical, critical realist research. Because of the five steps involved in the application of critical realism in practical research, Yirenkyi-Boateng suggested the term Pentagon research procedure in the application of the five steps.

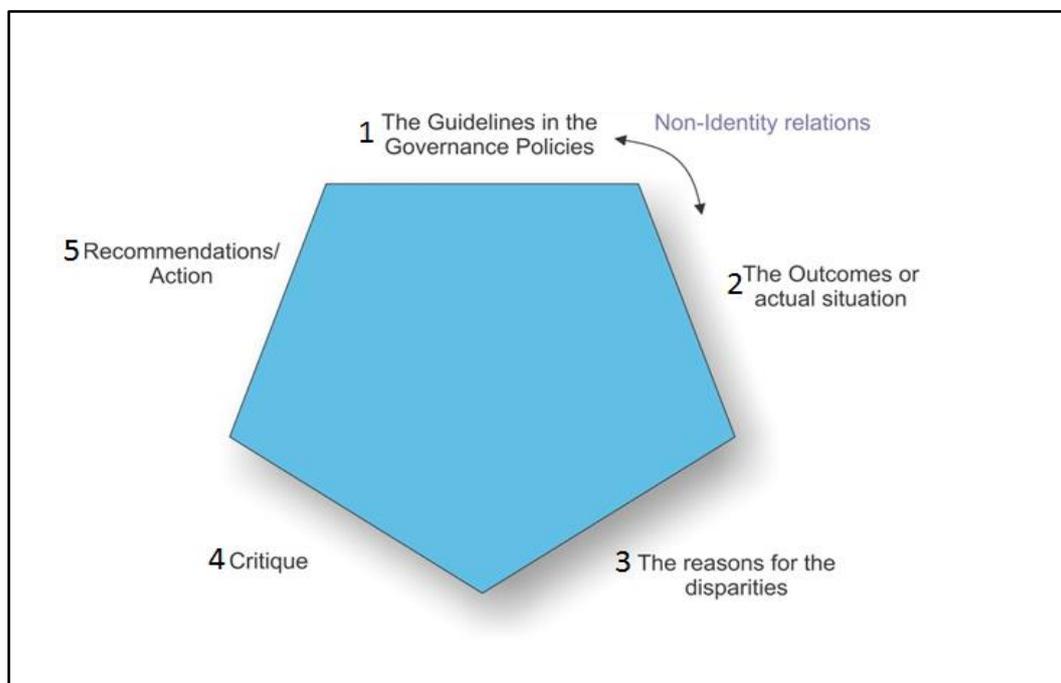


Figure 3.5: A 5-step procedure for undertaking evaluative research from the critical realist perspective

Source: Adapted from Yirenkyi-Boateng (2016a)

The model in Figure 3.5 depicts that the next step (Phase2) would then involve comparing the tasks in the policies with the actual situation on the ground for purposes of identifying the nature of the disparities between the two. Yirenkyi-Boateng (2016a) postulates that the information obtained at

this phase will be crucial in knowing the magnitude of the levels of compliance with the policies concerned. The nature and levels of the gap will be identified at this stage.

Yirenkyi-Boateng (2016a) further asserts that the foregoing would then lead to the next step (Phase 3) of finding reasons for the disparities between the set objectives and targets in the plans and the actual performance. The information obtained at this phase would provide vital knowledge on the causes of the gaps. The fourth step in this model will involve offering critiques of the activities of the stakeholders. The fifth step then is concerned with the making of recommendations. This final step would then entail formulating new plans as depicted at Stage 1, thus completing the circle.

3.8.3 The DREIC model of Bhaskar

One of Bhaskar's model or procedure for conducting research has been described by Danermark et al (2005: 193-196) and Bhaskar et al (2010: 15) as involving movements between the "abstract" and the "concrete", that is between the Actual level and the Real level. Their research procedure or outline has a number of steps which are as follows:

- A description of the event that is the object of investigation (the problem of lack of implementation of policies)
- An analytical division of the event into its components
- A redescription of these components as seen through theories of the social mechanisms and relations
- Through redescription, finding the operative mechanism behind the event

- An evaluation of the explanatory power of the mechanisms, compared with those postulated by other theories
- Concretisation in order to record how the mechanisms involved produced the event and outcomes in question
- Using the findings from the concrete study to make recommendations for the future.

A discussion of the Hegelian research procedure now follows.

3.8.4 The Hegelian dialectical approach to gap analysis

The procedure in this approach is based on a 3-phase model, as articulated by Inwood (1992: 116). It comprises a movement from thesis to antithesis to synthesis, articulating the path to future prosperity.

According to Hartwig (2007: 166), Hegelian dialectic indicates that social change tends to occur from a pre-existing situation or object (the thesis), which tends to attract or lead to the emergence of an opposing force (the antithesis). The model argues that conflicts would emerge under such circumstances, thus requiring a solution to the conflicts or the challenges concerned in the form of setting up a compromise or synthesis.

The procedure for conducting research under the Hegelian model would thus entail following a 3-stage procedure. Applying this methodology on the conflicts under study would thus imply that the conflicts between the thesis (the interests of the crop farmers in this case) and the antithesis (the interests of the nomadic herdsmen) need to be eventually resolved into a synthesis or some form of compromise in the form of new plans, agreements, programmes, and other mechanisms for establishing a future phase of peaceful coexistence between the two.

The critique of Bhaskar (2008) of the Hegelian model is based on the idea of ontological monovalence, the idea that being can only be purely positive and present (Hartwig, 2007: 354). Against this positivist-based Hegelian transformation model, Bhaskar contends that by posing a question such as *what does the existence of a certain situation presuppose*, one can actually find the answer in the absence of certain important conditions such as the lack of political power, the absence of peace between communities, the lack of democracy, lack of civic education, financial resources, appropriate technology, the ideal climatic conditions, and other essential conditions. Bhaskar has thus outlined an alternative 4-phase transformation model based on absence which is discussed next.

3.8.5 The MELD model and gap analysis

This chapter on the theories on conflicts will end with reference to the relevance of the MELD model of Bhaskar to the topic. As mentioned earlier, instead of Hegel's three phases of thesis, antithesis (negation), and synthesis, Bhaskar's MELD model rather makes use of four phases of non-identify (1M), negation (2E), holistic causality (3L), and transformative praxis (4L). The MELD model thus seeks to explain how to move or emancipate one's condition from the current state of problems/challenges to one guided by or grounded in principles of freedom from the constraints concerned.

Bhaskar puts particular emphasis on the role of education and other awareness creation programmes in bringing to the attention of stakeholders the nature of the constraints and other forms of contradictions which constitute the obstacles or gaps in their efforts at attaining their desired objectives. The MELD model thus argues that getting rid of the gaps,

voids, constraints, contradictions, errors, and other forms of problems in society constitutes a principal feature of the requirements for progress in society. The model posits that constraints or gaps need to indicate opportunities or openings for movement. Without such openings or absences, Bhaskar maintains that there can be no justification or basis for movement. Negativity, defined as the process of absencing or the lack of information concerning the causes of the persistence of the constraints concerned (2E), thus constitutes the justification for change in the MELD model (Bhaskar, 2008: 5). He therefore contends that the more people are provided with information about the nature of the constraints in their lives – about the causes of their frustrations, poverty, lack of progress, the conflicts in their society, and other problems – the more prepared they will be to abandon their old ways and adopt new models for getting rid of those constraints. The awareness creation dimension of the MELD model is thus based on the idea that if people are provided with information which could make them become better aware of their constraints, the more they will be prepared to support new initiatives for disposing of their problems.

From this absence-based perspective of reality, Bhaskar thus postulates that the lack of action for addressing negative situations such as the conflicts under study can thus constitute the relevant explanatory factors. Thus, his four phases of non-identify (1M), negation (2E), holistic causality, (3L) and transformative praxis (4L) present:

- 1M as the identification of the problem or challenges concerned
- 2E as the identification of those critical missing factors needed for addressing the challenges concerned; that is the lack of action or solution to the problems concerned

- 3L as entailing the formulation of new strategies for dealing with the missing factors
- 4L as entailing the implementation of the new strategies at Phase 3L and using the findings as the basis for searching for new gaps, absences, and constraints

In Bhaskar's MELD model, Phase 2E thus stands as central, involving the identification of the relevant constraints preventing or absenting the existence of the desired conditions concerned. In this study, the nature of the constraints or the problems accounting for the persistence of the conflicts between the crop farmers and the nomadic herdsman (despite the existence of the plans for dealing with them) is thus presented in Chapter 6 as being synonymous with the lack of the relevant action on the part of stakeholders to implement plans. Thus, the answer to the question why the conflicts between the crop farmers and the nomadic herdsman persist is addressed in Chapter 6 from the perspective of *the absence of certain actions on the part of certain stakeholders*.

From the MELD perspective, the model in Figure 3.6 could be used as one interpretation of the Bhaskar model in which the *where you want to be* phase represents the 3L phase of holistic causality. It represents the objectives behind the policies and plans for establishing peace between the crop farmers and the nomadic herdsman. It thus represents the ideal situation that the stakeholders are working towards. Thus, any obstacles such as the gap in Figure 3.6 (representing the distance between where people desire to be and where they are) represents the challenges or constraints in the way to reaching the objectives in the plans for promoting peace.



Figure 3.6: Model presenting the distance/gap between the desires of communities to their current situation as the challenge or obstacle facing change/transformation

Source: Based on Yirenlyi-Boateng, 2016a; 2016b

From the outline in Figure 3.6, the 4L phase thus represents the actions that need to be taken to enable the gap indicated to be removed. Bhaskar argues that Phase 4L represents the call for action for people to get rid of their constraints, gaps, absences, and other contradictions in their lives. This is a phase which has been described by El Harizi (2003) and others as one of empowerment and emancipation.

3.9 Concluding remarks

This chapter has reviewed the literature on issues and key concepts deemed relevant to the study on the conflicts between the crop farmers and nomadic herdsman of the Greater Kordofan region. Out of the review has been discussed the nature of the model which will constitute the theoretical

framework for this study. In undertaking the review, a number of points have emerged which are as follows:

- The role of the natural environmental system in providing a number of natural resource-based development options to rural communities of the study region
- The role of culture in providing a broad context for the rural communities to make use of their natural resources
- The way in which conflicts can arise from the different interpretations of natural resources
- The way governments can use public policies and plans to address conflicts arising out of the different ways in which communities use natural resources
- The importance of incorporating awareness programmes as a tool for empowering communities to better address their needs

The review has made it clear that any social research project which only looks at part of reality such as the natural environmental systems, culture, or government policies separately can only provide partial and distorted perspectives of social reality. To be practically adequate, this chapter has argued that the crop farmers-nomadic herdsman conflicts research agenda at this time in the development of the Greater Kordofan region needs to be necessarily empirical (descriptive), interpretive (explanatory), critical, and transformative (conflict resolution and long-term future sustainable development-based).

From the regional development perspective, the discussions have also demonstrated the importance of linking information from the micro-spatial units (the 21 districts) to the broader development of the Greater Kordofan

region and the Republic of Sudan as a whole, since the districts operate in the context of the national development plans. In a similar vein, from the temporal perspective, the review has also demonstrated the need for linking the present to the long-term future in order to ensure that the solutions designed today can have relevance tomorrow.

Above all, this chapter has conceptualised the dialectical forces in social being, largely in terms of the dialectic relations between the Real and Actual levels in the critical realist lamination model. The issues discussed in this chapter point clearly to the important role of the Actual level as a key source of power and change. The discussions have emphasised the need for stakeholders to believe in their ability to get rid of their challenges and other forms of frustration which stand in their way to progress. It is to the details of such a framework that attention is now turned to the next chapter.

The next chapter focuses on the conceptual framework of this study.

CHAPTER 4: CONCEPTUAL FRAMEWORK

4.1 Introduction

The foregoing chapter ended with accounts of the various approaches used for analysing social situations in general from the causes to recommendations for resolving them. The discussions ended with an account of how the critical realist framework can serve as a model of choice. This chapter summarises the key features of the critical realist concepts with indications as to how they are applied specifically in this study. The concepts discussed also serve as propositions which feature in the methodological framework and also in the findings of this study.

The conceptual framework outlined in this chapter thus indicates the position taken in this study regarding ontology, epistemology, methodology, and recommendations (Sayer, 1992: 17; Yeung, 1997: 53). The framework very much encapsulates the point advanced by Arbnor and Bjerke (1997: 7) and the broader social community, which indicates that paradigm choices always exist in the conduct of social research. The critical realist-based discussions articulated in this chapter serve to strengthen the idea that the way social researchers think the world is (ontology) influences what information they think could be obtained about the object of study (epistemology); how they think it can be investigated (methodology and research techniques); the kinds of explanations they think can be constructed about it; and above all, the political and policy stances they are prepared to take in terms of recommendations.

Below, the key elements of the critical realist position for addressing the objectives of this study are summarised under a number of headings.

4.2 The independent existence of reality, stratification, open systems, and causality

The critical realist research approach is based on the idea that the objects of the research process exist in their own right outside the human mind that recognises or perceives them. It thus acknowledges the independently existing social being as the context for knowledge production. Danermark et al (2005: 69) posit that knowledge is given to people through prior real structures of the world which constitute an irreducible reality and that the task of the social researcher is to accord a privileged role to ontology in their search for information. Thus, they contend that people's claims on knowledge and methods must be adapted to the nature of the object they study if their research findings and recommendations are to be credible, reliable, and relevant.

In light of the foregoing, the critical realist approach argues against the strong constructionist position, which conceptualises social reality as a mere mental construction without any independent existence. The critical realist position is that social being always has its pre-existing nature made up of parts which interact in various ways and that the task of the social researcher is to provide as true an account of the relations inherent in such objects as possible.

On the nature of social being, critical realism is a critique of the positivist research approach which Bhaskar (1986) argued cannot go beyond surface appearances. The critical realist critique of positivism is that it suffers from the problem of "epistemic fallacy", entailing the conflation of what people observe and experience with what constitutes the whole of reality. Instead of confusing what people know with reality, critical realists rather argue

that reality is independent of human knowledge and needs to be conceptualised as such in terms of the processes which underpin it. Searching for the processes which underpin reality then brings into the picture the many mechanisms lying beneath surface appearances. Thus, instead of the flat ontology associated with positivist research, critical realists talk of ontological depth. Ontological depth or stratification based on open systems thus constitutes a key element of the critical realist conceptualisation process.

On this idea of independently existing critical realist ontological view, this study thus asserts that the conflicts between the crop farmers and the nomadic herdsmen operate out there in open systems. This is made up of an empirical layer which is created by concrete human action, which, in turn, is an interpretation of some social mechanisms such as the government policies in place to regulate the actions of those linked to the conflicts. It is on the basis of this that the basic 3-tiered ontology made up of the Empirical, Actual, and Real levels features so much in this study.

The critical realist research approach illustrates that the number of layers adopted in particular research projects will depend on the nature of the study concerned. The layers represent the mechanisms, which account for the existence of the object concerned. They are associated with causal modelling of the processes, which produce change. Thus, Price (2014), for example, made use of seven layers in her study into the processes underpinning violence against South African women. Yirenkyi-Boateng (2016) made use of three layers in his analysis of the religious, ethnic, economic, and political conflicts in Africa. His other critical realist-informed research projects are based on layers reflecting the nature of the objects under investigation.

4.3 Emergence in its various forms

The concept of emergence is central to the critical realist conceptualisation process. This idea is a critique of the positivist research approach which only recognises one layer in its explanations. The positivist notion of correspondence between theoretical and observational terms thus narrows the meaning and role of explanations to the expression of observed regularity of events. The concept of emergence in the critical realist research model goes beneath the observable layer at the Empirical level to examine the influences of underlying mechanisms such as the natural environmental systems, the culture, and the policies and plans of the government. The approach situates itself in a stratified context in the complex interweaving of a list of social mechanisms and their causal powers (Hartwig, 2007: 125).

As was discussed in Chapter 1, the natural environmental systems can provide underlying conditions out of which can emerge various human responses. Corning (2002), for example, presents emergence as entailing a situation in which qualitatively new outcomes emerge from the interaction of certain underpinning forces. With reference to this case study, the emergence concept explains how the vegetation and animal life of the Greater Kordofan region constitute the outcomes of the interactions between the natural drainage systems, soils, and the climatic conditions of regions and how these, in turn, have provided opportunities for the rural communities to engage in various activities.

Alcorn (1995) has demonstrated that communities always have the freedoms to decide how to make use of the natural resources of their localities. From the cultural perspective, Swidler (1986), Spencer and

Thomas (1998), and Blunt (2004) have also indicated how communities develop different cultural lenses from their natural environmental systems. They submit that there is no necessary relationship between the natural environmental systems and the type of activities communities have to pursue. The cultures that emerge from the natural environment are presented as human constructs, which relate to what the communities perceive to be their needs (Assister and Noonan, 2007). In the long run, however, it is argued that the cultures need to sustain the natural environmental systems to ensure continuity and sustainability. Careless exploitation of the natural resources can only lead to their ultimate exhaustion or their extinction. This study discusses in Chapter 6 how these ideas on the role of culture in the use of the natural resources of the study region relate to the conflicts under study.

A number of authors have discussed the links between the cultural interpretation of natural resources and the conflicts arising from them. Buckles (1999), Braukaemper (2000), Abba Gana and Usman Tar (2008), and Bennet, Pantuliano, Fenton, Vaux, Barnett and Brisste (2010) assert that where communities living in close proximity interpret the same natural resources from different angles, conflicts can develop between them. This link between natural resource exploitation and conflicts is one aspect of the phenomenon of “natural resource curse” (Ross, 2003). This need not be the case, however.

The reality is that there are in fact cases where certain communities seeing the same natural resources from different angles use their different products as the basis for mutual understanding, trade, and exchange (Spencer and Thomas, 1998). The norms of reciprocity, specialisation, and exchange can become the basis of the relations between communities that

see the same natural resources as mere “variations around a theme” and therefore the basis for peaceful coexistence. The study findings in Chapter 6 present the current conflicts as a mere negative manifestation of contingent relations. There is no reason why communities should engage in violent conflicts because of the different lenses used to interpret their natural resources. Craig, Hall and Mayo (1998), Bannon and Collier (2003), and Bromwich (2008) thus justify why state institutions and other organisations need to work hard to use education and other tools to convince people about the need and possibilities of replacing the conflicts in their communities with peace.

This study thus supports the idea of using conflict prevention policies, plans, and other supporting programmes as tools for peace-building in the exploitation of natural resources. Such initiatives can oppose, counteract, and eliminate the conflicts. Finding long-term solutions to social problems is one central theme in the critical realist dialectic discourse. It is in this respect that international organisations such as The European Union and United Nations (2012) research project stressed the need to strengthen natural resource-based conflict prevention policies and plans as tools for promoting sustainable development in various communities and nation states.

It is significant that the Sudanese government documents (Government of Sudan, 2013) on the conflicts between the crop farmers and nomadic herdsman of the country highlight the need for peace. One common public experience and impression is that the policies and plans for peace-building have so far had limited results. The impression is that considerable gaps exist between the objectives and targets set in the plans and the actual outcomes on the ground. One challenge then is for the academic

community to disclose information about the nature of the gaps, their impacts on the persistence of the conflicts, and recommendations on how to get rid of those gaps. One objective of this chapter is to demonstrate how state power can be used to help communities implement the plans in place to build peace between communities, seeing natural resources from different lenses.

4.4 The critical realist framework and the non-implementation of public policies and plans

One challenge in the fields of development planning and policy analysis concerns those attitudes of stakeholders which tend to undermine the efforts of implementing certain programmes, plans, agreements, and guidelines (David, 2004). This problem arises from the ways in which certain stakeholders decide either to comply or not to comply with the rules of the game, or face situations, which might make it difficult for them to apply the rules. The different attitudes of stakeholders to public guidelines therefore account for the phenomenon of intended and unintended outcomes. The critical realist approach is suited for analysing this problem. It locates the intended and unintended outcomes in society from the open nature of society in which agents have relative freedoms to act otherwise. According to Danermark et al (2005: 68), the problem of predicting social events and process is a consequence of the open systems associated with society. They trace the different outcomes associated with social mechanisms to the relative freedoms agents have in taking decisions.

The role of human agency in producing intended and unintended outcomes thus becomes central. This phenomenon has been discussed by Scoones (1996), The Organization for Economic Co-operation and

Development/Development Assistance Committee (ECD/DAC,1995), Tyler (1999), Holland (2004), UNDP (2006a, 2006b, 2010), UNEP (2012, 2013, 2014). The different outcomes that emanate from the different ways stakeholders interpret public guidelines, policies, and plans have been applied in the various social science disciplines including business management and development planning (David, 2004). One common area where the phenomenon of intended and unintended outcomes of social processes has been applied is therefore in the area of the implementation of public policies and plans.

It has been argued that in cases where the non-implementation of public policies and plans exist, attention needs to be focused on the source of the non-implementation processes (Castle, 1992; Booth, 1994; Nelson and Wright, 1995; Kerkhof, 2000; Shackleton, 2002; Castro and Nielsen, 2003). From this perspective, Dunleavy and O'Leary (1987), Le Roux and Graaf (2001), Giacchino and Khabase (2003), and Shockley (2006) have thus made a case for getting access to the mindsets of those with the objectives and inclination for not complying with the set objectives, guidelines, and assignments.

The problem of the implementation and non-implementation of public policies and plans is particularly relevant in this study. This study is in fact based on the idea that the analysis of the conflicts under study really gains its deepest meaning when set inside the broader framework of public policy and development plan implementation challenges. The government departments of the Republic of Sudan have been central in formulating various policies and plans for addressing the conflicts under study for well over 100 years. The one common knowledge is that the policies and plans are not being implemented.

The basic approach initially adopted in this study was to concentrate on the relations between the crop farmers and the nomadic herdsman. However, the more the researcher delved into the dynamics of the conflicts, the more it became apparent that the bulk of the processes were happening within the broader context of implementing the regulations of the central and provincial Sudan government. This study is thus based on a conceptualisation model in which the policies and plans of the government departments are seen as playing critical roles.

This is the basis of the information indicated in Figure 4.1. The model shows that one cannot understand the conflicts under study in the absence of the regulations and other resources of the government. The model highlights further that one cannot predict the outcomes or impacts of the government plans and policies simply from knowledge of the nature, constitution, or objectives of the policies, since the stakeholders always have some degrees of freedom not to implement the guidelines. This reality of the different interpretations of social mechanisms thus explains the existence of the two broad classifications of outcomes at the Empirical level of the critical realist stratification model: the desirable and undesirable, the expected and unexpected, and the intended and unintended outcomes.

The MELD model of Bhaskar (2008) explains that the different interpretations of stakeholders largely accounts for the existence of gaps between the expected and the actual situations as depicted in Fig 4.1.

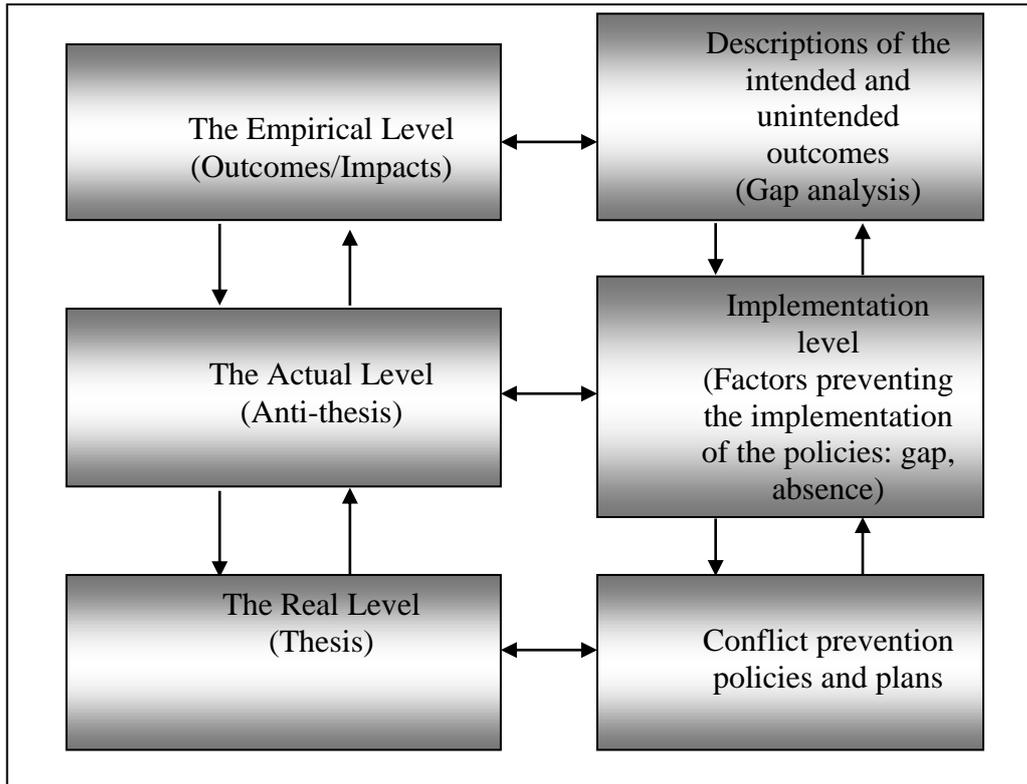


Figure 4.1: Model tracing the location of the challenge of policy non-implementation processes (absence) to the situation at the Actual domain

Source: Adapted from Johnston (1986: 52)

Figure 4.1 illustrates an outline of how Bhaskar’s concept of gap or absence finds expression at the Actual domain where stakeholders have relative freedoms to comply or not comply with the public guidelines. The model highlights that a researcher adopting the dialectical critical realist approach to conduct a study on the conflicts has to depict the forces working against the implementation of the conflict prevention policies and plans as forms of antithesis or negativities to the policies. The outline indicates that such opposing forces do emanate from the different interpretations of the public policies and plans by stakeholders. The researcher could then conceptualise the factors underpinning the disparities

between the expected (the objectives underpinning the government's peace initiatives) and the observed (the actual outcomes) as exemplars of gaps. The researcher can thus apply Bhaskar's concept of absence to denote the gaps that separate the expected impacts of the plans from the actual outcomes. From this basic outline, the researcher can then systematically apply the four phases of the MELD model.

4.5 Application of the four phases of the MELD model to the research on the conflicts

The MELD model is quite flexible, and Hartwig (2007) has indicated that it can be applied in several areas of human endeavour. Among the areas he has mentioned are the following:

- Polysemy and modes of absence (Hartwig, 2007: 17)
- Transformation of human agency (Hartwig, 2007: 24)
- Issues of truth and untruth (Hartwig, 2007: 28)
- Issues of alienation (Hartwig, 2007: 32)
- Master-slave relations (Hartwig, 2007: 45)
- Absence as the cause of change ... to cause is to change is to absent is to transform and so to redetermine (Hartwig, 2007: 51)
- Elements of the creative process (Hartwig, 2007: 71)
- In studies of human nature (Hartwig, 2007: 178)
- The philosophical discourse on modernity (Hartwig, 2007: 251)
- In the analysis of the unification of the problems of philosophy by absence of the concept of absence (Hartwig, 2007: 276)
- Subjectivity of the self (Hartwig, 2007: 318)

- In the analysis of the past, present, and the future (Hartwig, 2007: 329)

The four phases of the MELD model appears in Figure 4.2.



Figure 4.2: Outline of the MELD model of social transformation

The overarching information communicated by Hartwig (2007: 214-219) in the aforementioned list is that the MELD model is flexible enough to accommodate various research topics, types of research, and study objectives under different methodologies. For this reason, and in keeping with the objectives of this study, the four phases will be designated in this study as indicated below.

Phase 1M –The descriptions of the nature of the disparities between the expected and the actual situation. It would thus be about the nature of the

non-identity relations, the gaps, the voids, or the distances between the objectives underpinning the policies and plans on the government's peace initiatives (the expected) as against the current conflict situation (the actual).

Phase 2 in the model will be about the causal processes: about what is missing in the stakeholders' ability and understanding to come to terms with the constraints preventing the implementation of the peace initiatives. In this respect, 2E is therefore discussed in terms of the absence of information on the problems facing the implementation of the peace plans. To address this problem, the researcher engaged the stakeholders linked to the conflicts to provide information on what they thought account for the persistence of the conflicts under study. In Chapter 6, it will be shown how interactions with the stakeholders led to the identification of some 17 problems representing "hidden causal processes".

Phase 3L – The completion of emergence into a new level is conceptualised in this study in terms of new strategies which can be put in place to get rid of the existing 17 aforementioned problems under 2E.

Finally, Phase 4D, the phase of spontaneous right action and cosmic consciousness will be conceptualised in terms of the actions that need to be taken to implement the new plans for removing the 17 problems. It will also indicate how the outcomes from the actions could be used as the basis for finding new lapses, voids, absences, gaps, and other constraints, and therefore for going back to another 1M phase.

In the process of applying the MELD model as the framework for undertaking this study, it needs to be noted that particular attention is paid to the Actual level as being central in the overall study. This position taken

on the role of human agency is to support the point raised by Bhaskar (cited in Hartwig, 2007:23), that human action constitutes the principal source of power and social transformation for dealing with the problems associated with the gaps, absences, and voids between the ideal state of being and the current state of affairs of communities. The study findings and recommendations will therefore provide much information in support of this point. Figure 4.3 is another outline of how gap analysis could be undertaken in social research.

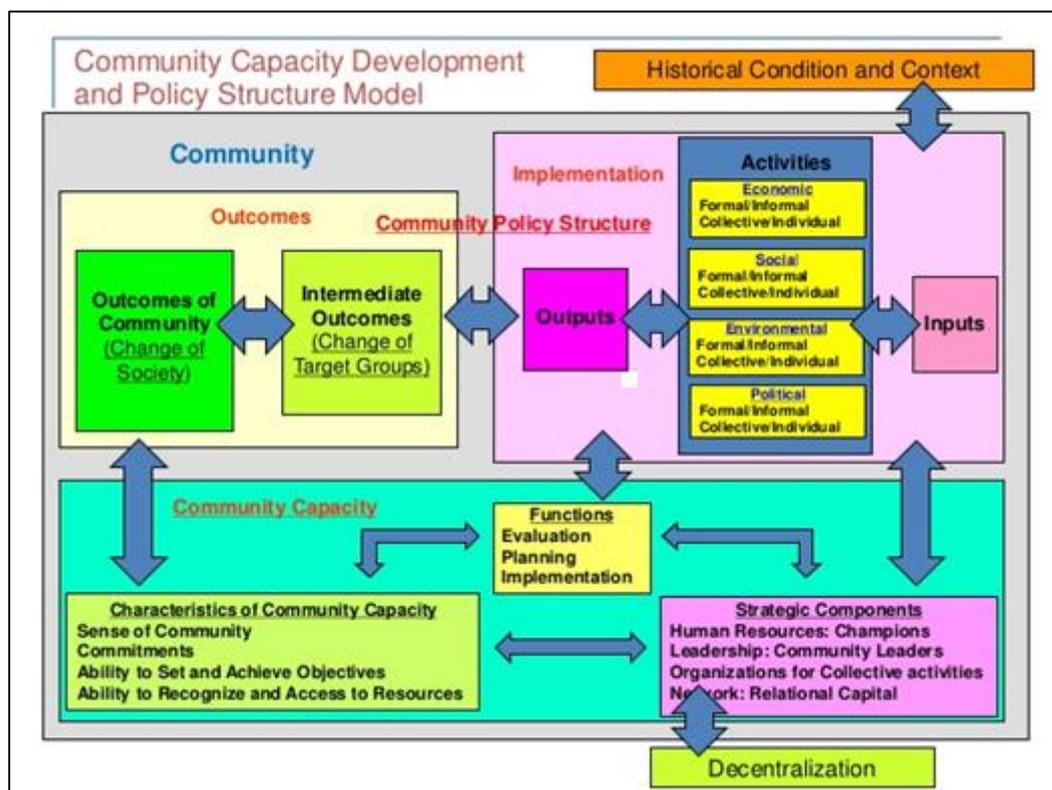


Figure 4.3: Outline of the key elements of the policy implementation challenge processes

Source: Miyoshi and Okabe (2016)

Figure 4.3 also illustrates the important role which public organisations and institutions could play in the formulation of policies and plans and the roles of stakeholders in implementing or sabotaging the objectives

underpinning those policies and plans. The model also therefore provides a summary of the key critical realist concepts which have run through this chapter. It shows that the critical realist research approach has sufficient merit for practical application in different areas of human endeavour.

4.6 Concluding remarks

This chapter has provided a focus on the key concepts selected to relate to the objectives of this study. The concepts have demonstrated why conceptual abstraction stands out as a central task in critical realist-based research. The chapter has described how the actions and interpretations of stakeholders constitute a central element of the abstraction process. The role of public policies and plans in giving guidelines to stakeholders as they go about their daily routines as discussed by Hill and Hupe (2006), Nissani (1997), Giachino and Khabase (2003), and Sutton (2004) has also been discussed.

The models in this chapter have helped to draw attention to the concept of absence in terms of the gaps which tend to exist between some expected state of being and the actual situation. The chapter drew attention to various procedures available for conducting a gap analysis and ended up with an outline of the merits of the MELD procedure for conducting a gap analysis.

The discussions in this chapter have shown that explanations cannot be about empirical covariance or statistical correlations at the Empirical level, but about the way stakeholders interpret the causal powers of social mechanisms to produce intended and unintended outcomes. This explains the basis of a proposition which can be advanced in this study which is

that, while there is a necessary relationship between the conflict prevention policies and their causal powers, the relationship between them and their effects or outcomes is contingent. The implementation of the conflict prevention policies and plans linked to the crop farmers and the nomadic herdsman depends very much on the way the stakeholders interpret the guidelines, targets, and other specifications in them.

Critical realist concepts such as stratification, open systems, emergence, gap analysis, unintended outcomes, and action theory have been deployed in this chapter to indicate the nature of the theoretical framework upon which this study is based. These concepts have demonstrated that descriptions, explanations, critique, and transformation are inseparable. The concluding parts of the chapter were devoted to the role of human agency to make a difference to the world. The discussions in this chapter have helped to present a perspective of the MELD model in which the broad outline of management and public administration procedures have been central. The one important message of the critical realist framework adopted in this study is that the problems/absences/obstacles of society on the one hand and the measures/solutions in place to get rid of them on the other hand need to constantly interact with the problems/constraints providing the context and the solutions as the opposing forces.

In the next chapter, attention will be given to the way in which information was collected and analysed to relate to the objectives of this study. The conceptual framework discussed in this chapter will be part of the discussions.

CHAPTER 5: RESEARCH METHODOLOGY

5.1 Introduction

The previous chapter discussed the conceptual framework of this study. This chapter elaborates on the way the researcher collected and analysed information to address the objectives of this study. The objectives of this study as indicated earlier are as follows:

- Obtaining information on the current state of the biogeographical system in Greater Kordofan and how the crop farmers and the nomadic herdsman interpret this natural resources from their cultural perspectives
- Finding out how and why conflicts have emerged out of the cultural interpretations of the natural resources
- Identifying the nature and impacts of the current state policies for preventing the conflicts between the two communities and the challenges facing their implementation (Gap analysis, that is, Phase 1M in the MELD model)
- Identifying the factors which the stakeholders linked to the conflicts and that they think contribute to their persistence and how they react to those factors (Phase 2E in the MELD model)
- Making recommendations based on the findings (Phases 3L and 4D in the MELD model)

As previously indicated, in Figure 1.4, the objectives of the study are based on the theories discussed in Chapter 4. This chapter on methodology is thus related to the concepts that featured in the previous chapter. A key

feature of the methodology therefore is that it is based on the open systems concept of a multiplicity of mechanisms (conditions and actions) emergent at different layers as indicated in Figure 5.1. This outline is thus based on Figure 1.4, which is presented again as Figure 5.1 to assist in the discussions on the procedure of data collection and analysis that was adopted in the study. Figure 5.1 highlights the various layers from which information was obtained to address the objectives of the study.

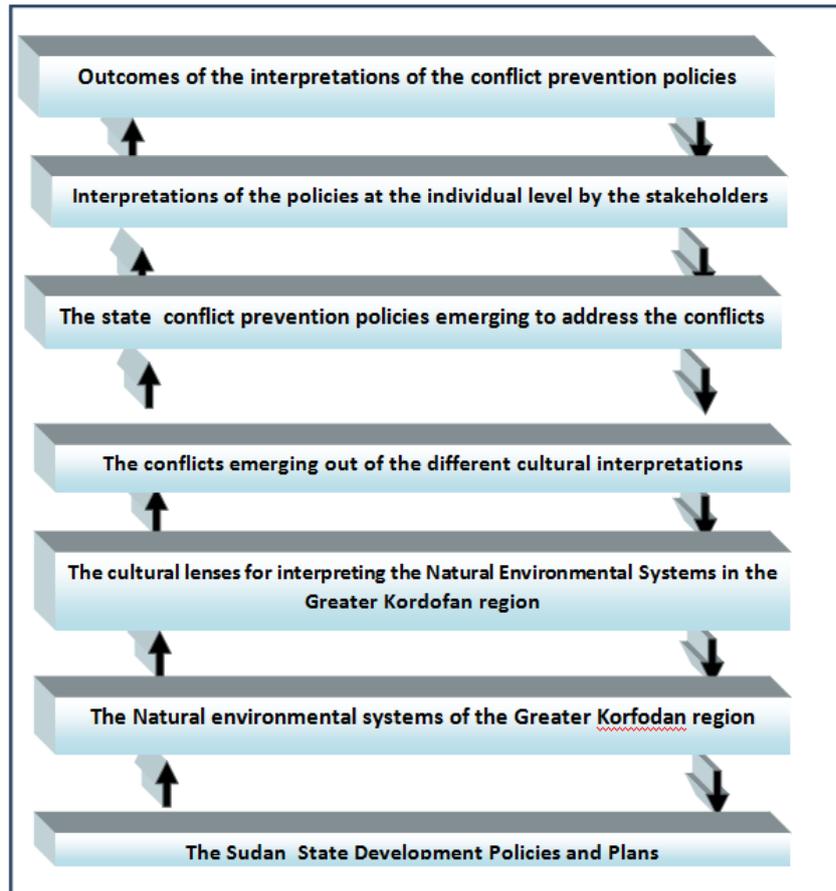


Figure 5.1: Model indicating the layers that feature in this chapter

This chapter begins by making a distinction between method and methodology in social science research in general. The term *method* is used to describe the tools of data collection, analysis, and techniques in the research process. This thus applies largely to the mechanical and technical issues of data capture, manipulation, and analysis. Methodology, on the other hand, has a more philosophical underpinning and thus refers to the broader ontological, theoretical, and ideological context underpinning the information generation processes (Sayer, 1992; Nachmias and Nachmias, 2000; Corbetta, 2003; Crotty, 2005; Kovach, 2009). This chapter thus gives an account of the critical realist methodology which has informed the

task of collecting and analysing data to relate to the study objectives and the underpinning theories. The methodology thus indicates the types of questions that were posed to obtain answers regarding what to identify in the nature of the gaps between the objectives set in the plans and policies for peacebuilding and the outcome (1M), the theories that were drawn upon to offer explanations (2E), as well as the recommendations that were made in the study (3L and 4D).

5.2 Research design used and justification

Mouton (2002: 193) and Leedy (1997) have indicated that research design provides the overall structure for the procedures the researcher follows to collect data in order to relate to some specified research objectives.

The following broad procedure was followed in this study and is illustrated schematically in Figure 5.2.

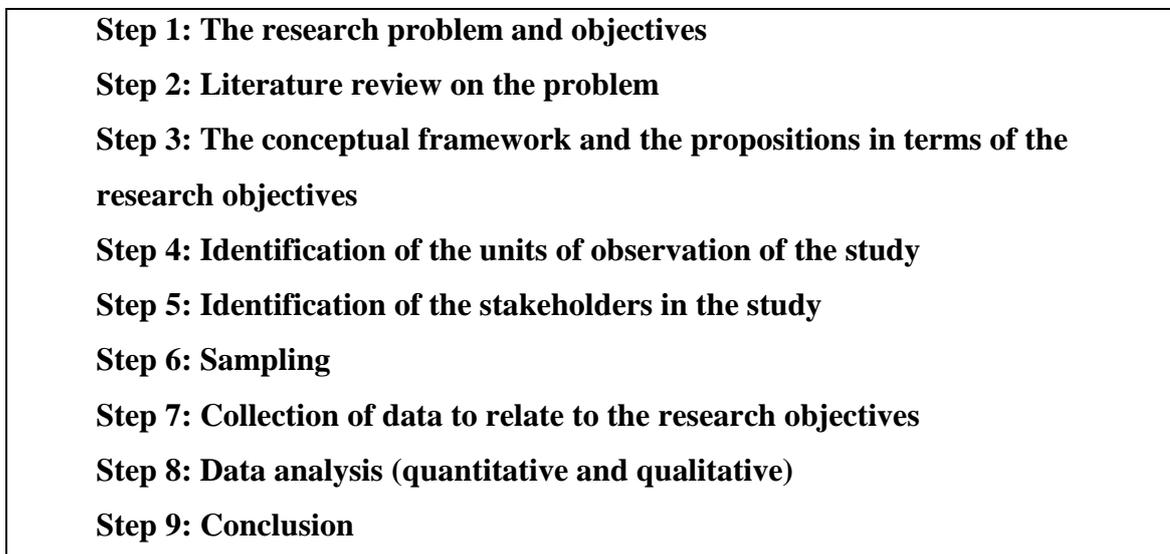


Figure 5.2: Research design outline

Source: Leedy (1997: 124)

The above steps are further illustrated in Figure 5.3.

Figure 5.3 is another perspective of the research design adopted in the study.

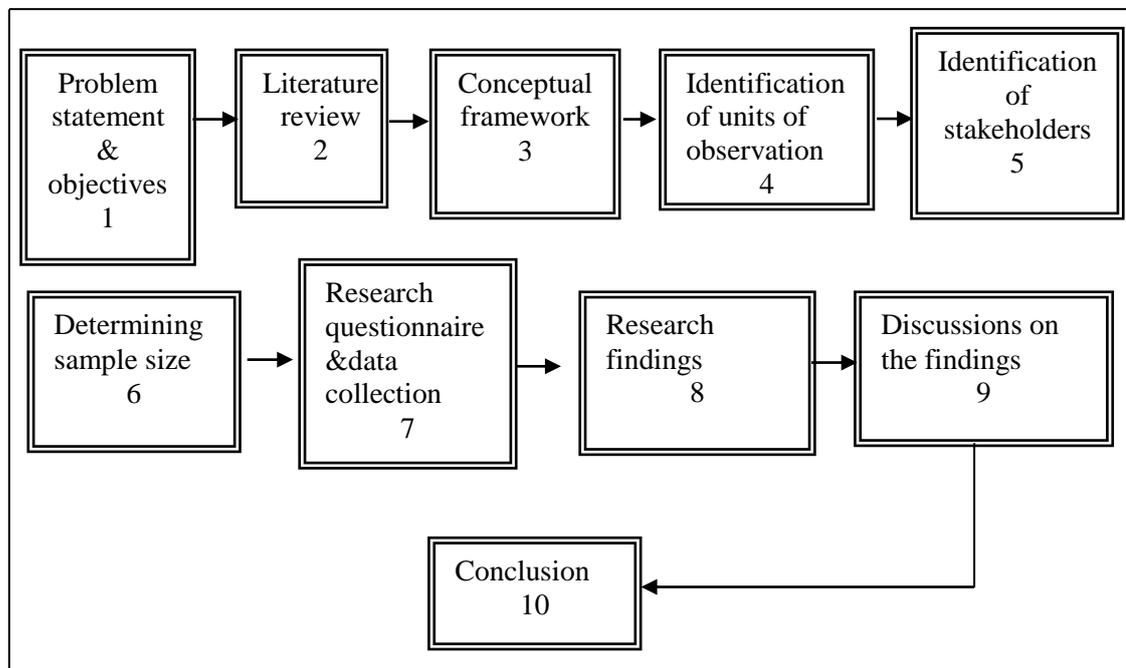


Fig 5.3 Outline of the research design in the study

Since the first three steps in Figure 5.2 (Introduction, Literature review, and Theoretical framework) have been discussed in the preceding chapters, this chapter will take off from discussions on the Research Methodology. This relates to how information was collected and analysed to address the objectives of this study (Steps 4, 5, 6, and 7 in Figure 5.2).

Research that seeks to explain how conflicts are manifested in a particular region requires an intensive research strategy, such as a case study in which the units of observation concerned will be indicated (Braukaemper, 2000; International Food Policy Research Institute, 2007). The units of observation in this study are the 21 districts of the Greater Kordofan region. These are administrative regions in which government policies are

expected to be implemented through the activities of various government officials and other stakeholders. The importance of the roles of such government officials in policy formulation and implementation has been discussed in the previous chapters (Chang and Rowthorn, 1999).

The crop farmers and the nomadic herdsman and their customers, service providers, and other groups of people are linked to the officials in various ways working under particular government guidelines. By focusing attention on the 21 districts, this study thus helps to provide detailed local-based information rich in detail about the roles of the government-sponsored policies and plans in place to negate the conflicts between the crop farmers and the nomadic herdsman. The methodology sought to obtain information involving comparisons between the districts in terms of their performance with regard to certain indicators or variables on the objectives set in the plans and policies for preventing the conflicts as was discussed in the previous chapter. It also sought to identify the factors explaining the disparity between the objectives in the plans and the actual achievements.

There are a number of reasons why a case study interpretive approach based on districts has been used in this study. First, this approach has helped to generate new information, which makes this study an exploratory one, providing new ideas and other forms of information and knowledge previously not available to the public. In the second case, the inductive approach used has proved helpful by providing ground-based explanations for the understanding of the persistence of the conflicts under study. Thirdly, the ground-based information from the field, in turn, has helped to produce recommendations, which emanate from the concerns, needs, and aspirations of the stakeholders (Davidson, 2002).

Thus, an integrative pluralistic case study approach, informed by critical realism, has helped to produce a research project, which is simultaneously empirical, inductive, evaluative, interpretive, explanatory, exploratory, and also critical and transformative as was discussed under the conceptual framework in the preceding chapter.

5.3 The units of observation used and justification

The 21 districts of the Greater Kordofan region have political administrators and stationed government public officials in charge of a number of activities including overseeing the formulation and implementation of policies and development plans for the benefit of the crop farmers and the nomadic herdsman. The 21 districts are thus administrative regions with constitutional powers to enforce certain government development plans, policies, laws, rules, and guidelines. Among these are those relating to the formulation of plans and policies for preventing the conflicts between the crop farmers and the nomadic herdsman of the Greater Kordofan region. Human geographers accord particular importance to such political or administrative regions in view of the powers given to them to implement certain development projects in specific regional systems. It has been argued that regions and localities matter because they have the powers to mediate between broader national development imperatives and the realities of local communities (Johnston, 1986, 1987; Kitchin and Tate, 2001; Dabinet, 2002; Mason, 2002; Flowerdew and Marton, 2005; Eyles, 2008 ;).

The aforementioned relative autonomy of regional systems is one reason why one expects to find differences in the way the policies for preventing the conflicts will be implemented in the districts. This is one of the themes,

which emerged in the previous chapters—the fact that local communities and individuals have relative freedoms to interpret broad social imperatives differently to produce different outcomes. This is one other reason that Figure 3.2 was presented as a geographical perspective of the critical realist stratification model in which the Actual level represents the way the communities in the districts or regions interpret the broad conflict prevention policies and plans differently to create geographical variations in the impacts of the policies. This study thus takes the geographical perspective seriously by illustrating how the 21 districts act as mediating structures from which emerge variations in the form and impacts of the conflicts under study.

In the Republic of Sudan, the districts are central in any analysis on the development process. As was noted in Chapter 1, the government officers in these districts manage, among other things, the statistical data needed for decisions on development planning in the rural communities and urban centres, and they help in the formulation of development plans and also in their implementation. This is in conformity with the Republic of Sudan's constitution and the national development policies and plans (Government of Sudan, 2007, 2009, 2013).

In view of the importance that the 21 districts play as administrative and planning regions in the development of the Greater Kordofan region, the choice of these districts as the units of observation can thus be justified. Figure 5.4 indicates the locations of the 21 districts.

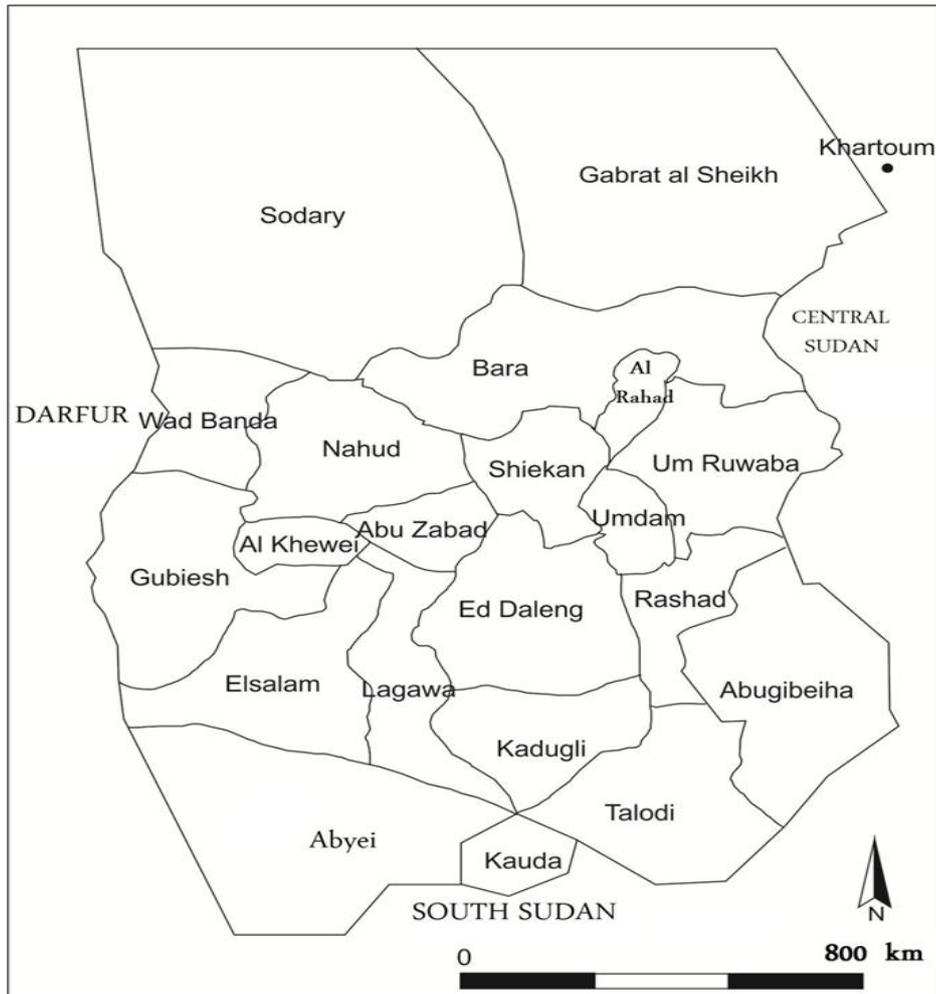


Figure 5.4: Locations of the 21 districts of the Greater Kordofan region

To access information from the grassroots, data was collected from the crop farmers, the nomadic herdsmen, and other people linked to them such as the extension officers, customers and service providers, among others, in the 21 districts. Three villages were selected from each of the districts for the study.

The 21 districts and the 63 villages from which information was obtained for this study are indicated in Table 5.1.

Table 5.1: The 21 districts of the Greater Kordofan region showing the villages from which information was collected for the study

	District	Village (1)	Village (2)	Village (3)
1.	Sheikan (El-Obeid)	Abu-Haraz	Kazgail	Al-Ain
2.	Bara	Om-Syalah	Al-Qaa	Al-Zareibah
3.	West Bara	Al-Mazroub	Om-Kridem	Um-Bader
4.	Al-Rahad	Allah-Karim	Al-Simaih	Sidrah
5.	Um-Rwabah	Wad-Ashana	Shirkeila	Um-Jomut
6.	Um-Dam	Al-Ghabsha	Roufah	Al-Zareibah
7.	Soudari	Um-Bader	Hamrat AlSheikh	Al-Gaaha
8.	Gabra	Kajmer	Hamrat AlWiz	JabratElsheikh
9.	Kadugli	Al-Feidh	Kaoda	Salara
10.	Dilling	Al-Hamadi	Dalami	Abu-Kershola
11.	Rashad	Um- Brumbeitah	Al-Quokiti	Gedeer
12.	Talodi	Um-Dorain	Wad-Bagari	Fandock
13.	Abu-Jubaiha	Abu-Karshula	Al-Kerker	Kreifah
14.	Lagawa	Al-Abassyia	Al-Sareif	Al-Towal
15.	AlSalam (Alfulah)	Al-Muglad	Babanusa	Al-Tuboon
16.	Abyei	Keilak	Abeidh	Um-Bateikh
17.	Al-Nahoud	Beer Muneim	Kleigo	Khamas
18.	Ghubaish	Hemeir	Al-Majrou	Al-Udheiah
19.	Abu-Zabad	Rahad Al-Silik	Gleisah	Abu-Haraz
20.	Wad-Bandah	Soqaa Al- Jamel	Foujah	Al-Ghweifat
21.	Al-Khewi	Um-Sumeimah	Al-Doudiah	Murkab

5.4 Identification of the stakeholders used in the study and justification

The research participants or stakeholders for the study were identified on the basis of the levels of information which they possessed on the conflicts as well as the contributions which they were found to be making to the existence or prevention of the conflicts between the crop farmers and the nomadic herdsmen at the time of the study. This time dimension is important because, in future some of them may no longer be residing in the villages and also linked to the conflicts. In the terminology of critical realist research, they were identified because they were found to be bound together as critical sources of information playing various roles in the conflicts.

The stakeholders identified in this study were the crop farmers, the nomadic herdsmen, their customers, service providers, the government officials, police and security officers assigned to prevent the conflicts, and other knowledgeable people in the communities who were referred to the researcher by the crop farmers and other households.

5.4.1 Reconceptualization and causality issues

Pilot surveys began in 2015. The surveys helped in the identification of the list of stakeholders from various villages that needed to be consulted for the relevant information. The following are noteworthy about the pilot survey:

- In the pilot survey, the researcher thought of concentrating the survey largely on the crop farmers and the nomadic herdsmen in the 21 villages. Thus, the initial stakeholders were thought only to

comprise the crop farmers, the nomadic herdsmen, and the government officials assigned to work with the communities to bring peace and sustained development. Further investigations indicated that their customers had to be brought into the research project. Later, police officers working to prevent the conflicts and the service providers of the crop farmers and nomadic herdsmen had to be included in the study. It was further realised that the local traditional chiefs and other knowledgeable people had to be consulted for important information on this research project. Finally, the important roles of the service providers had to be acknowledged.

- The issues in the initial questionnaires were also revised from time to time as the scope of the study became more and more clear. Through a process of twists and turns, the final questionnaires in Appendix 2 were designed.

The final list of the stakeholders and the questions posed were thus based on this process in iteration involving a systematic process of conceptualisation and reconceptualisation as recommended by Danermark et al (2005: 109-112). This involved a process of broadening the scope of the stakeholders, the elimination of some initial questions, revising the wording of the questions, and including questions on the recommendations of the stakeholders for addressing the conflicts.

Thus as more and more understanding emerged on the study, it became increasingly apparent that the customers of the crop farmers and nomadic herdsmen had to be included. It also became clear that the service providers helping the two communities with occasional financial support, transportation of their goods, warehouse facilities no matter how

rudimentary, and other consultancy services could not be ignored. The inclusion of stakeholders in the study was very much based on consultations with the local communities who helped with identification of people such as traditional leaders and other well-respected knowledgeable people in the communities whom they advised could provide valuable information to the researcher. The names of such people were gratefully acknowledged and included in the list of the stakeholders as an essential part of the final compilation list of stakeholders. The saturation point was reached when it became clear that no more stakeholders could be included in the study.

Table 5.2 thus presents the final list of the stakeholders who provided information for the study. The table indicates that a total of 651 people were involved in the survey. They were contacted in 63 villages from the 21 districts to provide information for this study. Three villages were selected in each of the 21 districts. Selecting 651 individuals from the Greater Kordofan region for this study implied that sampling became a crucial issue in the project.

5.4.2 Sampling: the stakeholders used and justification

The crop farmers, nomadic herdsman, and their networks of service providers, customers, and others comprise numerous households and individuals too large to cover in rural Greater Kordofan region. Through the use of scientific or unbiased sampling, it was possible to obtain a subset of the population which has been used to generalise for the population (Leedy, 1997). Sampling from the population enabled the researcher and the research assistants to focus on the 651 people to obtain comprehensive information, which would otherwise not have been

possible. It was important for the researcher to assure the 651 people of the objectives of the study and assure them of anonymity in the project.

It is indicated that the key concept in sampling is representativeness (Babbie and Mouton, 2001: 98; Bryman, 2001; Corbetta, 2003). Sampling theory demonstrates that efforts need to be made to ensure that the sample from which researchers generalise truthfully or faithfully represents the population from which it was drawn. Efforts were made to ensure that this basic principle in social research was adhered to. The pilot survey helped the researcher to have an idea about who the 651 individuals were going to be.

The method of stratified sampling was used in this study. Stratified sampling is the process of grouping members of a population into relatively homogeneous subgroups so that the strata should be mutually exclusive. Every element in the population is assigned to only one stratum so that the strata should also be collectively exhaustive and no population element is excluded (Crotty, 2005). In using this method, the researcher first identified the relevant strata and their actual representations in the population and then selected elements from each stratum at random using one of these two ways:

- The number of elements drawn from each stratum depends on the stratum's size in relation to the entire population ("proportionate" sampling).
- The number of elements sampled from each stratum is not proportionate to the size of the stratum ("disproportionate" sampling).

Random sampling was used to ensure that “*sufficient*” number of elements was typically selected from each stratum and that the results weighted according to the stratum’s size in relation to the entire population. “*Sufficient*” refers to a sample size large enough for one to be reasonably confident that the stratum represents the population. Stratified sampling is used when one or more of the strata in the population have a low incidence relative to the other strata. Stratified sampling is a commonly used probability method that is superior to random sampling because it improves the representativeness of the sample by reducing sampling error (Frankfort-Nachmias and Nachmias, 2000; Chambers and Skinner, 2003).

The nine groups of stakeholders were found during the pilot survey to differ in terms of their wealth, business orientation, race, religion, gender, educational background, age, geographical locations, and other factors. Efforts were made to apply the stratified sampling method to choose the 651 individuals in the nine groups in such a way as to ensure balanced representation with regard to the relations they have with the crop farmers and the nomadic herdsman.

In addition to the stratified sampling method, purposeful, snowball, and theoretical sampling was also applied in cases where the stakeholders pointed certain individuals with much knowledge on the topic to the researcher.

Researchers tend to differ as to what sample size is considered appropriate for research. Some maintain that a larger sample is better because of a lower random sampling error (Cooper and Schindler, 2008: 170). The following parameters of interest dictated what sample and of what size were needed:

- Variation (heterogeneity) or dispersion within the population
- Desired precision
- The higher the confidence levels in the estimate, the larger the sample needed

Table 5.2: Distribution of the sample sizes of the stakeholders among the 21 districts of the Greater Kordofan region

Districts: 3 villages selected from each district	A	B	C	D	E	F	G	H	I	Total
Dilling	1	9	9	3	3	1	1	1	3	31
Rashad	1	9	9	3	3	1	1	1	3	31
Abu-Jubaiha	1	9	9	3	3	1	1	1	3	31
Talodi	1	9	9	3	3	1	1	1	3	31
Kadugli	1	9	9	3	3	1	1	1	3	31
Lagawa	1	9	9	3	3	1	1	1	3	31
As-Salam	1	9	9	3	3	1	1	1	3	31
Abyei	1	9	9	3	3	1	1	1	3	31
Sheikan	1	9	9	3	3	1	1	1	3	31
Al-Nehoud	1	9	9	3	3	1	1	1	3	31
Al-Rashad	1	9	9	3	3	1	1	1	3	31
Um-Rwaba	1	9	9	3	3	1	1	1	3	31
Bara	1	9	9	3	3	1	1	1	3	31
West-Bara	1	9	9	3	3	1	1	1	3	31
Sodary	1	9	9	3	3	1	1	1	3	31
Gubaish	1	9	9	3	3	1	1	1	3	31
Abu-Zabad	1	9	9	3	3	1	1	1	3	31
Hamrat-AlSheik	1	9	9	3	3	1	1	1	3	31
Wad-Bandah	1	9	9	3	3	1	1	2	3	31
Umdem-Haj-Ahmed	1	9	9	3	3	1	1	1	3	31
Al-Khwei	1	9	9	3	3	1	1	1	3	31
TOTAL	21	189	189	63	63	21	21	21	63	651

The following needs to be noted regarding how the stakeholders are referred to using alphabets in the study:

- Police and security officials (**A**)
- The nomadic herdsmen (**B**)
- The crop farmers (**C**)
- The customers of the crop farmers (**D**)
- The customers of the nomadic herdsmen (**E**)
- Government officials involved in enforcing the policies on the conflicts (**F**)
- The traditional chiefs (**G**)
- Knowledgeable people on the topic (**H**)
- Service providers (**I**)

Table 5.2 highlights, as stated earlier, that 651 respondents were interviewed comprising those involved with police and security activities, the nomadic herdsmen, and the crop farmers and their customers. They also included the government officials assigned with duties covering the conflict prevention policies, plans, and programmes; the traditional chiefs and their representatives; and service providers such as those providing storage facilities, water, transport, and other services to the crop farmers and the nomadic herdsmen.

Three villages were selected from each district consisting of 31 respondents per village or settlement.

Table 5.2 also reveals that one person serving in the police and security activities, in the conflict prevention policy formulation and implementation department, and in the traditional local government, chieftaincy portfolio was interviewed in each of the 21 districts. In addition, one knowledgeable

person (academic with useful knowledge on the conflicts) was interviewed in each of the districts.

Table 5.2 further shows that nine customers of the crop farmers and nomadic herdsmen were interviewed in each of the districts. This means three were interviewed in each village. These were the households buying food items such as sorghum, millet, maize, milk products, hides, butter, vegetables, and other products from the crop farmers and the nomadic herdsmen. As indicated earlier, the nomadic herdsmen only sell in time of dire need. Premium was put on the customers to relate to the fact that the rural production systems are systematically moving from subsistence production to becoming more and more monetary-based. An examination of Table 5.2 (the last row at the bottom) indicates that 189 crop farmers, 189 nomadic herdsmen, and their 126 customers constituted 504 individuals who represented about 77% of the respondents. This section of the stakeholders in the conflict analysis is important as a structured whole in which demand and supply relations are central.

It needs to be noted however that although the government officials in charge of helping to formulate and implement the policies for preventing the conflicts are scattered among a number of government departments, it was deemed necessary to identify and concentrate attention only on one top government official in each of the 21 districts for purposes of accountability and consistency in the information provided. A list of the government departments with links to this study appears in Appendix 1.

Research assistants were assigned to the districts. The role of the research assistants in the data collection exercise needs to be acknowledged. They were particularly helpful in their interactions with all the respondents.

Without them, it would not have been possible to obtain the information in this study.

Twelve research assistants were used for the pilot survey. Efforts were made to select the assistants only from the Greater Kordofan region to avoid problems of unfamiliarity with the culture of the stakeholders. Their average age was 28 years. Deliberate efforts were made to select people with at least a basic tertiary qualification of a bachelor's degree. A six-day training session of five hours a day was held with them to help them understand the objectives of the study as indicated in the questionnaires. They were taken systematically through all the questions, with assistance regarding how to translate the questions into the vernacular (local language) where necessary, to make them understandable to all the respondents. They were trained specifically on the basic concepts of ethics and interpretive research regarding how to allow the stakeholders to freely express themselves in providing answers to the questions.

For purposes of this study, the Greater Kordofan region was divided among the research assistants. Details of the allocations to the research assistants according to the districts were as shown in Table 5.3.

Table 5.3: Assignment of the districts to the research assistants

Districts	Number of research assistants
3 districts	2
2 districts	2
4 districts (Kadugli, Talodi, Al-Khwei, Bara)	Author

The researcher visited the villages selected in the 21 districts to monitor progress in the data collection process by the research assistants. The research assistants were allocated to districts of their choice to ensure maximum cooperation. They were trained on the need to be patient in the data collection exercise, since some respondents could keep postponing the days and times for the interviews. They were also informed about problems such as the long travel distances between the villages and the inconvenience of using public transport; the possible suspicion and non-cooperation of some of the stakeholders; the possible exaggeration in the answers from the respondents; the possibility of occasional arguments arising from the interviews; and lastly, the possible display of ignorance on the part of the respondents on what might be thought to be common knowledge such as the existence of the government plans for preventing the conflicts under study. They were trained in the science and art of using common sense, patience, and humility to obtain all the answers on the questionnaires as advised by Babbie and Mouton (2001) and Cloke and Goodwin (2005).

The research questionnaires appear in Appendix 2, organised under Part 1, Part 2, and Part 3. Part 1 of the questionnaires deals with biographical profiles and the socio-economic profiles of the stakeholders. Part 2 and Part 3 deal with questions requiring the opinions, concerns, and recommendations of the research participants on the topic.

5.4.3 The type of stakeholders who provided the information for the study

Table 5.2 lists the nine stakeholders who provided data for this study. They were asked to provide information on all that they knew about the conflicts between the crop farmers and the nomadic herdsmen in their localities. These ranged from information on the nature of the natural environmental systems of the 21 districts, the role of culture in influencing the activities of the nomadic herdsmen and the crop farmers, the nature of the conflicts between the two communities, the objectives behind the plans of the government to address the conflicts, the impacts of those plans and the underlying factors, and their specific recommendations for addressing the conflicts. The questions thus required the personal opinions of the stakeholders on the conflicts. In this way, the researcher was able to develop a number of models based on the responses from the people. Out of such ground-based answers, the researcher was also able to make recommendations which reflected the concerns and aspirations of the respondents.

The nomadic herdsmen. Table 5.2 highlights that 189 nomadic herdsmen were interviewed in the 21 districts. It was not difficult to get in touch with such nomads who are usually found in their tents pitched on the outskirts of the villages. Efforts were made to interview three of such nomads in

each of the three villages (that is, nine nomadic herdsmen per district). By spreading the research in three different villages per district, the coverage became more widespread, allowing for diversity of opinions.

The crop farmers. Table 5.2 also indicates that 189 crop farmers were interviewed as was the case with the nomadic herdsmen in the 63 villages. It was quite easy to locate such farmers who reside in permanent homesteads or in relatively modern houses. Efforts were made to interview three of such crop farmers in each of the three villages (that is, nine crop farmers per district). By spreading the research in three different villages per district, the coverage also became more widespread, allowing for diversity of ideas.

The customers of the crop farmers. Table 5.2 reveals that 63 customers of the crop farmers provided information for the study. In each village, one customer of the crop farmers was interviewed. These were the customers who buy food items such as millet, sorghum, maize, and vegetables from the crop farmers.

The customers of the nomadic herdsmen. Table 5.2 shows further that 63 customers of the nomadic herdsmen provided information for the study. In each village, one such customer was interviewed. These are households that occasionally buy milk, hides of the livestock, and butter from the nomadic herdsmen. Such purchases are however very sporadic.

The government officials linked to the activities of the crop farmers and nomadic herdsmen. As indicated earlier, one government official was identified and interviewed in each district. These are the officers who are involved in overseeing the overall development of the districts and also appointed specifically to assist in the formulation and implementation of

the policies for addressing the conflicts between the crop farmers and the nomadic herdsmen. The information from these public officers was particularly critical in this study, since they represent the arm of the State in the areas of development policy formulation and implementation as related to the crop farmers and the nomadic herdsmen, among their other functions.

Certain critical information such as comparisons between the overall achievement rates in the conflict prevention programmes and plans in the districts as compared to the planned targets came from the government officials. With their task of compiling statistics on such information, the researcher paid particular attention to this item of information in order to obtain precise figures on performance measurement or evaluation. Some officials saw such information disclosure as sensitive government records which were not to be disclosed to the public; the majority were, however, cooperative enough to make such information available for the study. Such information has contributed to much of the discussions in this study.

The security officials/police officers. Table 5.2 indicates that one security/police official was interviewed in each of the districts. Their work is unique in the sense that they help to prevent acts of violence and also arrest the conflict perpetrators in the localities. They represent an important arm of the government of Sudan just like the government officials in charge of enforcing the government policies. These officers were found to work hand in hand with the government officials and the traditional chiefs.

The traditional chiefs and other knowledgeable people. Arrangements were made to interview some individuals in the districts whom the communities felt were quite knowledgeable enough to enrich the study

with their opinions, advice, and recommendations. These knowledgeable people, who were referred to by the local communities, included the traditional leaders, public servants, religious leaders, businessmen, university academics, and other respectable and influential individuals.

The service providers. Table 5.2 shows that 63 service providers were interviewed in the study, three from each of the 21 districts. The service providers were made up of contract and full-time workers who undertake occasional and permanent services and assignments to the crop farmers and the nomadic herdsman such as providing them with water, fodder, transport services, building materials, storage facilities, veterinary services, marketing information, security information, and financial services, among others.

It is interesting to note that the aforementioned nine stakeholders have become linked to the relations between the crop farmers and the nomadic herdsman over a number of years. It is noteworthy that all types of relations and knowledge have developed over the decades between the nine stakeholders with respect to what they see as the causes of the conflicts, their impacts, and also the plans and policies which they feel are needed to address the conflicts.

5.5 The research instruments used and justification

The quality of every research depends to a large extent on the quality of the data collection tools (Mouton, 2002). There are a number of research instruments that can be used for data collection, namely, the use of mailed questionnaires, interviews through focus groups and individuals, the use of documents, videos, and observations. Interviewing and administering

questionnaires are the most commonly used social research instruments. They often provide cheap and effective ways of collecting data in a structured and manageable form (Corbetta, 2003; Onwuegbuzie et al, 2009).

Primary sources of information

To obtain quality data for the study, the researcher made use of mailed questionnaires, interviews, focus groups, and observations to obtain information from the stakeholders. The research assistants were helpful in the house-to-house surveys. They were given training in all the data collection techniques. They applied the various methods of data collection involving the description of the activities, behaviours, actions, and the interactions between the stakeholders. They made use of field notes, voice recordings, and photographs.

The questionnaires in Appendix 2 combined both open-ended and closed questions, that is, the mixed method. The open-ended questions in the questionnaires were used to allow free responses from the stakeholders. In the sections of the study where this approach was used, no a priori assumptions were in the questionnaires. The questionnaires sought to discover theories, themes, and explanations from the findings rather than the verification of some pre-existing theories.

The answers from the questions helped to reveal what the stakeholders think account for the persistence of the conflicts; the meanings they put on the impacts of the conflicts; why they think the government policies and plans on conflict prevention are not having the expected impacts; and their recommendations for addressing the problems concerned. This qualitative

method of information generation enabled the stakeholders to freely express their opinions on the conflicts.

Secondary sources of information

To supplement the data collected through the mailed questionnaires, the interviews, and the observations from the field in the districts, information was also gathered from secondary sources. Secondary data refers to the “recorded information made by other experts for purposes other than the specific research need at hand” (Crotty, 2005: 43). The secondary sources were obtained from published research works done by institutions such as the Sudan government official publications and other reports on the conflicts under study.

The information collection procedures above generated data on various aspects of the conflicts. These include aspects such as the number of the conflicts, the actors involved, their causes, the problems being faced in preventing the conflicts, and the recommendations from the stakeholders.

5.6 The research questionnaires and the nature of information collected

Attention is now turned to the nature of the questionnaires that were used in the field. These appear in Appendix 2.

Between 2014 and 2015, several trips were made by the researcher to the districts as a familiarisation exercise (pilot survey) for designing the questionnaires with the help of some field assistants. The exercise helped to design a formalised research questionnaire that was pre-tested in 2015/16. The pre-test questions helped to ensure high response rates from the nine stakeholders. The stakeholders who were interviewed during the

pilot survey were not interviewed again when the final instrument was ready for use for the actual interviews during the latter part of 2014 to 2015. This was to avoid any preconceptions. A different set of respondents mentioned in Table 5.2 was therefore targeted in the collection of the final data in 2015/2016.

The long period of association of the researcher and the research assistants with the crop farmers and the nomadic herdsmen in the Greater Kordofan region has proved particularly advantageous by giving the research team more than enough time to properly establish rapport with those linked to the crop farming and nomadic herdsmen activities of the Greater Kordofan region. All the 21 districts were visited on several occasions.

5.6.1 Ensuring credibility, relevance, and reliability in the study

Underpinning all studies is the issue of credibility. The researcher had to ensure that the evidence, conclusions, and recommendations from this study can stand up to scrutiny. Obviously in a research of this nature, one needs to disclose information that is related to the conflicts between the crop farmers and the nomadic herdsmen. Additionally, there has to be a justification for including all the stakeholders brought into the study. The chief consideration here is thus about the question of whether the nine stakeholders really matter in the understanding of the conflicts. Could some of them have been left out of the study? Danermark et al 2005: 41-70) have clearly demonstrated that identifying the stakeholders in social research and ensuring credibility in the research process is basically an exercise in conceptual abstraction.

The reasons for selecting the themes on the conflicts and the nine stakeholders under the conflicts are elaborated below. The credibility of research projects depends on validity and reliability considerations.

The validity aspect of social research covers content/face, criterion, and construct validity. *Content validity* deals with the adequate coverage of the concept elements. *Face validity* is concerned with the nominal value of the measurement. The *criterion validity*, on the other hand, deals with the predictive and concurrent aspects of the measurement. The *construct validity* deals with the extent to which a set of variables actually represent the theoretical construct (factors influencing the conflicts) which they are designed to measure (Zikmund, 2003: 300). Most common definition of validity, according to Zikmund is epitomised by the question: what are we measuring? In this study, it is about conflicts - the causes and the prevention.

First, the four validity-based themes on the conflicts that were discussed in Chapter 1 have been shown to have emerged from the interactions with the crop farmers and the nomadic herdsmen who indicated systematically how the conflicts have emerged from the different interpretations of the natural environmental systems. This aspect of information indicates that the conflicts have been conceptualised, validated, and made credible in critical realist terms as some independently existing entity or object out there in the districts, which need to be analysed and presented to the public as they are (Sayer, 1992: 84). The researcher endeavoured to present the information obtained from the stakeholders in a rather detached and value-free way. It is on the basis of this ontological principle of critical realist research that the four themes that were discussed in Chapter 1 find much

validity in this study. The themes were derived inductively based on the realities on the ground.

Second, the construct validity component found expression in the factors which the stakeholders presented as accounting for the persistence of the conflicts between the nomadic herdsmen and the crop farmers.

Third, the justification for selecting the nine stakeholders who feature in this study also emerged through a systematic application of the critical realist principle of necessary relations. Their inclusion in the study is based on the principle that they do participate in the day-to-day operations of the crop farming and nomadic activities. Without them, the operations cannot be what they are. Others were included just by virtue of the knowledge they have on the research topic. The crop farmers, nomadic herdsmen, the police officers, and the government officials, in particular, were found to play essential roles in preventing or producing the conflicts. Systematic communication with the crop farmers and the nomadic herdsmen eventually led to the identification and inclusion of the seven other stakeholders. In this way, one can find justification/validity in the inclusion of the nine stakeholders in the study. In the same way, one can also find justification as to how other groups in the communities were not included in the study. The criteria for selecting the research participants were based on the nature of the relations they have built over the years with the crop farmers and the nomadic herdsmen.

The *reliability* aspects of the study deal with the extent to which the issues addressed in the study can yield consistent results when they have not changed. It is thus a measure of the extent to which the indicators used could be relied upon objectively as factors of the causes of the conflicts in

this study. The reliability component indicates that if multiple measurements were to be taken on the conflicts, the measures will all be consistent with their values. The various aspects of reliability include internal consistency, equivalent forms, and test-retest reliability. This highlights that the more valid and reliable the measurements are, the more likely the researcher will be finding some common findings, drawing the appropriate conclusions from the data collected, and making informed recommendations (Cooper and Schindler, 2008).

The theories on measurement validity and reliability require that they indicate the degree to which the measurements are free from error and yield consistent results (Cooper and Schindler, 2008). Among the possible errors associated with measurements, the following could be mentioned: subject error, subject bias, observer or researcher error, and observer or researcher bias. All these issues were taken into consideration in ensuring the validity and reliability of the themes and variables that feature in this study.

Finally, on the relevance of this study, the topic serves to bring into limelight the important roles which the nomadic herdsmen and crop farmers are playing in the economy of the Greater Kordofan region.

5.6.2 The nature of information collected under the themes addressed in the models

The issues addressed in the study relate to the four themes that were discussed in Chapter 1. These themes were broken down into particular clusters and sets of questions to which the stakeholders provided their individual answers. Attention is now turned to the themes.

5.6.2.1 Information on the nature of the natural environmental systems

This entailed collecting information on the climate, soils, and drainage, vegetation, and wildlife resources of the 21 districts. Government officials in the departments of agriculture, meteorology, animal husbandry, soil science, water affairs, and related fields were helpful in providing the researcher with all the relevant information in this area of the development of the communities.

5.6.2.2 Information on the cultural lenses for using the natural resources

This aspect of the study involved collecting information from the households concerning the nature of the activities linked to their natural resources. This anthropological-based study was central in the study, since it gave the crop farmers and the nomadic herdsmen the opportunity to rationalise the way they use the natural environmental systems in the villages, what they see as the SWOT analysis of the resources and their plans for their usage in the future.

5.6.2.3 Information as to how the conflicts have emerged from the various cultural lenses

The research participants were given the opportunity to explain how they thought conflicts have emerged out of the differences in the usage of the natural resources in their districts. This aspect also required them to provide their opinions as to how cultural differences on natural resources utilisation generate conflicts in their localities.

5.6.2.4 Information on the nature of the government plans in place to address the conflicts and the achievements/impacts (1M of the MELD model)

This aspect of the data collection process required the researcher sifting through the many Sudanese government policies and plans for purposes of identifying those which have been formulated purposely to deal with the conflicts between the nomadic herdsmen and the crop farmers. Under this aspect of the study, the stakeholders were also required to provide information on the expected impacts and the objectives behind the government peace initiatives and the actual outcomes. This information was able to disclose the disparities between the intended and actual outcomes associated with the government's peace initiatives.

5.6.2.5 Information on what the stakeholders think contribute to the persistence of the conflicts and how they are reacting to those factors (2E of the MELD model)

Data collection and analysis on this study objective was obtained by giving the stakeholders the opportunity to give accounts of the factors which in their opinion account for the persistence of the conflicts. On this aspect of the study, the stakeholders were given the opportunity to make statements which were coded to constitute a form of grounded theory-based information explaining their accounts for the persistence of the conflicts between the crop farmers and the nomadic herdsmen. Out of this, investigations emerged some 17 reasons which represent the explanatory factors, constraints, or obstacles in the way of implementing the government policies and plans for peacebuilding between the nomadic herdsmen and the crop farmers.

5.6.2.6 Information on the recommendations for addressing the factors contributing to the persistence of the conflicts (3L and 4D phases of the MELD model)

This aspect of the data collection exercise involved the researcher making a critique of the actions of the stakeholders regarding their attitudes towards the implementation of the government peace initiatives, policies, plans and subsequently making new recommendations as to how the current conflict relations between the groups could better be resolved. This critique element in the social research project constitutes a central feature of the critical realist-based project (Pawson and Tilley, 1997; Leonard, 1990; El Harizi, 2003; Bhaskar, 2008).

The foregoing thus provides a summary of the nature of information that has been collected to address the objectives of this study. The details of the findings appear in Chapter 6. The recommendations appear in Chapter 7.

5.7 Data analysis

Some data in the study had to be analysed with specific techniques to address the problem of information overload. The simplest method used in this study in this regard was through the use of maps, tables, and flow line models. These tools were supplemented with the statistical technique of factor analysis and the qualitative data analytical technique of the grounded theory-based coding method.

Factor analysis is a data reduction technique which is based on matrix table as indicated in Table 6.6 in the next chapter. Out of such tables were calculated factor loadings and factor scores (Tables 6.7 and 6.9) which indicated how the classifications were distributed among the districts. The

questionnaires from which the factor analytic technique was based appear in Appendix 2, Part 2.

The factor analysis was applied to 23 variables with reference to the stakeholders in the 21 districts. The preliminary processing of the information entailed the checking of the completed questionnaires, coding, and data capturing for the subsequent application of the technique involving the SAS JMP Version 8 for Windows by the UNISA Statistical Consulting Services. This statistical programme was used to execute the factor analysis output (O’Leary, 2004: 38).

Common analysis is a basic model used as a statistical technique for synthesising large amounts of data. Factor analysis can be used as an inductive technique to explore a field of interest, for purposes of finding patterns, relationships, and hypotheses (Chambers and Skinner, 2003).

The procedure for applying the factor analytic technique involved condensing a number of variables into constructs or factors that helped to disclose patterns in the variables responsible for the correlations that emerged. It is a method of determining the underlying order of sources of common variance within the 23 variables that were used for the analysis. It thus helped to provide a parsimonious description of common variance, beginning with a correlation matrix, which indicates common sources of variance for the inter-related variables (Babbie and Mouton, 2001). In this way, the technique helped to reduce the problem of information overload or multicollinearity. The technique was used to take care of redundant variables; thereby bringing into the picture the basic dimensions associated with the variables concerned (Chambers and Skinner, 2003).

The SAS JMP Version 8 for Windows program was used for classifying the 23 variables used to describe the conflicts in Greater Kordofan States. Eigenvalues showing how the 23 variables loaded on axes or constructs were computed from the matrix table developed from the responses of the stakeholders. These constructs were given names to reflect the way in which the variables were related. The final state of the classification exercise involved the 21 districts, which produced the geographical perspective of the variable classifications. This final phase was thus an exercise in regionalisation.

Chambers and Skinner (2003) have argued that the objective of factor analytic-based classifications is to group observations into categories comprising similar individuals and thereby to separate dissimilar individuals into different categories. They contend that the groupings that emerge from the application exercise help to reveal some order or patterns which might initially be hidden from people. From this view, the ideas expressed by Corning (2002: 14) thus become relevant in the sense of something new emerging from undertaking the factor analytic classification procedure.

On the aforementioned view, Field (2005) has also pointed out that factor analysis helps the researcher to find hitherto unknown groups and clusters which could demonstrate greater internal similarity than those delineated on the basis of individual variables observed in the initial matrix tables. Kitchin and Tate (2000) also state that the principles associated with classification/regionalisation in human geography are intended to help the researcher see patterns which can often come with major surprises.

Manly (2004: 54) and Norberg and Cuneming (2008) thus assert that factor analysis has now become an important part of the research process social, helping the research community to see patterns in data. They point out that the technique seeks to create order out of complexity, thereby serving as an important tool for analysing the variations inherent in raw data. According to Smith (1987), factor analysis is a technique which geographers can fall on to help in providing simplified perspectives on the complex data that they have to deal with. In support of this position, Eyles (2008) has also noted that underlying all analysis is the need to assign numbers to things according to a clear and well-defined rule. The application of quantitative regional analysis made it possible to apply such measuring scales to the 21 districts used in this study for purposes of identifying geographical patterns which might otherwise not have been readily available.

In addition to the above quantitative approach, the qualitative method was also applied through the technique of coding, which was used to group the answers of the stakeholders in the study about a number of issues on the conflicts which required their value judgements. The method was also used, *inter alia*, to find out from the stakeholders what they thought were the reasons for the persistence of the conflicts between the crop farmers and the nomadic herdsmen. This qualitative method of analysing the responses of the stakeholders initially produced some 61 answers which were subsequently reduced to 17 codes or explanatory factors. The procedure involved the researcher giving labels to the answers that were generated from the initial raw responses from the stakeholders.

The focus of the qualitative questionnaires was on the understanding of the unique lived experiences and meanings which the stakeholders associated with the conflicts between the crop farmers and the nomadic herdsmen. In

the analysis of the data obtained from the field, the researcher endeavoured to bracket out himself of the information disclosed by the stakeholders. The objectives behind the qualitative data analytical processes were to find out the shared patterns of beliefs and attitudes which the stakeholders thought motivate the people to interpret the conflict prevention policies the way they do; what the stakeholders thought account for the persistence of the conflicts; and above all, the types of recommendations they thought could produce long-term solutions to the conflicts between the crop farmers and the nomadic herdsman. This procedure of analysing the perceptions and meanings of the stakeholders was a time-consuming, iterative, and laborious exercise (Spencer and Thomas, 1998; Charles, 2008; Dick, 2008; Oliver, 2012). It ended up in arriving at recommendations with potentials to help the communities to get rid of the current conflicts between the nomadic herdsman and the crop farmers under study.

5.7.1 The mixed methods

The combination of the quantitative and qualitative approaches in the study thus indicates that the mixed methods was used. The merits of the method in social research have been elaborated by various authors (Green, Benjamin, and Goodyear, 2001; Johnson and Onwuegbuzie, 2004; Green, 2007; Mertens, 2010; Creswell and Plano, 2011).

5.7.2 A geographical perspective on the conflicts

Much of the information reported in this study is geographical, since as noted already, the districts of Greater Kordofan were used as the units of observation. To highlight this geographical perspective, the 3-tiered

ontology comprising the Real, the Actual, and the Empirical levels was therefore given its geographical dimension as indicated in Figure 5.5. In this model, the 21 districts therefore served as regional systems that mediated as action-based layers between the imperatives in the broader Greater Kordofan policies at the Real level and the empirical outcomes in the districts. As Alex, Massey, Cochrane and Charlesworth (1998), Dabinet (2002), and Blunt (2004) have observed, regions matter because the actors within them have considerable powers to create spatial variations in the interpretations of general processes.

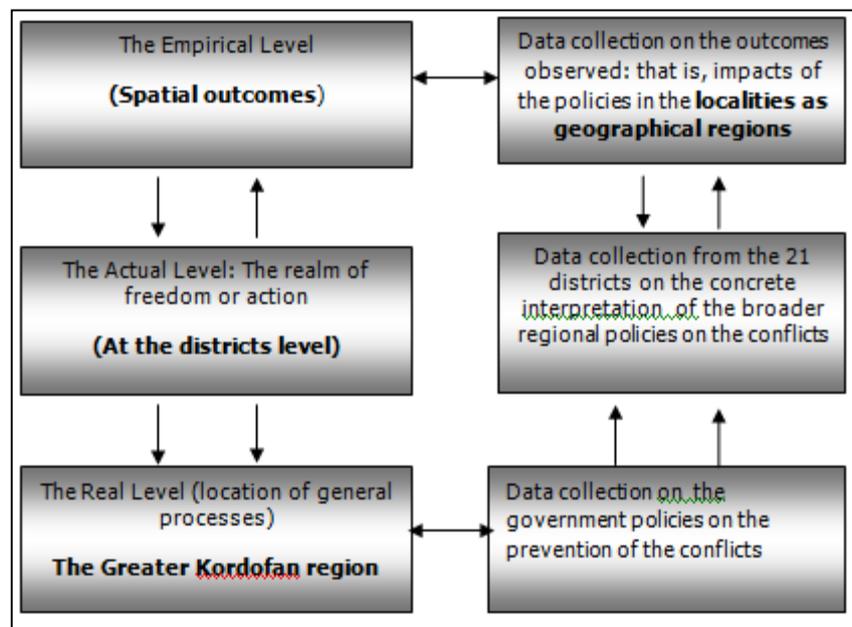


Figure 5.5: The three critical realist levels used for data collection from a geographical perspective

Source: Adapted from Johnston (1986: 52)

The computation of factor scores in the factor analytic procedure finally generated maps indicating the geographical distribution of the clusters of variables linked to the raw data associated with the matrix table. The maps

thus depicted important information on the geographical variations of the conflicts.

5.8 Limitations of the methodology

There were some limitations in this study. The data collection took one year – between late 2014-2015 –involving first the pilot survey and later the actual data collection and analysis. The completion of the data analysis and write-up was done in 2016.

- One of the challenges this study encountered during the data collection phase was non-cooperation of some of the stakeholders in providing information. There was some unwillingness on the part of some of the government officials to provide some items of information because of the perceived legal implications of diverging information from government policy documents.
- The police officials were helpful in providing statistical information on the conflicts between the crop farmers and the nomadic herdsmen which occurred in previous years. The officers were however only able to indicate that the conflicts were generally on the increase, without providing proper records for substantiating such statements. In such cases, the researcher had to consult the other stakeholders for information on the magnitude of and trends in the number of the conflicts over the years.
- Some of the mailed questionnaires sent to the government officials and other educated people were not returned in time as promised, which delayed the compilation of the findings considerably.

- Information on per capita incomes of the crop farmers and the nomadic herdsman should readily be available from public institutions and government departments involved in agriculture, veterinary services, finance, and marketing, but such data was not readily available. The researcher thus had to spend time making estimates based on the years of experience spent living with the local communities. The research assistants were very helpful in this respect. The vastness of the Greater Kordofan region and the cost of travelling to collect data on poor and hazardous road networks in the rural areas posed major accessibility problems.
- The problem of civil wars in the region is now public knowledge. It was difficult for some of the research assistants to collect information at the allocated times in some of the districts of South Kordofan, in particular, because of security concerns.
- The problem of combining data collection with analysis in some aspects of this study, and also of going back to some of the respondents for purposes of confirming some of the information collected earlier, proved to be rather uncomfortable for the respondents.

To address the aforementioned problems, the data collection process was prolonged deliberately in order to access all the information needed. This proved rather expensive, but it paid off in the long-run.

5.9 Concluding remarks

This chapter has provided information regarding how information was collected from the field and subsequently analysed to address the

objectives of the study. Further, the chapter discussed the rationale for using the 21 districts of the Greater Kordofan region as the basic units of observation. These are regions under administrative officers who have political powers to oversee the development processes at the grassroots level. By collecting information at the household levels in the villages, the study was able to get access to the meanings which the communities attach to the conflicts between the crop farmers and the nomadic herdsmen. By broadening the list of stakeholders on the basis of the relations which they have with the nomadic herdsmen and crop farmers, the study findings in the next chapter will indicate the difference which the backgrounds of people can make in the understanding of social reality.

This chapter has thus shown that making paradigm choices has implications on the nature of the study findings. A top-down conceptualisation model, for example, would have left out some of the important questions and also some stakeholders in the study region who actually do have an impact on the conflicts. By opening up to the ideas, knowledge, and aspirations of the local communities, the scope of the study has been widened to include the input of all those stakeholders who in various ways influence the conflicts between the crop farmers and the nomadic herdsmen.

As Dick (2008) has argued, social research can only have practical relevance if based on consultations grounded on the realities of the local situation. It is on the basis of this critical realist research methodology that the findings in the next chapter are based.

CHAPTER 6: STUDY FINDINGS

6.1 Introduction

The preceding chapter dealt with the research methodology employed in this study. This chapter reports the findings of this study in the context of the following study objectives:

- Disclosing information on the current state of the natural environmental system in Greater Kordofan and how the crop farmers and the nomadic herdsman make their livelihoods from their interpretations of this natural resource
- Finding out why conflicts have emerged out of the cultural interpretations of the natural resources
- Identifying the current nature of the Sudanese government policies on the conflicts between the two communities and the challenges facing their implementation
- Indicating the factors which the stakeholders linked to the conflicts that they think account for their persistence
- Making recommendations based on the findings

To understand the logic in the presentation of the findings, attention needs to be turned once again to Figure 1.4, Figure 1.5, Figure 4.2, and Figure 5.1 which provided a picture of the framework under which the study objectives and findings are organised. This chapter devotes attention to the findings in terms of the foregoing study objectives.

Information obtained from Part 1 of the questionnaires

As indicated previously, Part 1 of the questionnaires dealt with biographical information on the socio-economic profiles of the stakeholders. The respondents were largely the adult population. In the households, the respondent was the household head, usually a male. The women are often not allowed to partake in such research projects or interact with foreigners. However, the meetings that the researcher organised with the communities, their local chiefs, and the government officials about this study, and the training programmes conducted with the research assistants all helped the communities to open up to enable the research team to have access not only to a handful of the women but also to some of the children in the villages and those on the caravan trips. This has helped tremendously to elicit the opinions of large sections of those linked directly and indirectly to the conflicts in rural Kordofan society. In addition, the length of stay of the respondents was taken into account to ensure that they had lived in the communities long enough to enable them to constitute reliable sources of information.

Finally, the vital role which the pilot surveys conducted earlier have played in this study needs to be mentioned. The answers obtained from those preliminary surveys have been instrumental in the modification of the final questions which appear in the appendices, in the identification or selection of the research participants, in the timing of the interviews, and in the concepts which the research participants could understand. Especially on the meanings and values of the stakeholders regarding the conflicts, the pilot surveys helped the research team to better understand what qualitative research entails. The pilot survey made it clear that much patience would

be required in translating or communicating the interview questions into forms of language understandable to the research participants.

Table 6.1 gives a broad overview of the socio-economic profiles of the stakeholders: the age, gender, educational background, and the ethnic and other social backgrounds of those who took part in the study.

Table 6.1: Some key biographical information on the research participants

Stakeholder	Key features
21 police officers	Above 30 years; largely male; basic elementary school certificate; 80% Arab
189 nomadic herdsmen	Above 50 years; male; no formal education; 100% Arab
189 crop farmers	Above 50 years; male; 15% with formal education; 85% Nuba
63 customers of the crop farmers	Above 35 years; male and female; 45% formal education; 80% Nuba
63 customers of the nomadic herdsmen	Above 35 years; male and female; 15% formal education; 60% Nuba
21 government officials enforcing the conflict prevention policies	Above 35 years; male and female; 100% formal education; 60% Arab, 40% Nuba
21 knowledgeable people	Above 50 years; male and female; 70% formal education; 50% Arab, 50% Nuba
21 traditional chiefs	Above 50 years; male; 60% formal education; 50% Arab, 50% Nuba
63 service providers	Above 50 years; male; 75% formal education; 50% Arab, 50% Nuba

Table 6.1 indicates that some 651 stakeholders provided the information for this study.

Information obtained from Part 2 of the questionnaires

The account that follows is based on the information that was obtained under Part 2 of the questionnaires. They covered a number of issues, and the findings are now reported.

6.2 The state of the natural environmental system in Greater Kordofan

Fieldwork-based information with the crop farmers and the nomadic herdsmen and also with the professionals working in the areas of climatology, soil science, hydrology, biogeography, and veterinary science in the study region has helped to generate a wealth of information on the current conditions in the ecological system of the Greater Kordofan region. The interactions with the stakeholders concerned have helped to reveal what could be described as the strengths, opportunities, and problems associated with the natural environmental properties of the study region.

The study findings indicate that the greater part of the study region consists of diverse geomorphological regions with an average altitude of some 1,500 ft. In the western parts of the region, isolated peaks such as Jebel Abu Senum and Jebel Kordofan rise from 150 to 600 ft. above the plains. In the north-west, the Kaja and Katul mountains (2,000 to 3,000 ft.) dominate the landscape. In the east are the Jebel Daier and Jebel Tagale hills. In the south, the Nuba Mountains exceed 3,000ft. in height. The south-western part of the region is composed of vast and almost level plains known as Dar Hamer.

The study findings also indicate that fertile soils are rare in the Greater Kordofan region as a whole. Granitic sands with an abundance of mica,

clay, and feldspar form the dominant soil types. There are numerous surface depressions or channels which can hold water, but they are very dependent on local rainfall. By sinking wells, the local communities can obtain their basic water needs. They raise the water by ropes and buckets often at the cost of enormous labour.

The rainy season in the study region lasts from June to the end of September, usually in brief but violent showers. During the rainy seasons, large tracts of land are converted into swamps when fever becomes a health hazard.

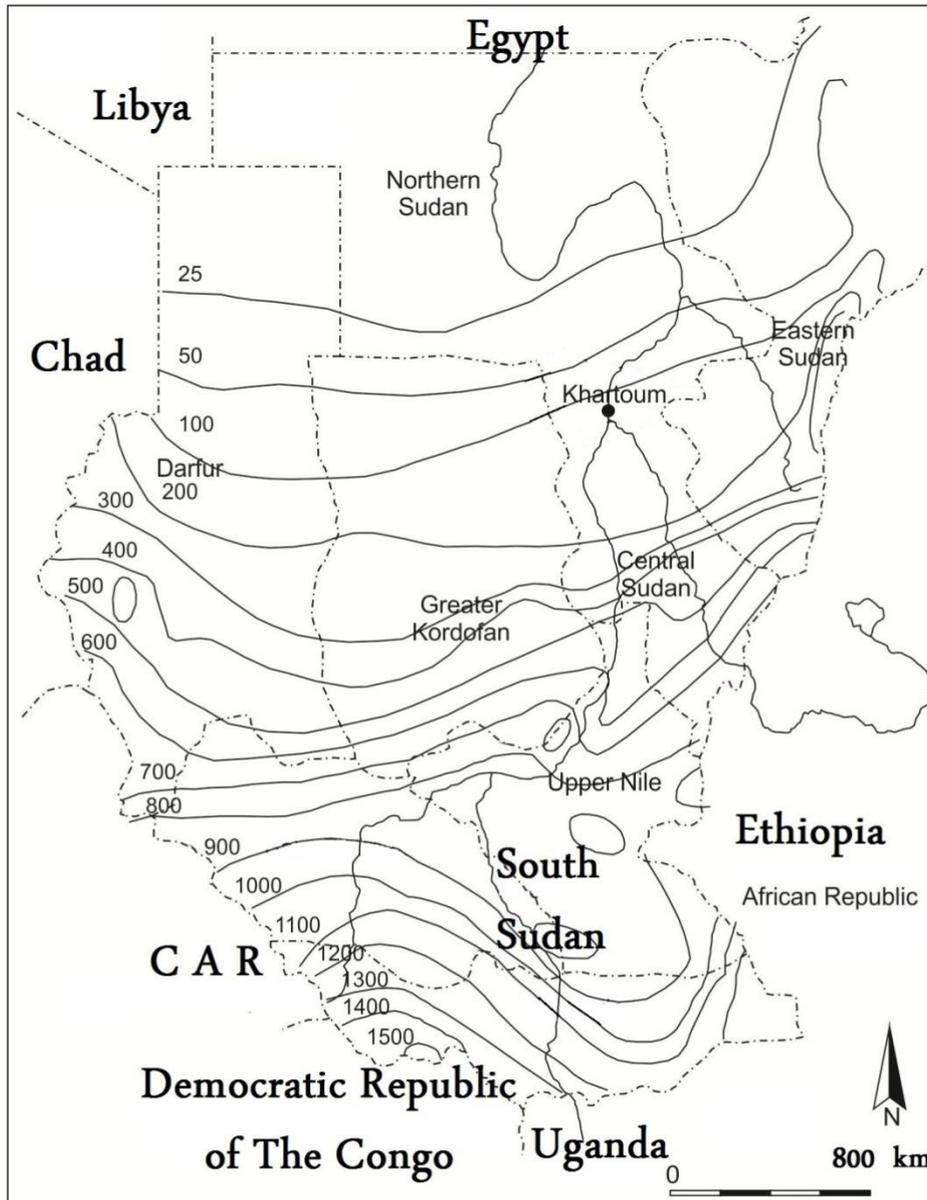


Figure 6.1: Mean annual rainfall map of Sudan (in mm) showing the location of the Greater Kordofan region

Source: Mahdi A. El-Tom. K. 2010. The rainfall pattern of Sudan

In terms of vegetation, the chief constituent of the low scrub which covers the northern part of the region is the gum acacia. The northern part of Greater Kordofan region is generally dry with desert climatic conditions. In the south, however, with higher rainfall, dense vegetation is common

with the red gum acacia being abundant. The calabash tree is common in the relatively humid southern regions. Water sources are abundant in the ponds which the rural communities regularly exploit for their water requirements. Another common source of water supply in the south is watermelon.

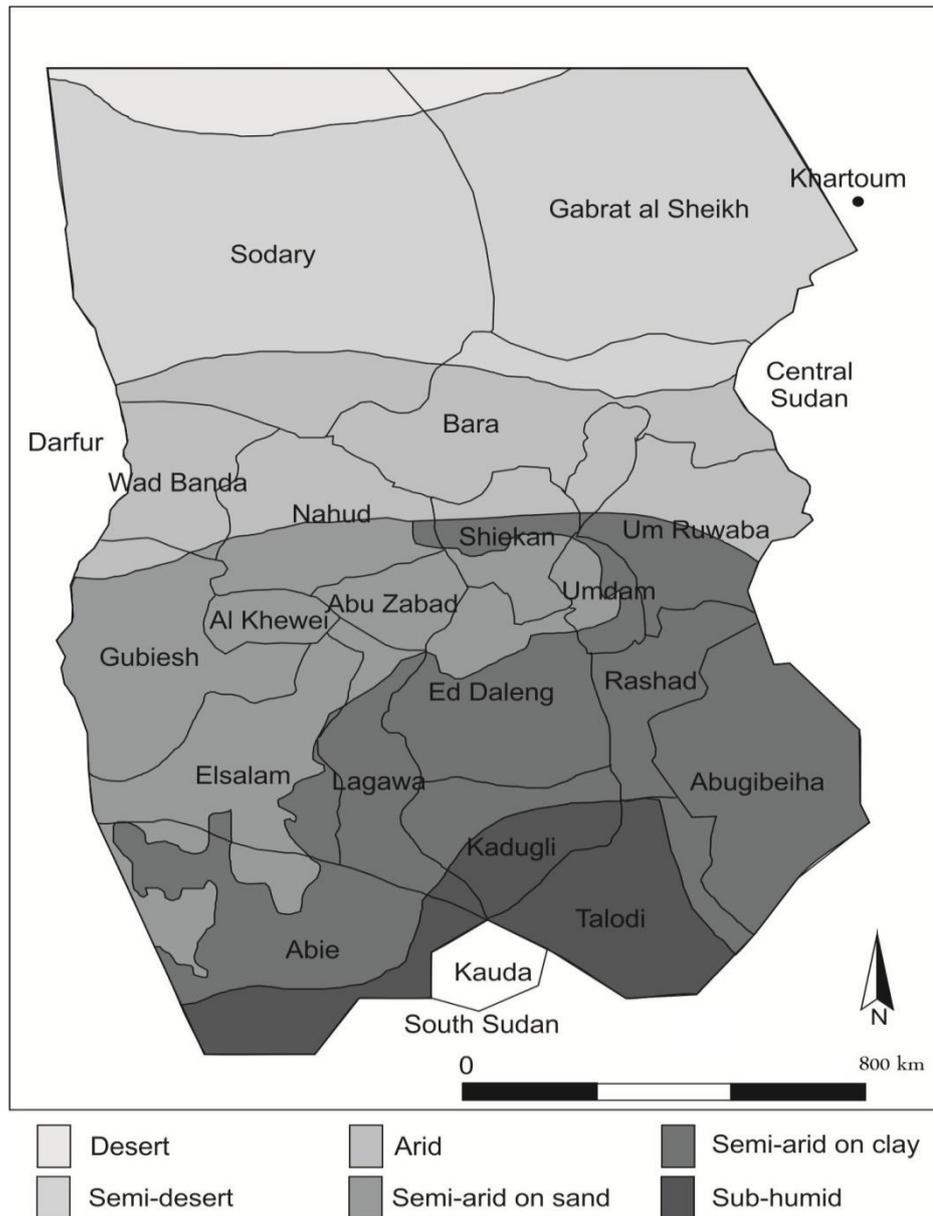


Figure 6.2: The agro-climatic zones of Greater Kordofan

Source: Adapted from Van der Keviet (1993) and Pacheco (1996)

Figure 6.3 provides a broader regional perspective of the agro-climatic zones of the Greater Kordofan region and the neighbouring countries.

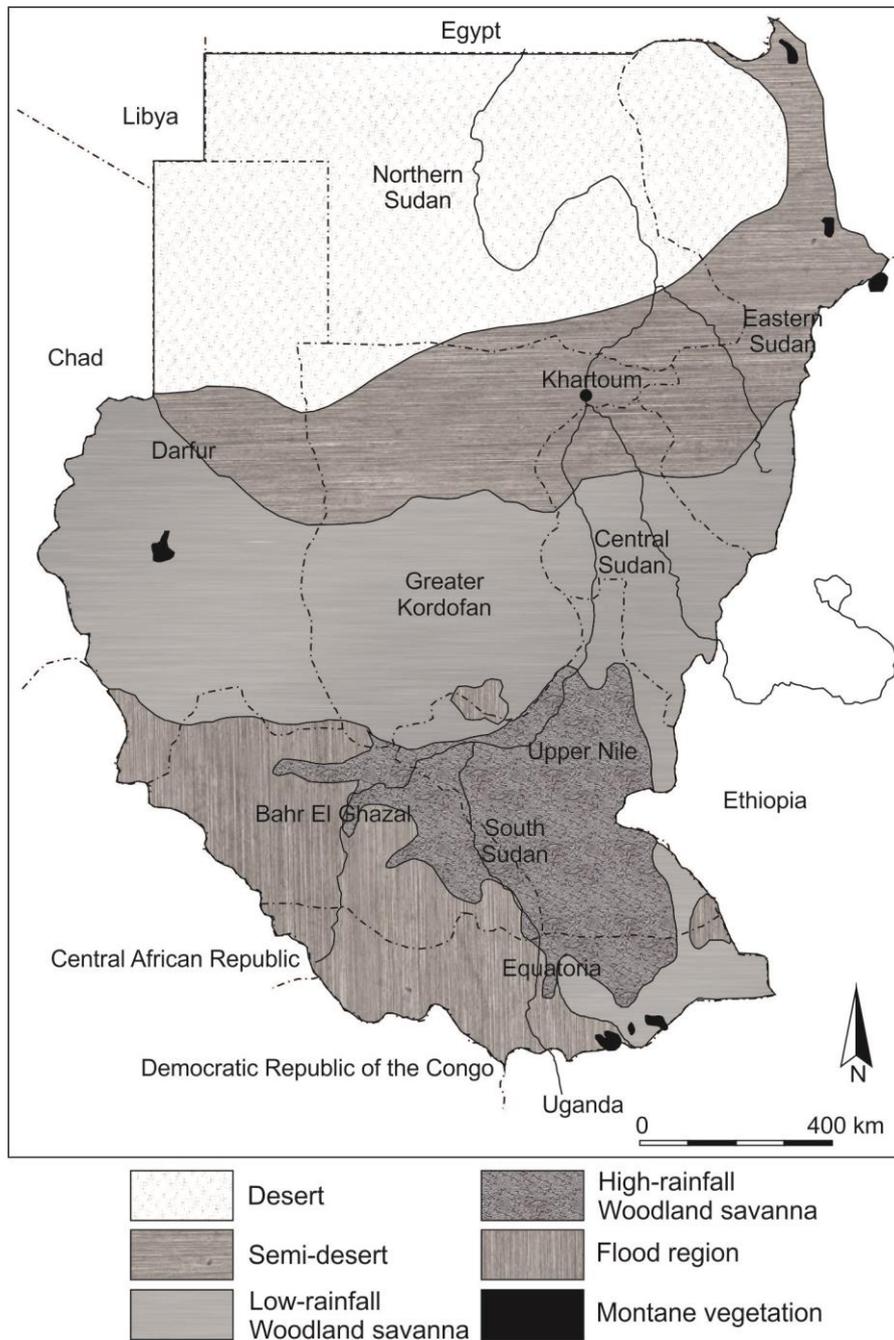


Figure 6.3: A broader regional perspective of the agro-climatic zones of Sudan and the surrounding countries

The survey of the biogeography of the study region indicates that soil erosion and deforestation continue to pose major problems in the development of the districts. This was found to be particularly the case in the northern parts of the region. The problems can however be addressed through irrigation schemes, modern agricultural practices, the reform of the land tenure systems, the proper management of the forest reserves in the region, and effective extension services. In this context, the various government departments need to be provided with the financial, human, and other resources to enable the relevant organisations to implement the plans on such projects.

The records from the various government departments reveal that there are a number of development plans on irrigation, afforestation, soil conservation, dam construction, and other environment-related programmes. The funds and other resources needed for project implementation, however, have not been forthcoming. This was a common concern expressed by the households in the local communities. The communities complained about the lack of leadership, social work activities, and other forms of community-inspired development initiatives from the central and local governments for addressing their environmental conservation needs. Some local government departments, on the other hand, traced the poor conditions of their ecological systems largely to the activities of the capitalist firms in the agriculture and forestry sectors that were criticised for exploiting the resources of the land without engaging in afforestation activities. Lack of government funds for land conservation programmes was also mentioned as a major problem.

The districts of South Kordofan are relatively more humid with soils that have the potential to support the production of vegetables, tropical fruits,

cotton, sorghum, millet, maize, gum-arabic, medicinal plants, and poultry. In these regions, the common complaint was also in terms of the inadequate involvement of state institutions in creating the enabling conditions for tackling projects on climate change, deforestation, the deforestation problems posed by the firewood sector, the increasing extinction of some species of plants and animals, and the excessive exploitation of the natural resources by the businesses which are investing in the region.

6.3 The natural environmental systems and the livelihoods of the crop farmers and the nomadic herdsmen

The findings reported here address the second objective of this study. The analysis of the biogeographical systems of the study region presents an account of the constraining and enabling features of the environmental properties of the region. It is the case that local communities generally have relative freedom to decide about what to do with their natural resources (Harragin, 2003). This theory was found applicable in the interpretations of the natural resources of the study region.

There is no doubt that climatic and vegetation conditions of the study region do have some influence on the nature and scope of activities that can be carried out in the study area. Two broad biogeographical systems are evident in the study regions noted earlier – the relatively humid region to the south and the arid region to the north.

In the north, horses, camels, and cows have been domesticated to constitute the means of transport for the nomadic activities of North Kordofan. The nomad Arabs in this northern part of Greater Kordofan are of two types –

the camel owners (Aballa) and the cattle owners (Baggara). The communities here engage in annual migrations to the south with their livestock. When journeying, they place their baggage on their oxen. They usually travel with stabbing spears, swords, and guns. The principal Baggara tribes are the Rizigat, Habbania, Meseria, Kenana, Hawazma, and the Hamar.

The ecological conditions of the south, however, support abundant wildlife in the form of mammals such as elephants, rhinos, buffaloes, giraffes, lions, leopards, cheetahs, roan-antelopes, kudus, reptiles, birds, and insects. The Nuba tribes dominate in this part of the Greater Kordofan region. They are said to be the aboriginal inhabitants of the Greater Kordofan region. They are sedentary crop farmers and host the nomads from the north on their yearly migrations. It is this exercise which tends to generate the conflicts between the two groups.

It is interesting that the rural communities currently see only two principal livelihood possibilities – crop farming and nomadic activities. There are enormous opportunities for alternative livelihoods if the political will exists. The various government departments can assist to mobilise the rural communities to introduce small-scale irrigation schemes, soil conservation projects, afforestation projects, and small-scale dams which can be owned and managed by the local communities. This implies that opportunities exist for the transformation of the ecological systems of the rural Greater Kordofan region. Positive change is possible if the will exists.

The responses from the nomadic herdsmen, in particular, indicated that the cultural lenses which they use to interpret the natural environmental systems have not changed much over the centuries. The majority of the

nomadic herdsmen interviewed were from the Sheikan, Bara, Al-Rahad, Al-Nahoud, Gabrat-El Sheik, Wad-Banda, Al-Khewi, Soudari, Un-dam, Um-Rwabah, Abu-Zabad, and Gubaish districts.

These nomads engage in the annual migrations from the north to the south with their families and personal possessions, pitching their tents at points where water, grazing land, and other necessities are available. A few of them (less than 5%) were found to have expressed interest in settling in the settlement schemes being developed by organisations such as Oxfam. The Hawazma communities, for example, are gradually abandoning their nomadic lifestyles and settling in compact villages surrounded by their farms.

The study found little evidence of the nomads in the north adopting the use of mobile phones, bicycles, and other modes of transport and communications in their journeys. Less than 5% of those interviewed expressed interest in the use of modern modes of transport. The camels, horses, and cows still constitute their modes of transport and, what is more, their measure of social standing. There is also little evidence that their food items, medicines and entertainment facilities, their sanitation habits, their negative attitudes towards urbanisation, religion, industrialisation, and other forms of modern Western lifestyles have changed much with time. The majority agree, however, that crop farming and nomadism need to interact on the basis of division of labour and exchange.

Less than 5% of the nomadic herdsmen interviewed were aware of the existence of television programmes and ever watched television programmes. They were however found to be surprisingly enough, aware of the violence and conflicts going on not only between them and the crop

farmers but also between the rebels in South Kordofan fighting for political secession from Khartoum.

Interviews conducted with the children of the nomads indicated that about 25% would want to settle and live modern lifestyles such as going to school and taking up jobs in the formal sector of the Sudanese economy. This is an important piece of information which needs to be taken up by the authorities. The findings revealed that the majority of the children of the crop farmers attend school.

The responses from the crop farmers provided another interesting dimension to the study findings. These are made up of sedentary households who live in villages and homesteads surrounded by their farms, poultry, and livestock. They are found largely in the districts of Abu-Gubaiha, Al-Dilling, Lagawa, Kadugli, Al-Rashad, Abyei, Talodi, Kauda, and Al-Salam. Rainfall in these areas is quite high, usually above 400 mm per year. The landscape is thus largely green. The study findings highlighted that crop farmers see economic wealth in their natural environmental systems. The previous mode of subsistence crop farming is fast giving way to cash crop farming. The cash returns from the farms have over the decades been used to build modern houses in the villages, to invest in small-scale businesses, to educate the children, and to also address other needs of the households. The oil industry is also coming on board in this region to attract big multinational companies to the oil-rich districts around the Abyei area. The study findings brought out however that the oil sector is gradually bringing on board problems of land dispossession, the pollution of the land, uncontrolled rural-urban migration, and also trends towards increasing inequalities in economic and political power.

While the study findings indicate that the natural resources of the southern districts are promoting income growth, job creation, skills development, investments in housing, education, and infrastructure development, the farms of the households were however found to constitute targets for the grazing of the livestock of the nomadic herdsman from the north. The relationship between the crop farms and the nomadic herdsman thus continues to be negative, with the serious consequences resulting in annual deaths and the destruction of farms and other forms of property and vital public infrastructure. It is surprising that ordinary crop farms can constitute spots or magnets for conflicts between communities over the centuries. Most of the crop farms in South Kordofan are today described by some as “conflict zones”, which is rather remarkable. The farms literally exist as magnets for attracting the nomadic herdsman, some of whom come to the farms armed with sophisticated weapons acquired through civil wars in neighbouring countries. The protracted nature of the conflicts explains why the State with its enormous resources is the most qualified as the ultimate source of power for mobilising resources for finding a long-term developmental solution to the conflicts.

6.4 The programmes and projects in the government policies and plans for preventing the conflicts

The findings reported here address the third study objective. As was discussed in the literature review, it is now common knowledge that the state institutions in the nation states of contemporary Africa see as one of their basic responsibilities the task of helping communities to formulate and implement numerous programmes for the public good (Shackleton et al, 2002). Among the objectives of such plans are the imperatives of

building bridges between communities in order to promote the idea that cultural differences need not constitute the basis for conflicts.

Communities in the various local government structures of Africa have become used to such state-sponsored plans which tend to present a bright future for the households concerned. The state governments have been using official policy documents and the media, among others, to provide opportunities for the possibilities of a better life for all through the mechanism of local development policies and plans (Khalil, 2000). The need for using development plans as tools for promoting sustainable development in the rural development process has been well discussed by Abdel-Ati (2001), Chambers (1983), Mark and Gordon (1998), and Redclift (1987). These authors maintain that the themes, philosophies, and objectives in the development policies and plans need to promote ideals of peaceful coexistence, integrated development, sustainability, and long-term increases in living conditions.

With specific reference to the policies and plans on the conflicts under study, the findings from the government documents that were made available to the researcher (the Sudan government development policies, plans, annual reports, conference papers, and minutes of meetings) reveal that they aim to emancipate the rural communities from the powers exerted by the cultural differences on the use of their natural resources and the conflicts linked to this situation. They aim to do this through self-reflection whereby the communities can be assisted to become aware of the forces which have been motivating them to see crop farming and nomadic activities as incompatible systems that should engender violent confrontations.

One feature of the plans of the successive Sudanese governments concerns the common message they convey about how they could be jointly implemented by all sections of the society concerned (Government of Sudan, 2014a, 2014b). In this way, the development plans have been presented to the public as mechanisms with the potential to promote progress. This potential powers inherent in development policies and plans are however often over emphasised by politicians and public servants.

The findings in this chapter indicate that pictures are often painted by the government and other public officials about the nature of the good life out there which the local communities can attain from the development plans. The targets in the various local plans are often used to paint a picture of where the Sudanese public could find themselves in the future (Government of Sudan, 2012, 2013). Since political independence in 1956, there have been numerous government-sponsored development plans on health, environmental conservation, tourism, housing, agro-based industrialisation, technology and innovation, water and sanitation, and training programmes on traditional local government leadership, among others.

The vision statements in the government documents that have been accessed on the prevention of the conflicts between the crop farmers and the nomadic herdsmen indicate a list of development plans and programmes for the 21 districts. Getting access to the nature of information in the public documents, annual reports, official correspondence, and other written information constituted a key source of information in this study. Bowen (2009: 33) points out that documentary analysis is a form of qualitative research which has the potential to reveal the intentions, ideologies, theories, and the nature of future changes that the authors of the

documents have in mind. The discussions in this part of the study are thus the researcher's own interpretations of the policies and plans of the government of Sudan for addressing the conflicts between the nomadic herdsmen and the crop farmers.

It is to the credit of the various governments of the Republic of Sudan to have found it necessary over the decades to set up various committees from the government departments to help build peace between the crop farmers and the nomadic herdsmen. The mission statements in the documents that have been accessed on the peace initiatives indicate that the overall objectives of the policies and plans are to find ways of preventing the conflicts between the crop and nomadic herdsmen in the 21 districts of the Greater Kordofan region.

A review of the policies and plans shows that they have a long-term vision of finding ways of bringing to an end the annual migrations of the nomadic herdsmen (Government of Sudan, 2007, 2009, 2013, 2014a). For example, the review of the Sudanese government document titled "The Conflicts Between the Sedentary Crop Farmers and the Nomadic Herdsmen – Towards a Solution" published in 2013 indicate that much consultation has taken place over the years to get the households to see the need for the implementation of the policies, plans, and other forms of agreements in place for peacebuilding between the two communities. Other government documents on the conflicts highlight that there are ample opportunities for revisions to be made to the policies and plans.

Concerning the objectives behind the policies and plans, one issue that runs through them relates to the attention which is paid to projects in North Kordofan and other arid parts of the Greater Kordofan region. The

government officials explained that the rationale behind this is that if water shortage with its concomitant of aridity, lack of grass and other forms of fodder for livestock, and poor soils and drainage systems for supporting full-time crop production is the basis underpinning the annual nomadic migrations to the more rainier south, then addressing these problems at the source region (that is, within North Kordofan and other zones identified with aridity) would hold much potential to encourage sedentary forms of livelihoods for the local communities in the long run, provided the economic activities for supporting this form of society are provided to the nomadic herdsman. In articulating this position, the government officials thus demonstrated that much time has been spent over the years in understanding the underlying reasons for the nomadic migrations and the conflicts associated with them. The discussions with the government officials indicated that they are very much aware that the source of the conflicts was primarily attributable to the annual nomadic migrations and that other factors fuelling the conflicts could only be considered as secondary.

This position advanced by the government officials was confirmed through a review of the various projects and programmes in the government policies and plans for getting rid of the conflicts. Reviewing the nature of policies and plans is an important aspect of critical realist research projects, since it touches on the identification of the structure, constitution, and elements within social mechanisms and what they are capable of doing. The findings in such reviews constitute a posteriori disclosure expressing the real essence of the policies and plans indicating their causal powers for producing certain intended outcomes. Ascribing causal powers to the policies and plans on the conflicts thus involves offering a schematic

explanation of their potential effects on the conflicts (Harre and Madden, 1975: 105).

The reviews of the various documents that are scattered in various government offices reveal that the current government policies and plans for addressing the conflicts between the crop farmers and the nomadic herdsmen in the Greater Kordofan region cover the following issues:

- The assignment of special responsibilities to certain government officials in designated government departments of Sudan as instruments for policy and development plan formulation and implementation to ensure peace between the crop farmers and the nomadic herdsmen.
- The assignment of special responsibilities and powers to the Sudanese Police and Public Safety Department to prevent and enforce peace between the crop farmers and the nomadic herdsmen in the Greater Kordofan States.
- Plans for the creation of a number of projects in specific centres to link some of the crop farming activities to nomadic activities. These include programmes on the use of cow manure as fertilisers for the crop farmers and also of the use of the crops grown by the farmers as animal feed for the nomadic herdsmen.
- The creation of corridors and pastoralist camps for the nomadic herdsmen as legitimate pieces of land to use on their annual migrations.
- Plans for encouraging the households to conserve rainwater by building simple rainwater storage facilities in their homesteads.

- Plans of the government for building infrastructure projects such as dams, ponds, wells, and irrigation facilities which can be owned and managed by the local communities.
- Plans for promoting community-based afforestation projects.
- Plans for promoting community-based soil conservation projects.
- Plans for promoting the development of the crop farming and livestock sector through the provision of extension education and other services.
- Using designated villages as resource or exhibition centres for the crop farmers and the nomadic herdsmen. Such centres are to be designated as “peace villages” or resettlement schemes for public education on the role of human settlements as centres for permanent human residence, work, income generation, and leisure.
- Plans for opening up opportunities to the nomadic herdsmen to see their livestock as commodities for generating material wealth.
- Plans for encouraging the crop farmers and the nomadic herdsmen to engage in mixed farming.
- Plans for organising bi-annual education programmes, festivals, and other workshops in the 21 districts for bringing the nomadic herdsmen and crop farmers together to share ideas.

The above indicate that the desire exists on the side of the Greater Kordofan government to use various policy and development plan instruments to produce positive change in the relations between the crop farmers and the nomadic herdsmen, and to use such relations to improve

the living conditions of the local communities. An analysis of the plans highlights that they very much target or focus attention on the nomadic activities which are seen as a major problem area in the conflicts.

No meaningful evaluation of the impacts of the policies and plans is thus possible without taking account of the various elements within them. From the earlier discussions in Chapter 3 and Chapter 4, the objectives behind the policies and plans are towards peace and a better future. They are towards the idea of freedom from constraints as argued by Bhaskar.

In the section that follows, the information collected on the achievements or impacts of the plans on the conflicts are discussed.

6.5 The project implementation challenges of the plans for conflict prevention between the crop farmers and the nomadic herdsmen

This section of the findings is devoted to the identification of the gaps between the objectives set in the various plans on peacebuilding and the actual achievements. It is therefore very much about the information disclosure on the 1M phase of the MELD model as mentioned earlier.

The overarching findings on the implementation of the vision, policies, objectives, and the targets set in the conflict prevention process indicate that generally, the failures far outweigh the achievements. Numerous backlogs were found to exist; poorly maintained projects were found at several project sites; the culture for responding to existing problems timeously was found to be absent in most cases; and the basic principles of good project management were hard to find in most cases. Although occasionally instances of some local initiatives at preventing the conflicts were noticeable, the overall finding on the implementation of the

aforementioned plans for peacebuilding between the crop farmers and the nomadic herdsmen was one of low achievements.

Another remarkable finding of the study concerns the apparent sense of knowledge and conviction on the part of the stakeholders linked to the conflicts concerning the different roles which certain individuals and groups have played in the past. These include roles either to support or undermine the efforts of implementing the government policies and plans for building peace between the crop farmers and nomadic herdsmen.

The findings indicate that the majority (over 85%) of the communities interviewed agree that references need to be made to the past in order to avoid generalisations and also to understand the reasons underpinning the failures and successes that have accompanied the foregoing government plans for getting rid of the conflicts between the crop farmers and the nomadic herdsmen. Their insistence on making references to the past and to the different attitudes displayed by stakeholders towards their assigned responsibilities in addressing the conflicts impressed upon the researcher the important roles that historical factors and human perceptions have played in the understanding of the current challenges in implementing the aforementioned plans for building peace between the crop farmers and the nomadic herdsmen.

One contribution of this section of the findings is therefore to bring to the attention of the public the importance of stakeholder accounts in capturing detail, diversity, and the change, which are useful in understanding the achievements and failures that have accompanied the plans for addressing the conflicts. One lesson emanating from the study findings is that as the conflicts between the crop farmers and the nomadic herdsmen continue to

present development challenges to the local communities of the Greater Kordofan region, the need for understanding how the conflicts have gone through twists and turns in the past, culminating in their current form, constitute an important framework for understanding the conflicts.

Capturing detail concerning individual and group behaviours in the implementation of the government plans for preventing the conflicts matters because this approach to accessing information lies in the way it can bring diversity into explanations. The contributions of those linked to the conflicts in guiding the researcher access the diversities associated with human value judgements are thus very much appreciated in this study. The accounts of the stakeholders linked to the conflicts have also helped the researcher to acknowledge that one cannot generalise on the nature of the contributions of the government officials charged with managing the government plans and policies for addressing the conflicts. The accounts of the stakeholders indicate that the officials have come and gone with various legacies – some positive, others negative.

The accounts of the stakeholders show that the plans for preventing the conflicts have been functioning under different managers with different attitudes to work, different leadership styles, and different attitudes to all those linked in one way or the other to the conflicts. The intended beneficiaries of the plans thus had the tendency of making references to their past experience under project managers whom they had given labels such as “good”, “average”, and “bad/disappointing” to indicate that the attitudes of those government officials have been important factors in the successes and failures of the plans on the conflicts. Under such circumstances, the impressions they gave about the successes and failures of the peace plans incorporated concepts based on two opposites – the

stakeholders who have been working to promote intended and unintended outcomes, desirable and undesirable achievements, or satisfactory and unsatisfactory results.

It is thus under such historicity that the account that follows needs to be seen. While acknowledging the generally poor performance of the government officials in implementing the plans for peacebuilding between the crop farmers and the nomadic herdsman, at the same time, however, the few cases of impressive performance also need to be taken into account. As is reported below, successes and failures in the implementation of the plans for preventing the conflicts tended to operate side by side in the programmes. It is only in the context of such comparisons that the concept of *gaps* becomes meaningful in this study.

6.5.1 The assignment of special responsibilities to government officials for facilitating the implementation of the policies and plans for ensuring peace between the crop farmers and the nomadic herdsman

The findings on this aspect of the peacebuilding processes between the crop farmers and the nomadic herdsman revealed that the government officials are central to the success of all the programmes. The officers are tasked with the management of all the programmes under the plans.

Figure 1.6 has earlier highlighted the importance of the triangular relations between the government officials, the crop farmers, and the nomadic herdsman. The role of the government officials was found to be so critical that any problems emanating from their side can only pose major problems to the whole project on peacebuilding.

A major finding in light of the above was the problem of an inadequate number of government officials for managing the programme. This problem was found to be due to the problem of inadequate funding from the government. Also, lack of funding was found to be the major reason behind the low salaries, the lack of promotion of the officers, the lack of transport facilities for them to inspect and monitor project sites, and the lack of allowances on housing and medical facilities to the staff.

The roles of the government officials in the success and failures of the programmes on the conflicts were found to be so central that one would have thought that all vacant positions in the 21 districts would be filled at any point in time with officers who have been incentivised enough to put in their maximum commitment. Putting in this maximum commitment was found to entail tremendous hard work involving project site visits for purposes of compiling critical information on project performance as was discussed earlier under Figure 1.5, and making recommendations for the effective implementation of the targets set in the various plans.

Lack of up-to-date, comprehensive research information compiled by the government officials was found to be one major shortcoming in the study. To a large extent, this problem was also found to be the result of the lack of resources for the officials to conduct quarterly research reports upon which important decisions could be taken.

6.5.2 The plan for promoting the development of the nomadic livestock sector into the cash economy

This is another project that was identified in the plans for peacebuilding between the crop farmers and the nomadic herdsmen. It is a common aspiration of the majority of the nomadic herdsmen to partake in the cash

economy. The study findings highlighted that the current challenge concerns the procedure and strategies for moving them out of the dominant nomadic-based activities into the cash-based economy. The findings showed that the transition to the cash economic system requires the development of reliable markets for the local farmers, improvements in the road network systems, extension education, and the provision of financial support to the nomads.

In addition, the government officials encouraging the nomadic herdsmen to produce specified animal feed for the market could develop the cash economic system. On the side of the herdsmen, the crop farmers are aware of the milk products, the beef, hides of the animals, and other items of trade which the herdsmen can supply to them.

Such aforementioned exchange relations are an important plan which needs to be seen as a vital instrument for building positive relations between the two communities. The monetisation process has the potential to expand the markets of the crop farmers and the nomadic herdsmen in terms of export opportunities to the neighbouring countries. For the districts in North Kordofan, government trade agreements on livestock exports could mark a revolution in the nomadic activities as the livestock products are transformed from cultural resources into economic and income-generating resources.

For the southern districts, the government could assist in the process of monetisation by helping to build projects on small-scale agro-based industries and Small Medium Micro Enterprises development. Rural electrification programmes need to be on the list. The government needs to help by putting up mechanisms for expanding the production and

marketing of millet, groundnuts, sesame, cowpeas, sorghum, gum-arabic, cotton, maize, and various fruits and vegetables. Mixed farming training programmes need to form part of the crop production processes.

The lack of implementation of projects such as the above in the villages of the Greater Kordofan district illustrates the little that has been achieved in terms of bringing the subsistence farmers into the cash economy. The objective behind the monetisation plan is to use the income creation changes as a means for bringing the crop farmers and the nomadic herdsmen together around a common imperative of partners in business development. The study findings indicated that the little commercialisation activities emerging in the nomadic sector, for example, were largely due to individual family initiatives which tended to be sporadic and temporary in most cases.

6.5.3 The plan for the creation of corridors and pastoralist camps for the nomadic herdsmen

As highlighted in the aforementioned list, one of the projects which the various government departments of the Greater Kordofan region often point to as a measure of their involvement in the development of the crop farmers and the nomadic herdsmen relates to the corridors which have been established across the province for use by the nomads on their trips. Figure 6.4 is a map of these corridors. The records highlight that there are plans for establishing ponds, small shops, places for camping, and also for supplies of fodder for the livestock along such corridors (Institute for Environmental Studies, University of Khartoum, 1985; Larid and Odhiambo, 2002; Oxfam, 2004; Harrison, 2006).

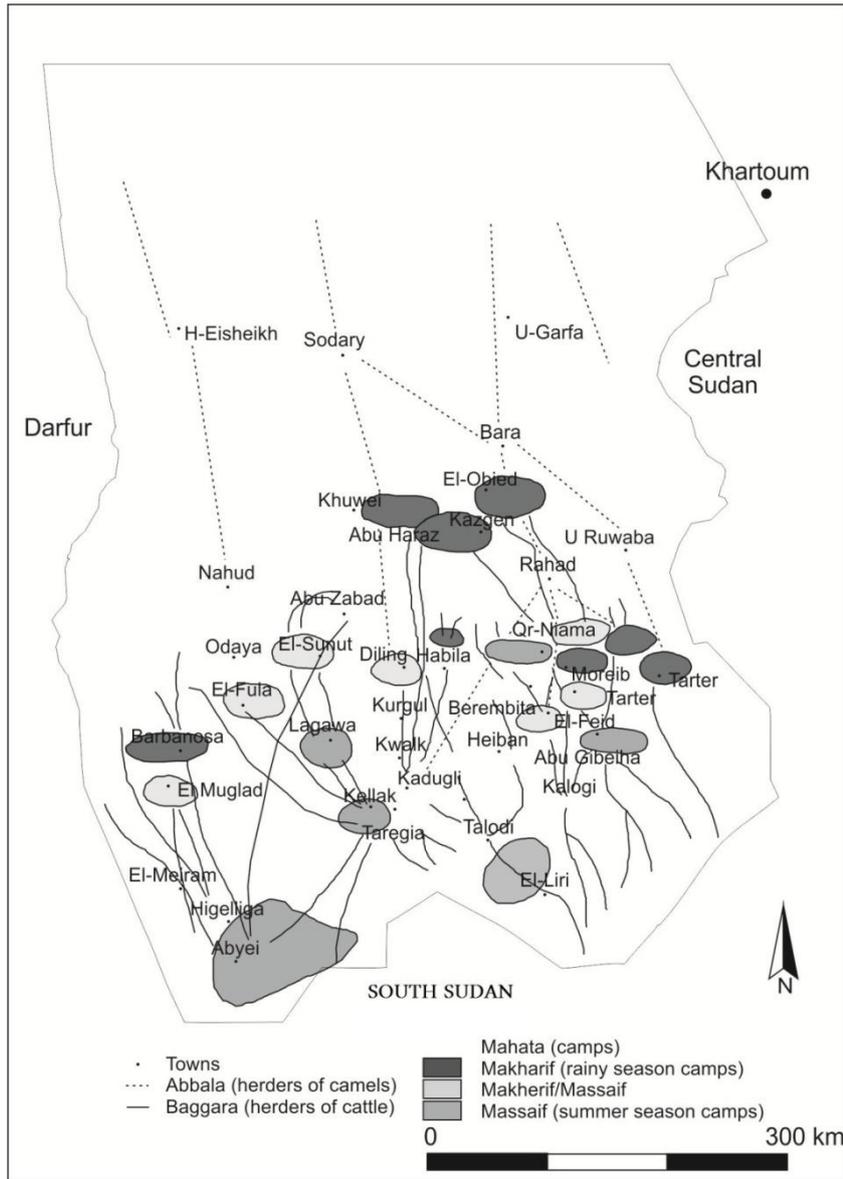


Figure 6.4: Map showing the major corridors currently used by the nomadic herdsmen

The study findings revealed that there are currently 22 main corridors serving as routes for the nomads and their livestock between North and South Kordofan. Some of the corridors cannot, however, be used during periods of heavy rains as a result of the poor maintenance conditions of the corridors. Conflicts between the crop farmers and civil unrest were found

to have led to the abandonment of some of the corridors, to the shortening of some of the routes, and also to the shortening of the length of stay of the nomads in the camps.

The research on the corridors led to the finding that currently there in the Greater Kordofan region there are about 13 million sheep, 8 million cattle, 3 million camels, and about 8 million goats. It emerged that some crucial changes are gradually taking place in the pastoral activities. For example, one finding was that some crop farmers in South Kordofan occasionally engage in transhumance activities. Also, it emerged from the study that some cattle-owning nomads from North Kordofan occasionally decide not to engage in the annual migrations but to stay put. In addition, some nomads (although just a handful) were found to be interested in making their future livelihoods in the planned resettlement schemes. Another interesting finding was that camels and desert sheep, which traditionally seldom moved down to the districts in South Kordofan, are now increasingly becoming an important part of the caravan routes to South Kordofan.

In addition, some camel pastoralists who used to graze their livestock in the Darfur region to the west of Greater Kordofan were found to have changed their routes eastwards to South Kordofan as a result of the civil wars in the Darfur region. This situation is putting more pressure on the already limited grazing resources of South Kordofan. Such developments were found to be contributing to the problem of animal feed deficit or a shortage of about 2 million tons in the Greater Kordofan region.

6.5.4 The plan for building the productive capacities of the two systems through the development of water conservation

It is significant that the public authorities have recognised water scarcity as a major factor in the relations between the crop farmers and the nomadic herdsman. Abdelrahman, ElFatih and Ali (2010) have discussed the roles of rain-fed agriculture in the livelihoods of the rural communities of Sudan.

The study findings indicate that the north-south differences in the agricultural activities of North and South Kordofan can to a large extent be related to the differences in the annual amount of rainfall, the underground water reserves, and the drainage systems between the two regions. Water is so critical in the lives of the rural communities in the northern parts of Greater Kordofan to the extent that the government officials describe the region as the land of water and thirst. They argue that water is a make or break issue for the development of the region. The region has massive underground water reserves that are part of the largest source of fresh water in the world – that is, the Great Nubian Sandstone aquifer.

The study findings revealed that there are plans in North Kordofan for building wells, small dams, irrigation schemes, establishing numerous farms for producing fodder for the livestock, plantations for firewood harvesting, crop farms for human consumption, and market centres for transforming the subsistence mode of production into the cash-based economy at particular nodes. These programmes fall under what is popularly known as “solving the problem at its source” or “taking the solution to North Kordofan” model. Most of the government officials describe this as a plan for the comprehensive environmental management of the districts in the northern parts of Greater Kordofan where the annual

migration to the south originates from. The rationale behind this approach to the conflicts problem is that addressing the “push and pull factors” in North Kordofan which motivate the nomads to migrate to the south would constitute one important solution for halting the yearly movements to the south. This is in fact one of the programmes which was found to be the backbone of the SOS Sahel (SOS Sahel International, 2008) and other non-government organisations in Sudan (European Union and United Nations, 2012).

These “Focus-and-Concentrate” development programmes for North Kordofan were found to entail a number of things. In the first case, they involve massive land and soil reclamation projects in the districts of North Kordofan, which would involve the movements of rocks, stones, and other materials to enable the levelling of the land surface, thereby making the cultivation of the land possible. The labour force for such community-based activities would ironically have to be the nomads themselves and their families. In the second place, it would also involve the organisation of the land tenure systems in order to make it possible for the nomadic families to pay attention to and direct their energies to particular plots of land which they could call their own. It would further imply that culturally, this would entail putting a stop to the annual southerly migrations by the nomads and directing attention to the development of their plots and the surrounding countryside.

There are a number of plans in some of the government offices in the study region that give some indications about the number of small-scale ponds and irrigation projects planned for the Greater Kordofan region. The objectives of the plans cover supplying reliable sources of water via ponds and irrigation projects for the livestock and crops of the region. About 51

such plans for the building of ponds were identified in the various offices in the 2015/16 financial year.

Taking the magnitude of the problem of water shortage into consideration, the above information only highlights the major tasks that lie ahead. Out of the 51 planned projects, only the above list seem to have taken off, but even then, the volumes and reliability of the water supplied by the dams were found to be woefully poor.

6.5.5 The plan for encouraging the households to conserve rainwater by building simple rainwater storage facilities in their homesteads

Astonishingly, one of the study findings was that little of the rainwater is tapped to the full. The bulk of the water is allowed to flow freely on the ground only to evaporate. This problem of water wastage is being addressed through campaigns aimed at encouraging the households to build their own locally made reservoirs by tapping the rainwater into wells, pots, streams, and other sources as conservation schemes.

The campaigns also include the use of contour ploughing as a tool for tapping the rainwater and channelling it into the farms and other sources of importance in the lives of the households. The campaigns thus form important aspects of water management at the household level.

The findings brought out, however, that few of the houses have constructed the pipes on top of their roofs to channel the rainwater into their water containers, their vegetable plots, and to distant water reservoirs. The abundance of thatch roofs implies that few of the houses can apply the pipe method for diverting the rainwater into tanks and other sources. This problem, notwithstanding the general impression, was about the general

absence of efforts on the part of the households to conserve rainwater. Rainwater, with its complex relations with food production, needs to be conserved to reduce the many development problems of the Greater Kordofan region.

6.5.6 The plan on community-based afforestation projects

This plan can be described as one of the most essential from the environmental conservation perspective. It is to the credit of the government of Sudan for recognising a programme on afforestation as being critical for improving the living conditions of the crop farmers and also for the livestock activities of rural Greater Kordofan.

The interviews that were conducted with the government officials linked to the nomadic herdsmen and the crop farmers revealed that the rural communities in the 21 districts have over the years been encouraged by various government departments and other non-government organisations to set up local well-fenced forest reserves in the villages for supplies of firewood, building materials, and animal feed, among others. The information obtained from the officials indicates further that the ecological benefits of forest reserves have also been demonstrated to the local communities.

Lack of funding was mentioned by the government officials and the households as the one major reason why this scheme is not widespread in the villages. There were a number of cases where abandoned afforestation projects were pointed out to the researcher in several villages. The explanation was that funds for acquiring the planting materials, fertilisers, water equipment, and paying allowances for labour were not available.

Under these circumstances, it was clear why this project has also not been implemented in the local communities.

6.5.7 The plan on community-based soil conservation projects

Soil conservation plans were also identified in the official documents as part of the programmes for the crop farming and nomadic herdsmen activities in the districts of Greater Kordofan region. The extension officers, in particular, took time to explain the impacts that soil conservation programmes can make in the areas of afforestation, crop farming, grazing, in the protection of the drainage systems of the rural areas, and in the prevention of wind and other forms of erosion.

The plans for this programme involve the rural communities organising the households to collect the stones, rocks, and other undesirable materials from portions of land identified by the communities for development. With the removal and preparation of such pieces of land, mulching and other land conservation activities are then expected to follow. The general concerns of the communities for the failures of such plans taking off were attributed to the lack of financial and human resources to implement the plans.

6.5.8 The plan for encouraging the nomadic herdsmen and crop farmers to engage in mixed farming

The government officials highlighted mixed farming activities as one activity that has the potential to transform the nomadic activities in the local communities. The explanation was that where the afforestation, soil conservation, and water-related projects can take off successfully in the local communities, the livestock farmers can then be in a position to combine grazing with crop farming, thereby benefitting from the benefits of both activities instead of seeing them as separate and incompatible activity systems.

The argument of the government officials was that complementarity instead of separation needs to constitute the foundation of successful rural development. The government officials also maintain that seeing the natural environmental system in terms of integration instead of separation held the key to progress.

6.5.9 The plan for organising festivals, workshops, and other activities for bringing the nomadic herdsmen and crop farmers together to share ideas and experiences

From this philosophy of natural environmental systems integration, the plan on the hosting of cultural festivals, showcasing the key features of nomadism, and sedentary crop production was justified by the government officials as the cultural dimension of the interdependency idea or theory.

This plan has the potential to demonstrate in practical terms to the public the strongbonds which need to exist between the crop farmers and the nomadic herdsmen. The officials indicated that film shows, seminars, road

shows, conferences, and other forms of meetings form part of the plans and strategies for building bridges between the nomadic herdsmen and the crop farmers.

The study findings showed that this is one of the plans that is yet to be implemented.

6.5.10 The plan for using extension education for promoting the activities of the crop farmers and the nomadic herdsmen

The provision of practical non-formal education to the crop farmers and the nomadic herdsmen in the form of land preparation, cultivation, supplies of planting materials, fertilisers, water harvesting, veterinary services, pest control technologies, the application of mixed cropping technology, technologies on crop harvest storage facilities, and other education programmes appear in the list of plans for the development of the crop farming and nomadic herdsmen activities. The idea is that empowering the farmers with such skills has the potential to increase their output and incomes and thereby reduce any motivations towards conflicts. The plans bring out that the research institutions and other organisations in Sudan have the intention of forming associations with foreign networks with the objectives of building the human manpower resources for providing technical and other forms of training programmes for the crop farmers and the herdsmen. The plans also include programmes for the annual hosting of agricultural shows for advertising the activities of successful local crop farmers to the local communities.

Because of the problems of lack of funding for employing the requisite personnel for acquiring the relevant capital equipment and improving the working conditions of the extension officers, it was found during the

interactions with the local communities that the extension programmes had virtually come to a standstill.

Table 6.2 provides a picture of the objectives that were set in the extension programmes in 2015 and the actual programmes that were carried out.

Table 6.2: Some key statistics on performance in the Extension programme (2015-2016)

Number of extension programmes (practical training and demonstrations) that were planned for selected villages in both North and South Kordofan	Actual implementation (demonstrations) that were carried out
Building cattle ranches in North Kordofan	20% of the planned target
Demonstrations on the application of fertilisers	25% of the planned target
Rainwater harvesting technology	15% of the planned target
Livestock inoculation	20% of the planned target
Mixed farming methods	30% of the target
Animal feed harvesting and storage	40% of the planned target
Milk production	25% of the planned target
Hosting of agriculture shows	10% of the targets

Source: Extension Offices in Kadugli and El Obeid

The statistics in Table 6.2 provide some impression concerning the little that was achieved in the area of extension education in both North and South Kordofan for the period 2015-2016. As indicated next, the budget allocations for this sector have not expanded over the last 10 years.

6.5.11 The plan for using designated villages as resource or exhibition centres for the crop farmers and the nomadic herdsmen

This plan involves programmes for the systematic selection of some of the villages of the Greater Kordofan region to serve as nodes, growth points, or demonstration centres in which nomadic families and crop farmers would live together. Such settlements are to be designed in such a way as to accommodate the economic, cultural, religious, and other needs of the two communities.

Currently, one finds a situation in the Greater Kordofan region in which the southern districts are largely indigenous, having Africans with crop farming as their source of income. The religion is largely Christian and African traditional-based. In the north, the Islamic religion dominates, and the bulk of the nomadic activities are based in this part of the Kordofan region.

The idea behind the integrated settlement programme is to demonstrate the extent to which human settlements could be used to make the crop farmers and the nomadic herdsmen live side by side. Living in such close proximity would thus offer the possibilities of the crop farmers and the nomadic herdsmen to share the soils, vegetation, water, fauna, and other resources. Under such circumstances, this programme sees human settlement structures as important mechanisms for cooperating in economic activities, for establishing mutual understanding in the cultural sphere, and through this, finding the rationale for peacebuilding. The term peace villages has been coined by the local communities for this programme. The

scheme is also seen by many as a tool for promoting sedentary lifestyles, developing the urban and industrial sectors of the Greater Kordofan region.

Among non-government organisations that were found to be involved in this programme was Oxfam. Some of the annual reports of this organisation indicate that the settlement schemes hold much potential for peacebuilding between the two communities (Oxfam, 2004).

The government because of financial, administrative, and other factors has not implemented the programme.

6.5.12 The plan for the creation of specific projects to link some crop farming activities to those of the nomadic herdsmen

This project is intended to bring together groups of crop farmers and nomadic herdsmen in selected villages to serve as models emphasising the integrated or complementary nature of the two activity systems. From the interviews with some of the government officials, this initiative has both economic, cultural, and ethnic dimensions, since the divide between the two systems has over the years taken religious and ethnic dimensions – largely Nuba crop farmers and Arabic, nomadic, Muslim herdsmen.

The government officials have plans to communicate with the crop farmers and the nomadic herdsmen about the importance of crop farming and nomadic herdsmen activities in the local development processes. This will help to educate the public about the fact that there is nothing irreconcilable between the two.

Providing information not only to the crop farmers and the nomadic herdsmen but also to the broader population of the Greater Kordofan region about the legitimacy and equal importance of the crop farming and

nomadic activities is very important. The findings showed, however, that such public education programmes have not been running. The study findings highlighted that one of the plans of the government is to use some of the government officials to purposefully provide education to the rural households about the need for the communities to give equal recognition to the crop farming and nomadic activities of the Greater Kordofan region. From the reading of the plans on this project, the education programmes are to be provided in the 21 districts for the benefit of the crop farmers and the nomadic herdsman.

The potential benefits of such a programme cannot however be ignored. This programme could be organised in schools and other public institutions to help in the efforts of building knowledge on the importance of the linkages between the two activities in the development of the 21 districts. In the absence of such public education programmes, it is not surprising that the rural communities do not rank the crop farming and nomadic herdsman activities equally, whether in terms of credibility, social status, economic importance, or other measures.

From the critical theory perspective, this programme of providing public education on the credibility of social systems could be seen as an exercise in giving education to the communities to build bridges between their cultures. It is a plan for increasing individual awareness about their cultural lenses which can be created through self-reflection. The role of this government education programme then is to pave the way for the crop farmers and the nomadic herdsman to engage in cultural self-reflection so that they could discover the need to support one another. The education programmes must advance inter-subjective understanding so that the two

communities could uncover those processes within their culture that need to change in order to accommodate one another.

The attempts by the researcher to obtain information on the activities organised over the past five years by the government departments on such education programmes in the districts proved futile. Neither the intended beneficiaries of such programmes nor the budgetary allocations for this project could be identified in the villages by the researcher. The information obtained from the field illustrates that the intention of the government is to promote trade, small-scale agro-processing, leather works, dairy products, and tourism activities in selected settlements.

A number of models are planned under this scheme. In the first, the two communities will coexist and engage in the trade and other relations in the same villages. In other cases, the families would reside in their current locations and only trade among themselves.

There is no doubt that this plan is another initiative which has its own unique contribution to make in the peacebuilding project. The funds have not however been released from the government budgets for this project to take off in a big way.

6.5.13 The challenge of project non-implementation

Most of the above-mentioned plans were thus found to be aimed at preventing the north-south migrations of the nomadic herdsmen. Others are underpinned by the need to increase crop and livestock production. Some of the plans were found to exist to address deforestation and soil erosion problems. Some projects were found to have been conceived with the objectives of promoting skills training, job creation, and income

generation. It was also the case that some of the plans were aimed specifically at peacebuilding and promoting cultural and mutual understanding.

There is no doubt that the multi-faceted nature of the projects has the potential to build the peace needed between the crop farmers and the nomadic herdsman. This, in turn, can lead to maximum attention being paid by the communities to addressing practical development problems of the Greater Kordofan region.

The above discussions bring out that overall, the performance of the stakeholders in relation to the plans in place to prevent the conflicts have been unsatisfactory. The overall picture which emerged from the study findings was that the crop farmers and the nomadic herdsman live with policies and plans which are yet to be fully implemented.

As was mentioned earlier, one particular question in the questionnaires sought to obtain information from the government officials charged with overseeing the peace plans between the crop farmers and the nomadic herdsman. The officials provided data which indicated that generally, on average, only about 25% of the targets set in the various plans for preventing the conflicts have been achieved over the past 10 years. They explained that such limited success stories only point out the enormous task that lies ahead.

For the majority of the government officials, not much can change in the absence of the resources for implementing the objectives in the plans; to them, the plans will for long remain as empty dreams and that the conflicts between the crop farmers and the nomadic herdsman can therefore only continue in the absence of the means for implementing the peace building

plans. They expressed concern that achieving only 25% of set targets is rather disappointing.

To worsen the unsatisfactory budgetary situation, political unrest is a major security problem which found to continue to draw on the limited budgetary funds of the Central Government of Sudan Administration. They also tend to divert the attention of the central government more and more towards security issues. Public protests against the Government administration have been increasing and taken numerous forms such as street protests in the major urban centres of Sudan over the past 10 years and also in the form of “bush wars” in the forests of the Nuba Mountains. In this part of Sudan, sections of South Sudan armed forces are assisting armed groups in the Nuba Mountains region to engage in secessionist activities against the Government administration. Moreover, with limited foreign exchange in an economy which is not expanding, the Government administration can simply not mobilise the funds to successfully address the conflicts between the crop farmers and the nomadic herdsmen under study.

Other problems which the stakeholders mentioned as diverting the attention of the government of Khartoum include the increasing demands of all the provinces for their share of the national budget allocation; the threats of secession from Darfur; the negative impacts of climate change, particularly in the northern parts of Sudan; the increasing population growth; the increasing problems of uncontrolled rural-urban migration; and the problem of corruption in the public service of Sudan, among others. Under these circumstances, the stakeholders agreed that there is a need for the central government to take the necessary actions to solve the conflicts between the crop farmers and the nomadic herdsmen of the Greater Kordofan region. Their common position was that solving this conflict

problem can go a long way in reducing the development problems of the Republic of Sudan.

One major recommendation of the communities was that the government peace-building plans between the crop farmers and the nomadic herdsmen need to be implemented on the basis of clear timelines. Their concern was that adherence to timelines is missing in virtually all the peacebuilding initiatives. This to them constitutes a major challenge. The implications of this flaw in the project management processes cannot be ignored. This implies that backlogs in projects implementation can only pile up. Moreover, in the absence of the resources needed to undo the conflicts, the tendency has been for the conflicts to increase with time, particularly in the districts of South Kordofan.

The general response from the communities in South Kordofan was that the conflicts between the crop farmers and the nomadic herdsmen have been increasing over the decades. It was not easy to obtain specific statistics on this. Statistics on this would have been very important. However, the overall impression of the stakeholders was that the conflicts between the nomadic herdsmen and the crop farmers have been increasing over the years.

Some estimates of statistics which the researcher was able to compile on the conflicts in some of the districts appear in Table 6.3 covering the period 2015/2016.

Table 6.3: Key statistics on the conflicts between the crop farmers and nomadic herdsmen, 2015-2016

District	Human lives lost to the conflicts	Livestock lost to the conflicts	Number of crop farms destroyed	Infrastructure facilities destroyed
Al Dilling	270	3,000	120	7
Rashad	180	4,000	135	5
Abu-Jubaiha	150	3,500	100	6
Talodi	200	4,500	90	7
Kadugli	250	6,000	110	9
Lagawa	230	2,500	105	8
As-Salam	300	7,000	80	10
Abyei	350	10,000	50	12

One disclosure that needs to be made concerns the increasing sophistication of the weapons being used in the conflicts between the crop farmers and the nomadic herdsmen. In the past, research projects on the conflicts were presented in the form of arguments, verbal exchanges, and other forms of non-violent confrontations between individual crop farmers and the nomadic herdsmen. Today, the conflicts are being waged with locally manufactured bows and arrows and with sophisticated weapons from the civil wars in Libya, Chad, Southern Sudan, and Somalia. The findings indicated that today, local warlords continue to emerge to organise and train local and official militias to participate in the “battles” between the crop farmers and the nomadic herdsmen. Some of the crop farmers and the nomadic herdsmen as saboteurs and war criminals who are working to oppose the peaceful efforts to settle conflicts between the crop farmers and the nomadic herdsmen have described these warlords.

The persistence of the conflicts is thus a major development challenge given the fact that there are ongoing efforts to prevent them. An important element of the questionnaires of the study sought to obtain answers from the stakeholders regarding their views on the reasons for the persistence of the conflicts. The research participants were specifically asked to indicate the reasons why they thought the conflicts persist between the crop farmers and the nomadic herdsman despite the various efforts to get rid of them. Discussions on this aspect of the study appear in Section 6.8.

It needs to be mentioned that for security reasons, most of the police officers in the study region were found to be rather unwilling to provide statistics on the conflicts between the crop farmers and the nomadic herdsman. It was made clear to the researcher that this is a directive from the central government to prevent the media and other political forces from presenting a negative image of the central administration. Since this research is however about the conflicts between these very two communities, it was deemed necessary to include statistical information on the conflicts. No meaningful sense can be made of this study without informing the public about the number of conflicts between the two groups in the Greater Kordofan region. Without such statistics, no picture can be painted of the impacts of the conflict prevention initiatives. The statistics in Table 6.3 thus constitutes an important element of the study findings.

Efforts were made to obtain information on the conflicts in the districts from a number of sources – from the ordinary rural households, businesses, civil society organisations, and some knowledgeable people referred to by the communities and from Sudanese academics known by the researcher. The information displayed in Table 6.3 could thus be said to be based on the application of the triangulation method in which the same information

was obtained and confirmed from various sources. The information clearly shows that the conflicts between the crop farmers and the nomadic herdsmen continue to pose major security and other development problems.

The negative impacts of the conflicts on prospective investors cannot be over emphasised. Despite the relatively suitable ecological conditions for crop production in South Kordofan, and the economic benefits that are associated with it, the findings reveal that the crop production districts are increasingly being linked to the phenomenon of “resource curse”, since the trips of the nomadic herdsmen to the crop production areas of the south have served to give the impression of some of the villages in South Kordofan existing as “conflict zones”. Apart from the investors, the negative image painted by the conflicts to the outside world also needs to be mentioned. Potential investors to the Greater Kordofan region made it clear that they would rather look elsewhere to invest rather than operate in rural communities where safety and security cannot be assured.

The crop farmers and the nomadic herdsmen constitute the key actors of the human resources in the development of the rural Greater Kordofan region. In terms of the anthropology of the region, these two communities have the potential to present to the general public the nature of the organisational structure that has been developed in the rural livelihood systems. These two systems have taken centuries to evolve. In the area of economic development, the Greater Kordofan region has no other sector to look up to but to its crop farmers and the nomadic herdsmen. In the environmental conservation field, again the findings highlight that these two systems constitute the essential building block for long-term

sustainable environmental management given the wealth of the existing indigenous knowledge systems.

Conflicts cannot therefore continue to be allowed to constitute a framework for the analysis of the relations between the crop farmers and the nomadic herdsman. The existing development plans can and need to be used to replace the conflicts with peace. It is remarkable how much energy and time have been expended over the years in the formulation of development plans and policies for peacebuilding between the crop farmers and the nomadic herdsman under study. The one way in which such efforts can be rewarded will be for the relevant stakeholders to begin the process of implementing the plans. This will certainly be one way of appreciating the contributions of the local extension staff, the irrigation engineers, the politicians, the veterinary personnel, and the agriculture and rural land use officers, among others. The central government thus needs to acknowledge the reality that helping the communities to implement the plans on the conflicts between the crop farmers and the nomadic herdsman carries the seed for removing the current gap between the noble objectives of peacebuilding and the current and rather dismal achievements on the ground.

From the above discussions, it is therefore clear that the overall performance of the stakeholders to prevent the conflicts under study is far below expectation. The information generated in this section of the study thus represents the 1M phase of the MELD model. The findings under the 1M phase of the model indicate that major gaps exist as illustrated in Figure 6.5. Compared to Figure 1.8 in Chapter 1, one observes that *the key factors for change* in the model in Figure 6.5 refer to the *absence*

phenomenon that is, to the non-implementation of the policies and plans for peacebuilding (the desired state).

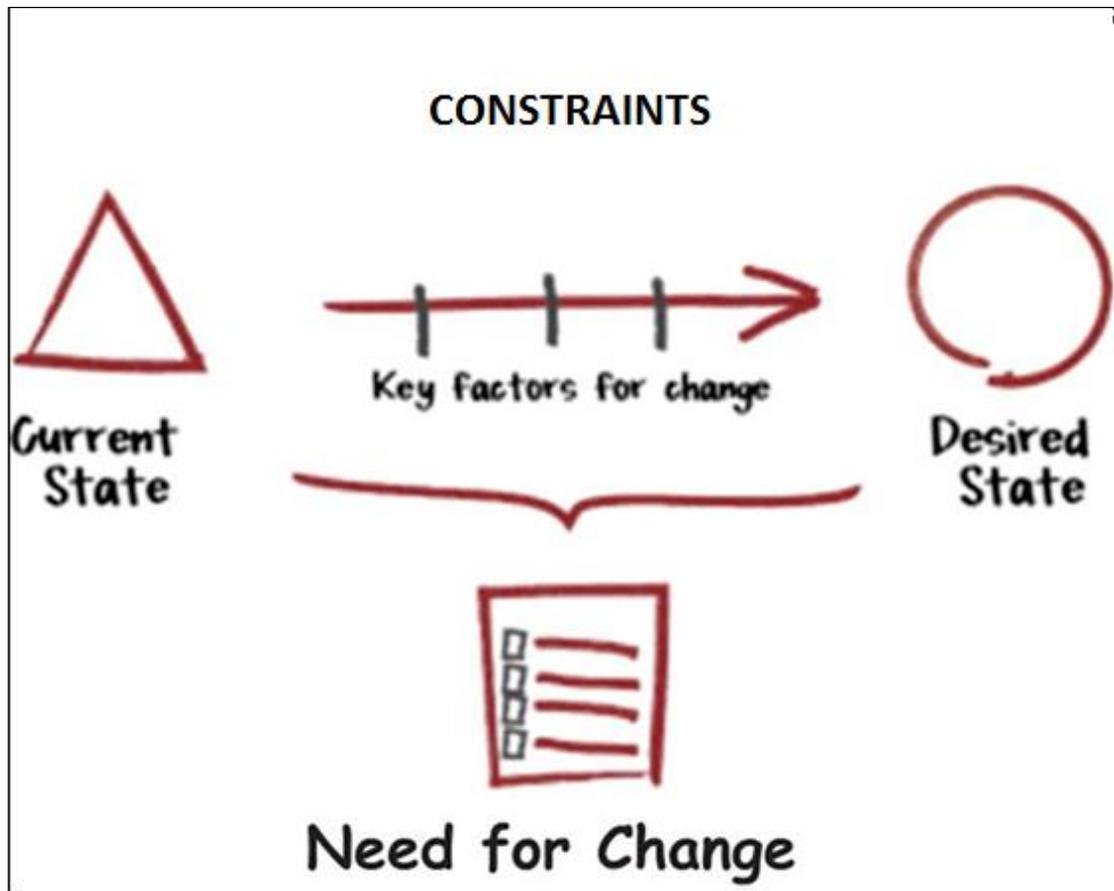


Figure 6.5: Model presenting the persistence of the conflicts as a form of constraint or challenge that needs to be dealt with

The above discussions (under 6.5.13) have helped to focus attention on the way in which the non-implementation of the plans continues to leave such plans as objects that exist merely as pipe dreams. This reality is yet to feature in the publications on the conflicts between the crop farmers and the nomadic herdsmen of the Greater Kordofan region. It is in this connection that this 6.5.13 aspect of the study findings needs to be seen as one of the new chapters that this study has sought to open in the

publications on the relations between the crop farmers and nomadic herdsmen under study.

At this stage, it would be beneficial to have a relook at Figure 1.5 which featured in Chapter 1 as an important model in this study. In Figure 6.6, it is clear that the non-implementation problem under discussion is located at Step 6. It indicates that the challenge of project non-implementation can only be understood by an examination of the success stories, no matter how limited they might be. The findings on the projects that have been successfully implemented appear in Table 6.4

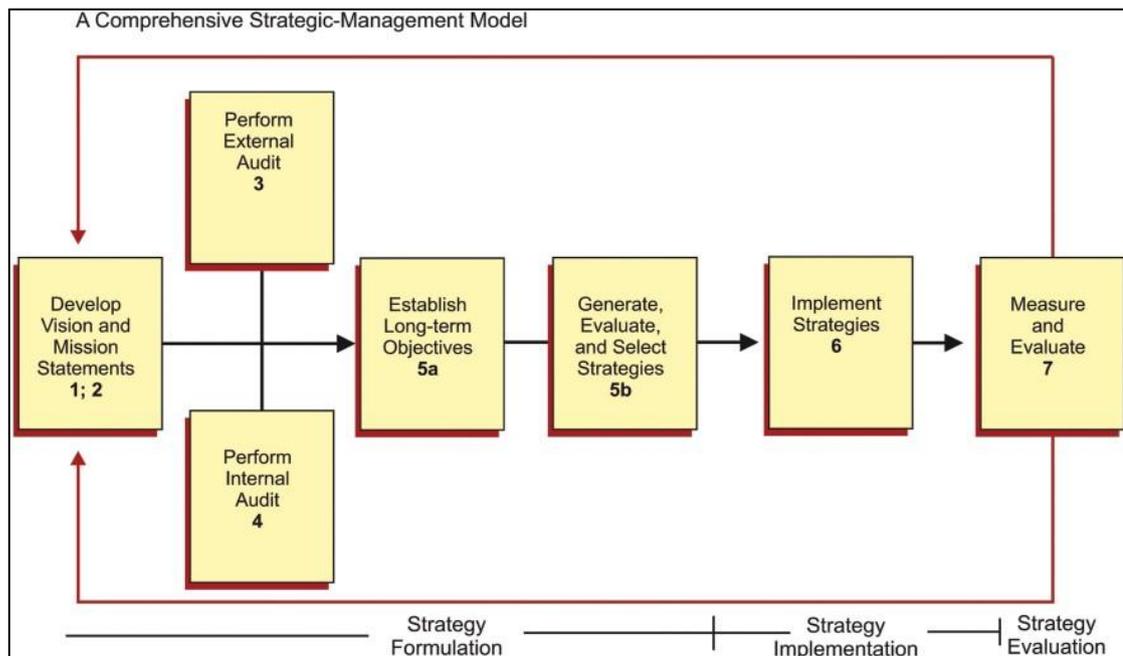


Figure 6.6: Model indicating the location of the problem of non-implementation of plans at Step 6

Table 6.4 provides a summary of some success stories in 2015 on the conflict prevention programmes that were identified in the field. These projects, however, cannot in anyway compare with the failures reported above.

Table 6.4: List of some successful projects linked to the plans on the prevention of the conflicts in 2015.

Project	District and estimated number of beneficiaries
Irrigation projects	Sodary, Nahoud, Bara : 120 households
Mixed farming	Gubeish, Kadugli, Rashad : 800 households
Wells and ponds	Al Rahad, Abugibeiha, Gabrat al Sheikh: 300 households
Soil conservation	Sheikan, Lagawa: 100 households
Promotion of nomadic businesses	Abu Zabad, Rashad: 150 households
Transformation on nomadic lifestyles into sedentary lifestyles	Bara : 120 households
Corridor project	Sodary, Bara, Ed Daleng, Kadugli: 200 families
Festivals/workshops on peacebuilding	Um Ruwaba, Umdam : 500 households
Police activities/monitoring programmes on the peace initiatives	Abyei police station as the key centre of operations
Extension education for nomadic herdsmen	Nahoud, Sheikan, El Salam; 300 households

The inspiration that could be obtained from the Table 6.4 concerns the idea that even in the midst of a general situation of constraints in project implementation, one can still find elements of some measure of success.

This is the type of information which is not readily available to the various stakeholders linked to the activities of the crop farmers and the nomadic herdsmen. It is a type of information with the potential to spur some confidence in the local communities that there is some evidence of successes on the peacebuilding programmes no matter how insignificant.

From the foregoing, it is therefore clear that it is in terms of comparisons rather than a situation of generalisation that one has to see the impacts of the project on peacebuilding between the crop farmers and the nomadic herdsmen. This type of balanced information presentation indicates that the current situation can become better than what it is at any time. It highlights that the specifications of the situations on individual projects at any time are indications of the kind of positive prospects that lie ahead. The current situation as reported is thus period-specific, since the future is still open for positive changes to take place. Thus, rather than just seeing the problems and project implementation challenges as somehow patterned in a particular deterministic way, the findings presented in Table 6.4 reveal that there are some elements of success in the government policies and plans on the conflicts under study.

6.6 Some missing elements in the plans

While the above discussions have disclosed some important aspects of the conflicts under study, no discussions on the structure of the plans in the overall peacebuilding project have been undertaken yet. Without such a discussion, the nature of the plans can remain undiscussed. As was discussed in Chapter 4, the causal powers of social mechanisms such as development plans depend very much on their internal constitution or

structure (Harre and Madden, 1975). The nature of the plans on the conflicts thus needs to be discussed in this study.

One surprising finding on the nature or internal constitution of the plans relates to the neglect of some critical issues. This discovery emerged through the interactions with the communities. This aspect of the findings is therefore reported under this section. This aspect of the findings is important because one element of critical realist theory concerns the need for evaluating the nature of development plans and policies with a view to identifying their potential impacts or causal powers. Where certain critical issues are omitted in the plans concerned, such plans will be limited in terms of their full potential impacts. This is an issue which Danermark et al (2005: 28) have discussed at length.

The theory associated with the causal powers or essence of social mechanisms indicates that the kinds and proportions of the constituents of social mechanisms constitute its essential nature and are responsible for their potential impacts. Changes in the elements within the mechanisms can thus produce important changes in its impacts. From this reasoning, it is clear that paying attention to the nature and number of the elements within the development plans and policies for addressing the conflicts under study is critical.

The review of the issues, components, or elements within the plans on the conflicts will therefore be incomplete without an analysis of the variables or elements constituting them. This is crucial because the more attention is paid to the elements in the plans, the more confidence one can have about their potential for addressing the conflicts. This section of the study thus

discloses some of the shortcomings, gaps, absences, or missing elements in the policies and plans for the peacebuilding processes.

From the discussions with the communities and from intensive reviews of government policies and plans for preventing the conflicts, the following flaws have been noted:

- *No plans for encouraging the rural women to get involved in the peace efforts, as women successful farmers and business leaders. No plans for empowering the rural women to participate in the peacebuilding efforts*

The role of women in the rural development has been discussed at various forums. Rocheleau (1995) argued that rural women of Africa hold great potential in projects dealing with biodiversity issues. Peet and Watts (1993) and Narraghi (2007) have also demonstrated how rural women organisations could be mobilised to promote peace in rural communities.

Women play critical roles in the development of the rural areas of the study region. The households explained that women are culturally excluded in major decision-making processes for the prevention of the conflicts. The absence of women politicians in important political positions in Sudan was also mentioned as one reason for the general neglect of women in the peacebuilding projects.

In the area of conflict resolution, Izike and Uzodike (2008) and Narraghi (2007) have demonstrated the pivotal roles which women organisations can play in the area of peace and reconciliation. The findings, however, indicated that no programmes are currently on the ground to give the local women such roles.

- *No plans exist for maintaining roads to link the villages to the towns of Greater Kordofan states*

This aspect of the study findings was a major flaw which was observed by the researcher. There was no indication in the plans showing how the government departments intended to link the peacebuilding programmes to the proper maintenance of the existing networks of feeder roads in the districts. The successful implementation of the various plans on peacebuilding required that the existing roads be in good condition to facilitate travelling by the government officials, the businesses, the delivery trucks, and passengers.

In the absence of good roads which were found to be typical in rural Greater Kordofan, the government officials highlighted why it is difficult for them to visit the rural communities on a regular basis and also for regularly conveying essential materials to projects sites.

- *No plans in place for developing indigenous knowledge specifically for the crop farmers and the nomadic herdsman on afforestation, soil conservation, mixed farming, pest control, and dairy farming*

The importance of linking the development of indigenous knowledge systems in rural development programmes has been highlighted (Knight, 1980; Hamilton, 1994; Mathias, 1995; Millennium Ecosystem Assessment, 2005; Kovach, 2009). Another major missing element which was noted in the plans on peace building related to the lack of attention to the upgrading of the indigenous knowledge systems for embarking on the afforestation, soil conservation, mixed farming, and related projects for increasing the output of the nomadic herdsman and the crop farmers in the 21 districts.

- *No plan for linking the indigenous conflict resolution systems in the plans*

Conflict resolution in the rural communities of the Greater Kordofan region needs the input of the traditional conflict prevention and peace building mechanisms such as those emanating from the traditional chiefs, local women organisations, and the religious organisations. It is rather surprising that such important sources of peace building were absent in the plans of the government.

- *No plan for linking private land ownership in the crop farming and livestock activities*

In some of the district offices, the researcher was informed about plans in the pipeline to effect and tenure changes. The changes were found to be in terms of granting legal ownership over the land for residential, agricultural, and other activities. Legalising land ownership is an important factor in the rural development process as Braukaemper (2000) and De Wit (2001) have demonstrated. Their position is that people tend to pay far more attention to their plots than land which seems to belong to the public.

One significant finding of this study concerns the policies and plans in place by the government to make land accessible to individual families (Government of Sudan, 2014b). The plans reveal that the Sudanese government acknowledges that giving legal status to family land ownership has the potential to motivate such families to increase output from the land. Interviews with the local communities in South Kordofan, in particular, indicated that the majority were in favour of private land ownership which they argued tends to promote hard work, the desire to

maximise the benefits from the land, and also the motivation to properly manage such land.

Interviews with the government officials linked to the land tenure changes highlighted that the implementation of the plans was yet to take place. The officials pointed out those changes were extremely difficult to carry out for a number of cultural and political reasons. On the cultural front, the impression was given that the concept of family communal land ownership was very strong in the villages, thereby making it difficult for individuals to claim any legitimate ownership of the land. On the political front, it was noted that civil unrest had characterised some communities where efforts had been made by the government authorities to introduce private land ownership in favour of the relatively well-to-do families. Thus, one major problem of the crop farms which the researcher observed related to the absence of fences for clearly demarcating the boundaries of the plots for residential, farming, and other land uses.

In the districts of North Kordofan, the study findings also indicated a similar situation where the policies and plans for encouraging private land ownership had not taken off. This is because of the lack of cattle ranches in the area. If the nomadic herdsmen could be introduced to the benefits of confining their livestock to serviced demarcated land, such as ranches, they could become aware of the need to develop such ranches on private or cooperative-owned land. Such ideas were however found to be missing in the plans.

- *Chaotic conception*

Chaotic conception is a terminology in the critical realist research project which highlights some common mistakes which are often committed by

decision-makers. It indicates either the omission of important variables or stakeholders in the conceptualisation of plans or, on the other hand, the inclusion of stakeholders and variables which do not actually matter in the formulation and implementation of policies and plans (Sayer, 1992: 105).

The phenomenon of chaotic conception prevents the smooth running of development projects. Those who feel that they have been left out in decision-making processes can go to the extent of sabotaging the programmes concerned. On the other hand, the forceful inclusion of those not qualified to partake in the decision-making processes can only lead to the inclusion of wrong contradictory items in the plans. The chaotic conception issue thus touches on important theories on social transformation concerning those with the relevant knowledge, skills, and other valuable resources to make positive contributions to the development effort.

With this analysis of the nature of the gaps that exist between the set targets and objectives in the peacebuilding plans completed, attention is now turned to another descriptive aspect of the findings –the geographical/factor analytical perspective of the conflicts.

6.7 A factor analytical perspective of the conflicts

The previous discussions ended on descriptions on the gulf that exist between some expected and actual situations on the conflicts. The objectives in this section of the findings are to disclose the nature of the statistical relations between some key variables associated with the study objectives, to find out how such relations express themselves as constructs or factors for ranking the patterns identified, and above all, to present the

rankings in a spatial perspective. The questions from which answers (information) were obtained for constructing a matrix table for subsequent discussions can be found under Part 3 of the questionnaires for the various stakeholders.

As was discussed in Chapter 1, human activities have their statistical, descriptive and geographical expressions (Johnston, 1987; Smith, 1987; 1998; Sayer, 1992, 2000; Blunt, 2004; Cloke and Goodwin, 2005; Dabinet, 2002; Eyles, 2008). It is therefore essential that these perspectives be disclosed in this section of the discussions. The study cannot be complete without providing information on some aspects of the geography of the conflicts in the districts of the Greater Kordofan region. Without disclosing such information, some important and thought-provoking aspects of the geography of the conflicts could be missing. This type of information is crucial for enriching the study by disclosing how the conflicts are manifested in the 21 geographical regions or districts used in the study.

For purposes of disclosing the statistical and descriptive aspects of the study, the multivariate technique of factor analysis was used to display the statistical relationship between some 23 variables that were selected based on the interactions with the stakeholders, whereby their concerns, aspirations, and recommendations for dealing with the conflicts under study became apparent. The details of the 23 variables are spelt out below. They cover economic, cultural, political, and social issues of the conflict relations between the crop farmers and the nomadic herdsmen.

Factor analysis is a technique which is used for purposes of analysing a large number of linearly dependent variables so as to reveal the underlying structure of the data. It is basically a classification or data reduction or

transformation technique (Manly, 2004; Field, 2005). The technique reduces large numbers of variables into a smaller and more manageable set of a few uncorrelated constructs or factors. Each factor or construct becomes a cluster of related variables presenting a particular perspective or account of the variables selected for the analysis concerned. The loadings of the individual variables on the factors give the opportunity to the researcher to give weights or ranks to the constructs concerned for purposes of obtaining a picture of the importance or contributions to the variations in the data selected. The same procedure is used to cluster the geographical units (districts in this study) on the basis of their factor scores. The maps so obtained provide vital information of the regional distribution of the variables concerned.

The application of factor analysis in this study involved identifying sets of responses from Part 3 of the questionnaires. The factors and their related eigenvalues were then calculated from the raw data. The SAS JMP Version 13 for Windows by the UNISA Statistical Consulting Services was used to execute the factor analysis (Manly, 2004; Field, 2005). The information in Part 3 of the questionnaires is considerably geographical, since as noted already, the districts of Greater Kordofan region were used as the units of observation.

6.7.1 The variables for the application of the factor analytical technique and justification

Attention is now turned to the 23 variables which were used to perform the factor analysis. These variables form an integral part of the problem statement and also the conceptual framework of this study as indicated earlier. Some specific questions were therefore posed to the stakeholders as

seen in the appendix, out of which a matrix table was prepared for computing the relevant constructs. Next, the 23 variables that were used in the analysis are discussed in turn. The variables underpinning the discussions in this section of the study sought to disclose important aspects of the variations inherent in the conflicts.

Variable 1: Annual rainfall in mm

This variable was included to serve as a backdrop to the other variables by indicating the distribution pattern of rainfall in the 21 districts. It was mentioned earlier in Chapter 1 that the conditions of natural environmental factors, particularly the rainfall in the Greater Kordofan region; greatly influence the levels of water availability, the forestry, and agricultural activities in the area. This variable was thus included to determine how it links up with the crop farming and nomadic herdsmen-linked activities.

Variable 2: % of the stakeholders who see water as a lifeline

This variable is important, since the Greater Kordofan region as a whole is a water-scarce province. On this topic, the stakeholders were given the opportunity to freely express their opinions on how they see the “water issue” in their localities. Rainfed agriculture is the basis of farming and livestock activities in the greater part of the study region. On the basis of the answers given on the importance of water in the livelihoods of the stakeholders, the relevant information was obtained for the 21 districts.

Variable 3: % of the stakeholders who see aridity as a threat

This variable was also brought into the picture because it is common knowledge that aridity is a major development challenge in the study region. The arid conditions in the northern part of the region are one reason

accounting for the annual southward migrations of the nomads in the Greater Kordofan region. Its inclusion in the factor analysis exercise was important to get insight into how the stakeholders in the 21 districts weigh the problem of aridity in their communities.

Variable 4: % of the stakeholders who see famine as being persistent

The variable was included to obtain a particular insight into famine as a problem in the rural communities. There have been major famines in the Greater Kordofan region since the late 1970s, leading, inter alia, to many human deaths. How do the households see this problem? This variable was included because it currently forms part of the reality of living in rural Greater Kordofan region, affecting the livelihoods of the poor rural households. Although there are political, cultural, and other social factors underpinning the famine phenomenon, this variable was included in the factor analytical exercise to establish how it relates statistically to the other 22 variables.

Variable 5: % of the stakeholders who think drought has been increasing in intensity

The variable was included to measure how the crop farmers, the nomadic herdsman, and the other stakeholders take account of certain aspects of their local histories. It is common knowledge that rural households are quite knowledgeable and tend to take note of trends in their daily lives. Drought is a perennial problem in the study region and was included to gain insight into how the stakeholders in the 21 districts conceive of trends in its occurrence.

Variable 6: % of the stakeholders who favour crop production as a basic activity for improving the livelihoods of the rural households

The importance of this variable cannot be underestimated. It is a major contributor to the economic activities of the Greater Kordofan region. It was included to find out how both the crop farmers, the nomadic herdsman, and the other stakeholders in the 21 districts think about crop production. Being part of human activities, the perceptions towards it can differ considerably.

Variable 7: Per capita incomes of the rural household heads

This variable was included to obtain a picture of the variations in per capita incomes in the 21 districts. Various sources had to be consulted in order to obtain a figure which was deemed reliable. This variable obviously is expected to have some statistical relations with the others. It was therefore included in order to capture the economic dimension of the relations between the crop farmers and the nomadic herdsman.

Variable 8: % of the stakeholders who favour sedentary lifestyles

This variable was included to enable one to determine how the stakeholders in the districts perceive the sedentary livelihoods of the crop farmers. It was important to include this variable in this study because the sedentary lifestyle and the nomadic lifestyle, as noted earlier, constitute two opposing forces. How the communities in both North and South Kordofan areas think about the sedentary lifestyles was deemed a critical aspect of information which could not be overlooked.

Variable 9:% of the household heads who are Muslims

This variable brings into the picture religious and cultural issues indicating the percentage of the population in the 21 districts belonging to the Muslim religion, which is the predominant religion of the Republic of Sudan.

Variable 10:% of the household heads who are Arabs

Similar to variable 9, this is also an essential ethnic factor in Sudan which could not be left out in this study under any circumstances.

Variable 11:% of the household heads who favour industrialisation as a tool for rural development

Another variable on the perceptions of the communities on modernisation, this variable was included to establish how the households think outside their immediate families and look out there to reflect on issues such as modern industrial technology, the industrial economy, and ways of living. Are they aware of how this sector is impacting and could impact the economy of the Greater Kordofan region? How do the rural households in the 21 districts define modern industries? These types of questions were all implicated in this variable.

Variable 12:% of the household heads who favour urbanisation as a tool for accelerating rural development

This variable was included to obtain information similar to that of variable 11. Urbanisation is a process with global ramifications. As the rural populations continue to migrate to the urban centres in the Greater Kordofan region, one gets a different perspective of the migration process, involving not nomadic herdsman but all kinds of people moving to the

towns for jobs. This variable was included to obtain insight into how the stakeholders in this study conceive of this phenomenon.

Variable 13: % of the stakeholders who are aware of the governments' peace policies for the nomadic herdsmen and the crop farmers

The role of the government policies in place to address the conflicts between the crop farmers and the nomadic herdsmen in the districts is central in this study. This information was critical in assessing the extent to which the government has been able to disseminate its conflict prevention policies and programmes in the communities.

Variable 14: % of the stakeholders who contend that the government conflict prevention policies face major implementation challenges

This variable was included to gauge the opinions of the communities about the implementation status of the government-sponsored conflict prevention policies. The researcher added this variable to ascertain what the stakeholders in the districts think about the implementation processes, challenges, successes, and possible failures on the conflicts between the crop farmers and the nomadic herdsmen.

Variable 15: % of the household heads who are of the opinion that crop farming and nomadic activities are complementary

This is a vital issue linked to any attempts to solve the conflicts between the crop farmers and the nomadic herdsmen. It is imperative that one gets access to the meanings which the communities attach to the relations between the two dominant rural activity systems. The answers obtained from the stakeholders are an indication of the nature of the social distance

which the household heads have established between the crop farmers and the nomadic herdsmen.

Variable 16: % of the stakeholders who contend that the conflicts between the nomadic herdsmen and the crop farmers have been increasing over the years

The rationale for including this variable was to measure the extent to which the communities take monitoring seriously. The conflicts between the crop farmers and the nomadic herdsmen constitute a top item in the livelihoods of the study region, and it was deemed necessary to find out how the stakeholders perceive the growth patterns in them.

Variable 17: % of the household heads who think saboteurs are working against the efforts of the government to build peace between the nomadic herdsmen and the crop farmers

This variable was included as another measure of how the communities identify the various actors who are linked to the conflicts between the crop farmers and the nomadic herdsmen. What is their level of awareness of those saboteurs working against the peace initiatives?

Variable 18: % of the stakeholders who are aware of the conflicts between the crop farmers and the nomadic herdsmen in the Greater Kordofan region

The conflicts are so entrenched in the everyday lives of the rural communities of Greater Kordofan region in particular. This item was included in the questionnaires to gain access to information on the state of awareness, knowledge, and other expressions of the communities on the conflicts.

Variable 19: % of the stakeholders who support the need for more public education programmes for addressing the conflicts

This variable was included to gain access to information about how the communities value the role of the government education programmes on the prevention of the conflicts. Not only does this variable give an indication of the awareness of the communities regarding the value of public education programmes but it also provides insight into the confidence that they have in their government's social development programmes.

Variable 20: % of the household heads who support the concept of model peace villages for serving as education and consciousness awakening tools

The idea of peace villages was introduced by one of the foreign donors as a tool which could be used to disseminate the model of population resettlements in the districts. This entails grouping families in selected planned villages where the families could access social services and other modern amenities. This variable was included because the opinions of the households on such programmes are central to the efforts of peace building and integrated development in the Northern Kordofan region in particular.

Variable 21: % of the stakeholders who support more government interventions in the peace programmes between the nomadic herdsmen and the crop farmers

This variable was included to establish how the communities value the appropriateness, relevance, and effectiveness of the current government programmes in place to prevent the conflicts between the crop farmers and the nomadic herdsmen.

Variable 22: % of the stakeholders who are aware of the political armed groups activities in South Kordofan

This variable was intended to gain important insight into the way the armed groups activities in South Kordofan are known by the stakeholders in this study. The activities of the political armed groups constitute a crucial element of the political/cultural conflicts in the Greater Kordofan region as a whole which are having negative impacts on the budgetary allocations of the central government.

Variable 23: % of the stakeholders who support private land ownership

Private land ownership is an integral part in the current efforts to transform the livelihoods of the rural sector of the Greater Kordofan region. This variable was to find out the opinions of the stakeholders on this important issue. How knowledgeable are the households on private land ownership? What are the different positions taken on it? This variable provides answers to this vital element of rural development in Sudan in general.

Based on the answers obtained from the above 23 variables, Table 6.5 was prepared.

6.7.2 Matrix table of the raw data on the 23 variables

Table 6.5 provides detailed information on the distribution of each of the responses on 23 bits of information in the 63 villages. The table shows the variations associated with the 23 variables in the 21 districts.

There is no doubt that looking at a 21 by 23 matrix table consisting of 483 variables cannot reveal any patterns in terms of the relations between them. By applying the technique of factor analysis, however, these variations

were grouped into three factors as indicated in Tables 6.7 and 6.8, each factor representing the squared factor loadings also known as the eigenvalues. These values pointed to the total variances associated with the three factors.

The information in Table 6.5 provides detailed items of data. This comprises 483 items of data. To obtain information about the relations between the variables, the technique of correlation coefficient was applied.

Table 6.6 provides key information about the statistical relations.

6.7.3 Table of correlation coefficients

Table 6.6 shows the correlation coefficient between the 483 variables in Table 6.5. It could be noted that different positive and negative statistical relations could be discerned between the 23 variables.

Table 6.5: Matrix table of critical information of the conflicts between crop farmers and the nomadic herdsmen

	Annual rainfall in mm	% of HH who see water as a lifeline	% of HH who see aridity as a threat	% of HH who think famine is persistent	% of HH who think drought has been increasing in intensity	% of HH who favour crop production	per capita of HH	% of HH in favour of sedentary life styles	% of HH who are Muslims	% of HH who are Arabs	% of HH who favour industrialization	% of HH who favour Urbanization	% of HH who are aware of government peace policies	% of HH who contend that the policies are not being implemented	% of HH who claim that saboteurs are working against the peace policies	% of HH who claim that the two sectors are complimentary	% of HH who contend that the conflicts have been increasing	% of HH who think conflicts are caused by saboteurs	% of HH who are aware of the conflicts in South Kordofan	% of HH who more Education programmes	% of HH who support the concept of model peace villages	% of HH who support more government intervention in the peace programmes	% of HH who are aware of political rebel activities in South Kordofan
Sheikan	165	85	89	75	82	45	700	22	95	80	31	70	85	91	88	90	91	88	85	91	89	89	92
Abo Gubaihah	405	25	18	18	22	88	4400	95	40	30	85	81	91	87	85	92	95	93	94	96	90	93	90
Bara	105	92	90	65	90	33	500	25	98	95	33	80	87	95	90	80	90	85	92	91	87	93	89
AL Diling	300	23	22	22	25	89	5200	88	55	20	88	92	93	90	85	95	98	96	88	90	94	90	80
Al Rahad	217	88	84	71	92	23	800	18	96	70	30	85	95	92	86	87	90	89	84	85	91	88	93
Al Nahoud	145	90	87	74	86	29	2400	22	92	60	32	90	92	95	80	84	92	90	94	91	88	85	93
Lagawa	320	23	20	14	25	79	4000	78	70	35	75	81	87	90	84	93	89	91	88	90	94	85	92
Gabirat alshei	50	92	90	81	91	31	550	16	98	85	29	85	98	95	91	95	94	90	93	86	85	92	93
Kadugli	600	21	24	17	30	84	5300	77	50	20	72	85	78	81	87	97	92	90	85	89	79	80	91
Wad Banda	185	87	85	70	88	15	2900	22	97	65	30	80	92	85	92	86	88	93	90	93	91	87	94
Al Rashad	370	20	22	18	20	93	4600	83	40	33	80	78	85	87	89	95	90	91	86	94	93	90	92
Al khewi	210	89	80	74	84	22	2600	16	98	80	32	75	91	86	92	94	95	93	87	85	90	88	89
Abyei	750	22	25	19	25	91	5000	86	25	15	79	85	94	95	88	90	89	88	98	93	92	91	94
Soudary	75	80	82	65	93	18	400	22	99	90	31	60	88	90	85	95	92	91	93	96	94	95	96
Talodi	450	30	28	22	18	87	6900	79	35	12	63	85	91	95	92	97	90	93	88	94	87	89	90
Um -Dam	150	85	83	71	87	20	700	19	94	75	28	82	89	84	94	92	88	91	90	93	92	89	95
Um Rwabah	168	86	79	74	84	17	900	16	93	94	32	80	92	86	90	96	94	89	93	95	88	90	94
Kauda	650	25	31	22	24	85	5600	81	20	10	82	84	95	90	84	95	94	91	87	88	93	92	88
Abo Zabad	180	88	81	73	79	21	3500	25	95	60	33	82	88	85	92	89	80	93	90	94	95	91	87
Gubaish	192	92	84	80	85	22	3200	23	94	65	35	80	93	90	84	92	90	89	92	88	87	91	86
Al-Salam	295	24	29	25	23	77	4800	81	52	51	75	82	92	88	82	94	93	91	89	95	90	94	95

Table 6.6: Table of correlation coefficients

Ro																							
w	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23
V1	1.00	-0.81	-0.79	-0.80	-0.80	0.80	0.79	0.80	-0.90	-0.87	0.79	0.34	-0.10	-0.05	0.33	0.09	0.08	-0.06	0.04	-0.05	-0.20	-0.13	0.77
V2	-0.81	1.00	0.99	0.99	0.99	-0.97	-0.84	-0.99	0.93	0.89	-0.98	-0.29	0.19	0.08	-0.49	-0.26	-0.32	0.15	-0.25	-0.10	0.08	0.17	-0.76
V3	-0.79	0.99	1.00	0.99	0.99	-0.96	-0.85	-0.99	0.91	0.89	-0.98	-0.32	0.17	0.10	-0.50	-0.25	-0.36	0.13	-0.24	-0.10	0.09	0.22	-0.77
V4	-0.80	0.99	0.99	1.00	0.97	-0.96	-0.82	-0.98	0.91	0.88	-0.97	-0.28	0.23	0.06	-0.42	-0.22	-0.29	0.14	-0.25	-0.10	0.09	0.17	-0.76
V5	-0.80	0.99	0.99	0.97	1.00	-0.97	-0.89	-0.99	0.94	0.90	-0.97	-0.34	0.15	0.05	-0.48	-0.22	-0.34	0.15	-0.25	-0.09	0.06	0.23	-0.79
V6	0.80	-0.97	-0.96	-0.96	-0.97	1.00	0.82	0.97	-0.93	-0.88	0.96	0.34	-0.17	0.08	0.41	0.28	0.23	-0.15	0.17	0.02	-0.06	-0.25	0.73
V7	0.79	-0.84	-0.85	-0.82	-0.89	0.82	1.00	0.86	-0.86	-0.93	0.83	0.44	-0.07	-0.09	0.41	0.07	0.48	-0.15	0.15	0.03	-0.17	-0.39	0.79
V8	0.80	-0.99	-0.99	-0.98	-0.99	0.97	0.86	1.00	-0.94	-0.90	0.99	0.34	-0.14	-0.02	0.41	0.25	0.33	-0.08	0.26	0.11	-0.01	-0.25	0.75
V9	-0.90	0.93	0.91	0.91	0.94	-0.93	-0.86	-0.94	1.00	0.91	-0.92	-0.35	0.02	-0.04	-0.43	-0.23	-0.23	0.04	-0.22	-0.06	-0.03	0.17	-0.75
V10	-0.87	0.89	0.89	0.88	0.90	-0.88	-0.93	-0.90	0.91	1.00	-0.88	-0.50	0.06	0.01	-0.37	-0.09	-0.41	0.15	-0.08	-0.08	0.23	0.34	-0.78
V11	0.79	-0.98	-0.98	-0.97	-0.97	0.96	0.83	0.99	-0.92	-0.88	1.00	0.35	-0.10	-0.05	0.43	0.32	0.33	-0.10	0.20	0.15	0.00	-0.30	0.74
V12	0.34	-0.29	-0.32	-0.28	-0.34	0.34	0.44	0.34	-0.35	-0.50	0.35	1.00	0.32	0.16	-0.09	0.09	0.18	0.02	-0.27	-0.19	-0.34	-0.38	0.44
V13	-0.10	0.19	0.17	0.23	0.15	-0.17	-0.07	-0.14	0.02	0.06	-0.10	0.32	1.00	0.49	-0.06	0.25	0.12	0.38	-0.25	0.25	0.45	-0.06	-0.08
V14	-0.05	0.08	0.10	0.06	0.05	0.08	-0.09	-0.02	-0.04	0.01	-0.05	0.16	0.49	1.00	-0.33	0.13	-0.37	0.34	-0.18	0.00	0.31	-0.02	-0.18
V15	0.33	-0.49	-0.50	-0.42	-0.48	0.41	0.41	0.41	-0.43	-0.37	0.43	-0.09	-0.06	-0.33	1.00	0.38	0.45	-0.23	0.06	-0.07	0.00	-0.06	0.28
V16	0.09	-0.26	-0.25	-0.22	-0.22	0.28	0.07	0.25	-0.23	-0.09	0.32	0.09	0.25	0.13	0.38	1.00	0.16	-0.02	-0.22	-0.23	0.09	-0.18	0.20
V17	0.08	-0.32	-0.36	-0.29	-0.34	0.23	0.48	0.33	-0.23	-0.41	0.33	0.18	0.12	-0.37	0.45	0.16	1.00	-0.20	0.13	0.37	-0.06	-0.39	0.32
V18	-0.06	0.15	0.13	0.14	0.15	-0.15	-0.15	-0.08	0.04	0.15	-0.10	0.02	0.38	0.34	-0.23	-0.02	-0.20	1.00	0.39	0.04	0.41	0.21	-0.33
V19	0.04	-0.25	-0.24	-0.25	-0.25	0.17	0.15	0.26	-0.22	-0.08	0.20	-0.27	-0.25	-0.18	0.06	-0.22	0.13	0.39	1.00	0.27	0.34	0.31	-0.02
V20	-0.05	-0.10	-0.10	-0.10	-0.09	0.02	0.03	0.11	-0.06	-0.08	0.15	-0.19	0.25	0.00	-0.07	-0.23	0.37	0.04	0.27	1.00	0.42	-0.08	0.04
V21	-0.20	0.08	0.09	0.09	0.06	-0.06	-0.17	-0.01	-0.03	0.23	0.00	-0.34	0.45	0.31	0.00	0.09	-0.06	0.41	0.34	0.42	1.00	-0.01	-0.34
V22	-0.13	0.17	0.22	0.17	0.23	-0.25	-0.39	-0.25	0.17	0.34	-0.30	-0.38	-0.06	-0.02	-0.06	-0.18	-0.39	0.21	0.31	-0.08	-0.01	1.00	-0.21
V23	0.77	-0.76	-0.77	-0.76	-0.79	0.73	0.79	0.75	-0.75	-0.78	0.74	0.44	-0.08	-0.18	0.28	0.20	0.32	-0.33	-0.02	0.04	-0.34	-0.21	1.00

One outstanding finding related to Table 6.6 concerns the rather high negative and positive correlation coefficient associated with the first 11 variables. These variables covered environmental conditions such as rainfall, water, aridity, famine, and drought; they also covered per capita incomes, industrialisation, urbanisation, religion, and ethnicity.

The stakeholders in the districts with relatively high rainfall, for example, indicated that they did not see water, aridity, famine, or drought as a major problem in their livelihoods as reflected in the negative correlation coefficients. The table illustrates further that such districts are largely non-Arab and non-Muslim, communities that see crop production as the preferred basic activity for sustaining their households.

The information on the aforementioned 11 variables shows that the districts with low rainfall have relatively low per capita incomes and that the stakeholders interviewed do not favour urbanisation or industrialisation, but they would rather prefer to continue with their nomadic activities. Such districts were large and associated with the Muslim and Arab populations. The high negative and positive correlation coefficients associated with these 11 variables thus indicate the areas where the dualistic phenomenon between the crop-producing households and the nomadic herdsmen in the study find clear expression in the study region.

It needs to be mentioned that variable 23 – which is about the stakeholders who support private land ownership – is also very much linked to the 11 variables under discussion. While the crop production communities support the idea of private land ownership, the opposite was found to be the case with the nomadic herdsmen.

From variable 13 to 22, one finds a general pattern of rather low correlation of positive and negative correlation coefficients. These variables cover various issues concerning the community awareness and support of the government's peace initiatives, stakeholders' various opinions on the conflicts, their positions regarding the complementary nature of the relations between crop farming and nomadic activities, and their recommendations for dealing with the conflicts between the crop farming and nomadic activities. The overall pattern in the values displayed is one of low statistical coefficients. Thus, it could be inferred that the low values suggest that there does not seem to be much variation or difference in the opinions of the stakeholders in terms of the 10 variables concerned.

While the correlation coefficients in Table 6.6 do provide some useful summaries of the statistical relations between the 23 variables, it is also clear that there is some problem of information overload in the table. More data reduction techniques are still required to present a simpler pattern of information. Moreover, the pattern should be able to show some geographical patterns, since the information in Tables 6.5 and 6.6 are based on geographical units of observation. It is to the nature of the findings of such a technique that attention is now turned.

6.7.4 The factor loadings

Factor analysis, as mentioned earlier, is basically a data reduction technique. Table 6.7 shows the results of the transformation of the information on the correlation coefficients into factor loadings. Three factors that were extracted from the information in Table 6.7 now emerge.

Table 6.7: Matrix table of factor loadings

	Factor 1	Factor 2	Factor 3
5% of stakeholders who think drought has been increasing in intensity	0.99	0.01	0.05
3% of stakeholders who see aridity as a threat	0.99	0.04	0.03
2% of stakeholders who see water as a lifeline	0.99	0.03	0.01
4% of stakeholders who think famine is persistent	0.97	0.04	-0.0
9% of Households (HH) who are Muslims	0.95	-0.1	0.09
10% of Households (HH) who are Arabs	0.92	0.05	0.25
21% of stakeholders who support more government intervention in the peace programmes	0.04	0.77	0.35
13% of stakeholders who are aware of government peace policies	0.15	0.73	-0.4
18% of stakeholders who are aware of the conflicts in South Kordofan	0.11	0.71	0.17
14% of stakeholders who contend that the policies are not being implemented	0.10	0.68	-0.4
20% of HH who support the concept of model peace villages	-0.1	0.37	0.36
16% of stakeholders who contend that the conflicts have been increasing	-0.2	0.15	-0.4
11% of HH who favour industrialisation	-1.0	0.06	-0.1
8% of HH in favour of sedentary lifestyles	-1.0	0.05	-0.0
12% of HH who favour urbanisation	-0.3	0.05	-0.7
6% of HH who favour crop production	-1.0	0.02	-0.1
1 annual rainfall in mm	-0.8	-0.1	-0.2
7 per capita of HH in US dollars	-0.9	-0.1	-0.2
23% of stakeholders who support private land ownership	-0.8	-0.2	-0.3
19% of stakeholders who support more education programmes	-0.3	0.23	0.78

	Factor 1	Factor 2	Factor 3
22% of stakeholders who are aware of political rebel activities in South Kordofan	0.23	0.02	0.49
15% of HH who claim that the two sectors are complementary	-0.5	-0.2	0.11
17% of HH who think conflicts are caused by saboteurs	-0.4	-0.1	0.00

The information in Table 6.7 provides a simplified version of the information in Table 6.5 with its 483 variables. Now, there are fewer items of information to contend with, three factors instead of 483. The information in Table 6.7 is also a more simplified version of Table 6.6 with its table of correlation coefficients.

It is essential in the factor analytical procedure that labels or names are given to the three constructs in Table 6.7 on the basis of the factor loadings. On Factor 1, it emerges from Table 6.7 that the variables which were loaded on it with values greater than 0.5 were those stakeholders who think drought has been increasing, that aridity is a threat to the livelihoods of the households that water is a lifeline for the communities, and that famine is persistent. Further down in the table, one realises further that the Muslim and Arab population associate with this factor. Those linked to this factor also load negatively with industrialisation, sedentary lifestyles, urbanisation, and crop production activities. The table finally indicates that those linked with this factor are poor in terms of per capita incomes, do not support private land ownership, and live in areas of relatively low rainfall. These characteristics clearly depict one key theme in this study, the voice of the nomadic herdsman in relation to that of the crop farming communities. The stakeholders who sit on the opposite side of these characteristics are the sedentary crop farmers.

On Factor 2, Table 6.7 highlights that the variables which stand out with values greater than 0.5 are those variables linked with the government policies on conflict prevention. These are variables associated with the stakeholders who support more government intervention in the peace programmes; those who are aware of the government's peace policies; those who are of the opinion that the government policies are not being implemented; and those who are aware that the conflicts between the crop farmers and the nomadic herdsman are still ongoing. On the basis of these features associated with Factor 2, it has been labelled the government peace policy initiatives factor.

On Factor 3, Table 6.7 brings out that the variables involved here are about the role of the government's education programmes on the conflicts, that is, variable 19. The high loading of 0.78 spells this variable out as the key element.

A still more authentic picture of the features linked to the three factors can be glimpsed from Table 6.8, which shows the percentage variances associated with them. This table reveals the dominant position of the first factor which accounts for almost 50% of the total variance. The second factor explains 10.68% of the total variance, with the third accounting for 10.25%. Together, they account for some 70% of the overall variance.

Table 6.8: Factor analysis – the eigenvalues

Factor	Variance/ Eigenvalue	Per cent	Cumulative Per cent
Factor 1	11.29	49.08	49.08
Factor 2	2.45	10.68	59.77
Factor 3	2.35	10.25	70.02

A graphical presentation of the distribution of the eigenvalues is depicted in Figure 6.7. The figure indicates how after the third factor, the variances apparently slip into insignificance.

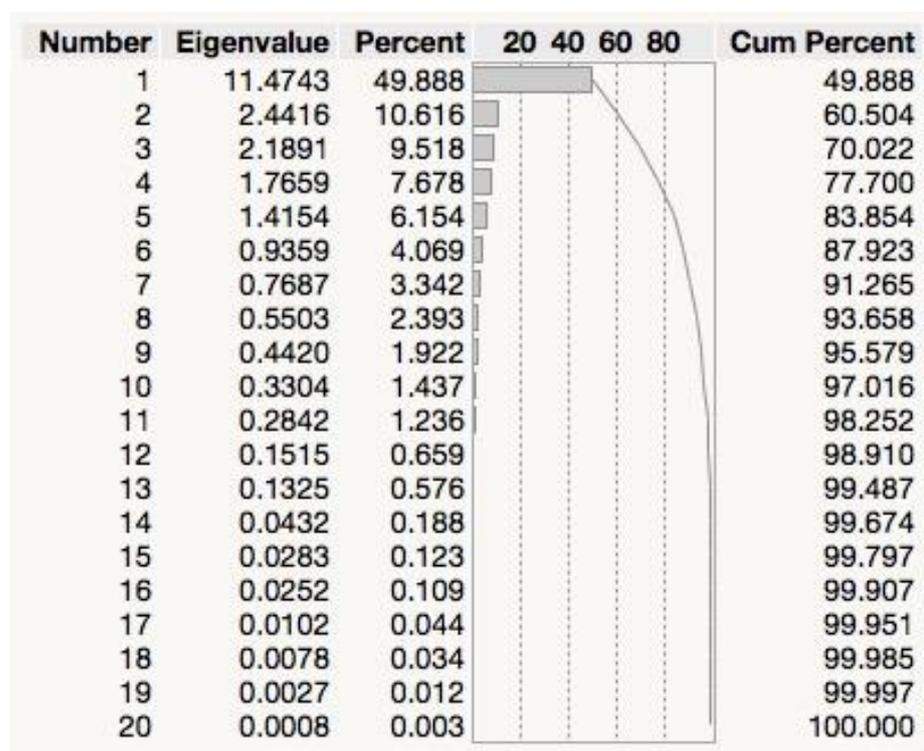


Figure 6.7: Graph of the eigenvalues

6.7.5 The factor scores

The next step in the disclosure of the factor analytical findings concerned the distribution of the factor loadings on the units of observation – that is, in the 21 districts of the study region. This type of information shows the spatial distribution of the factors. Table 6.9 highlights how the districts scored on the three factors.

Table 6.9: Table of the factor scores

Districts	Factor1	Factor2	Factor3
Sheikan	0.820286	-0.78809	0.539796
Abo Gubaihah	-1.25027	0.866338	0.63979
Bara	1.108718	0.751714	-0.21673
Al Diling	-1.13347	0.420598	-1.43872
Al-Rahad	1.029362	-0.23553	-1.25812
Al Nahoud	0.870593	0.447658	-1.10058
Lagawa	-0.85305	-0.64394	0.154942
Gabirat Alsheikh	1.196228	1.100659	-1.20851
Kadugli	-0.96121	-3.14415	-0.4791
Wad Banda	0.686208	-0.48628	0.40664
Al-Rashad	-1.16577	-0.50939	1.094184
Al Khewi	0.738781	-0.96549	-0.71095
Abyei	-1.253	1.735518	-0.05967
Soudary	0.729077	0.79116	2.546563
Talodi	-1.1766	0.128461	-0.41035
Um-dam	0.720901	-0.55825	0.856589
Um-Rwabah	0.746918	0.099981	0.654101
Kauda	-1.23678	0.533743	-0.93261
Abu Zabad	0.524099	-0.3097	0.994415
Gubaish	0.8229	0.239058	-0.78633
Al-Salam	-0.96391	0.525932	0.714647

The spatial distribution of the three factors is shown in the following three maps beginning with Figure 6.8. Two classifications appear on the three maps. The districts scoring positively in each factor are shaded in green. Those that scored negatively thus appear in yellow. These two classification systems were used in order to bring out those districts which scored positively and negatively on each of the factors. This was for purposes of identifying the “opposing groups” under each of the three factors.

Figure 6.8 shows the Factor Score1 distributions in the districts.

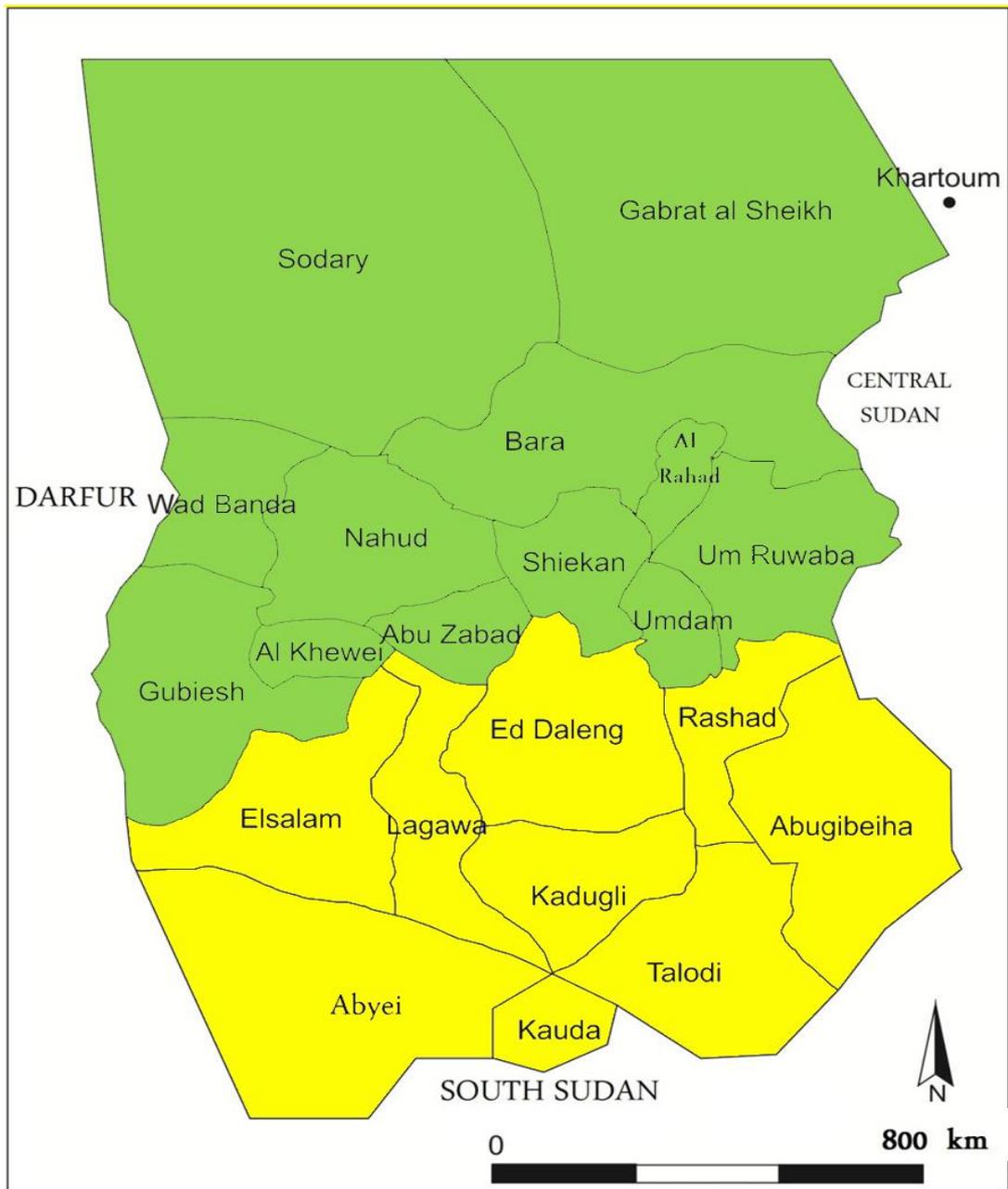


Fig Map of Greater Kordofan region Showing the 21 districts

Figure 6.8: Map showing the distribution of Factor Score 1 in the districts

An examination of the distribution of the factor scores by district on Factor 1 demonstrates that the following districts: Bara (1.1), Al-Rahad (1.02), Gabrait Alsheikh (1.19), Sheikan (0.8), Al Nahoud (0.87), Wad Banda (0.68), Al Khewi (0.73), Soudary (0.72), Um-Dam (0.72), Um-Rwabah (0.74), Abu Zabad (0.52), and Gubaish (0.82) scored positively on Factor 1. It is interesting to observe that these districts are also located in the northern parts of the Greater Kordofan region.

Scoring negatively on Factor 1 were various districts. These include Abu Gubaihah (-1.25), Al Diling (-1.1), Lagawa (-0.8), Kadugli (-0.96), Al-Rashad (-1.16), Abyei (-1.2), Talodi (-1.17), Kauda (-1.2), and Al-Salam (-0.96) which are all located in the southern parts of the study region.

Table 6.10 provides some key statistics on these districts shown in yellow colour.

Table 6.10: Key statistics on the districts scoring positively on Factor 1

District	Factor score	Per capita income in US\$	Annual rainfall in mm
Sheikan	0.8	\$800	165
Bara	1.1	\$750	105
Al-Rahad	1.02	\$650	217
Al Nahoud	0.8	\$700	145
Wad Banda	0.68	\$600	185
Al Khwei	0.73	\$750	210
Soudari	0.72	\$600	75
Um Dam	0.72	\$650	150
Um-Rwabah	0.74	\$850	160
Abu Gubaish	0.82	\$700	192

According to Table 6.10, the districts that scored very high on Factor 1 also generally experience low rainfall and low per capita incomes. On the other hand, the districts which scored negatively on this factor (Abu-

Gubaihah, Al-Diling, Lagawa, Kadugli, Al-Rashad, Abyei, Talodi, Kauda, and Al-Salam), experience relatively high rainfall and have higher per capita incomes.

It was mentioned earlier that Factor 1 brings out one central element of the dichotomy between the crop farmers and the nomadic herdsman. The variables that were identified with Factor 1 in the discussions above brought out issues which disclosed some indicators of development and some related statements from the stakeholders on the conflicts.

Attention is now turned to the districts which scored positively on Factor 2. As already mentioned, Factor 2 was basically about the perceptions of the stakeholders on the government plans for peacebuilding.

Table 6.11: Key statistics on districts scoring positively on Factor 2

District	Factor score	Per capita income in US\$	Rainfall in mm
Abu-Gubaihah	0.86	950	300
Bara	0.75	700	100
Gabirat AlSheikh	1.10	550	60
Abyei	1.73	600	350
Soudary	0.79	575	75
Al-Salam	0.53	450	280
Al-Diling	0.42	650	320
Al -Nahoud	0.44	750	250
Talodi	0.12	650	350
Um-Rwabah	0.09	800	260
Kauda	0.53	400	375
Gubaish	0.23	650	290
Al-Salam	0.52	600	525

Table 6.11 brings out that the districts, which scored highly on Factor 2, were made up of Abu Gubaihah, Bara, Gabrat al Sheikh, Abyei, Soudary, Al Diling, Al-Nahoud, Talodi, Um-Rwabah, Kauda, Gubaish, and Al Salam. These are districts which seem to have shared a common stance on the plans of the Sudanese government for addressing the conflicts under study.

Figure 6.9 indicates the geographical distribution of Factor Score 2. The outstanding feature of this map concerns the unique spatial distribution

pattern, whereby Ed-Daleng district is literally an island surrounded by districts which scored negatively on Factor 2.

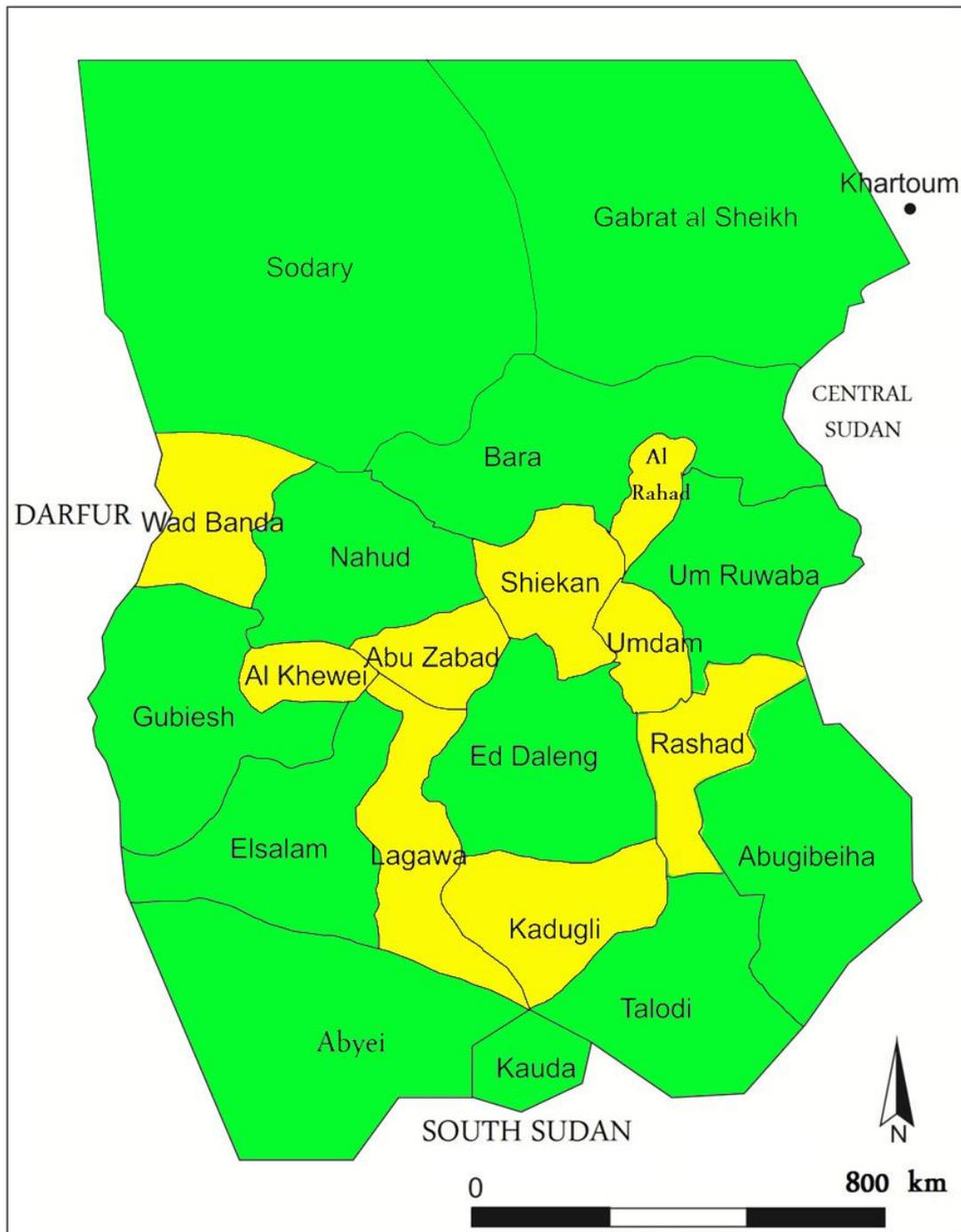


Fig Map of Greater Kordofan region Showing the 21 districts

Figure 6.9: Map of Factor Score 2

The distribution of the districts that scored positively on Factor 3 appears in Table 6.12.

Table 6.12: Key statistics on districts scoring positively on Factor 3

District	Factor score	Per capita income in US\$	Rainfall in mm
Sheikan	0.53	800	165
Abu-Gubaihah	0.63	950	300
Al-Rashad	1.09	650	217
Soudari	2.54	575	75
Um-Dam	0.85	650	150
Um-Rwabah	0.65	800	260
Abu-Zabad	0.99	700	280
Al-Salam	0.71	450	290
Lagawa	0.15	750	300
Wad-Banda	0.40	600	200

The map of factor scores appears in Figure 6.10. The variables associated with Factor 3 were concerned with issues regarding what measures the Sudanese government could put in place to better address the conflicts.

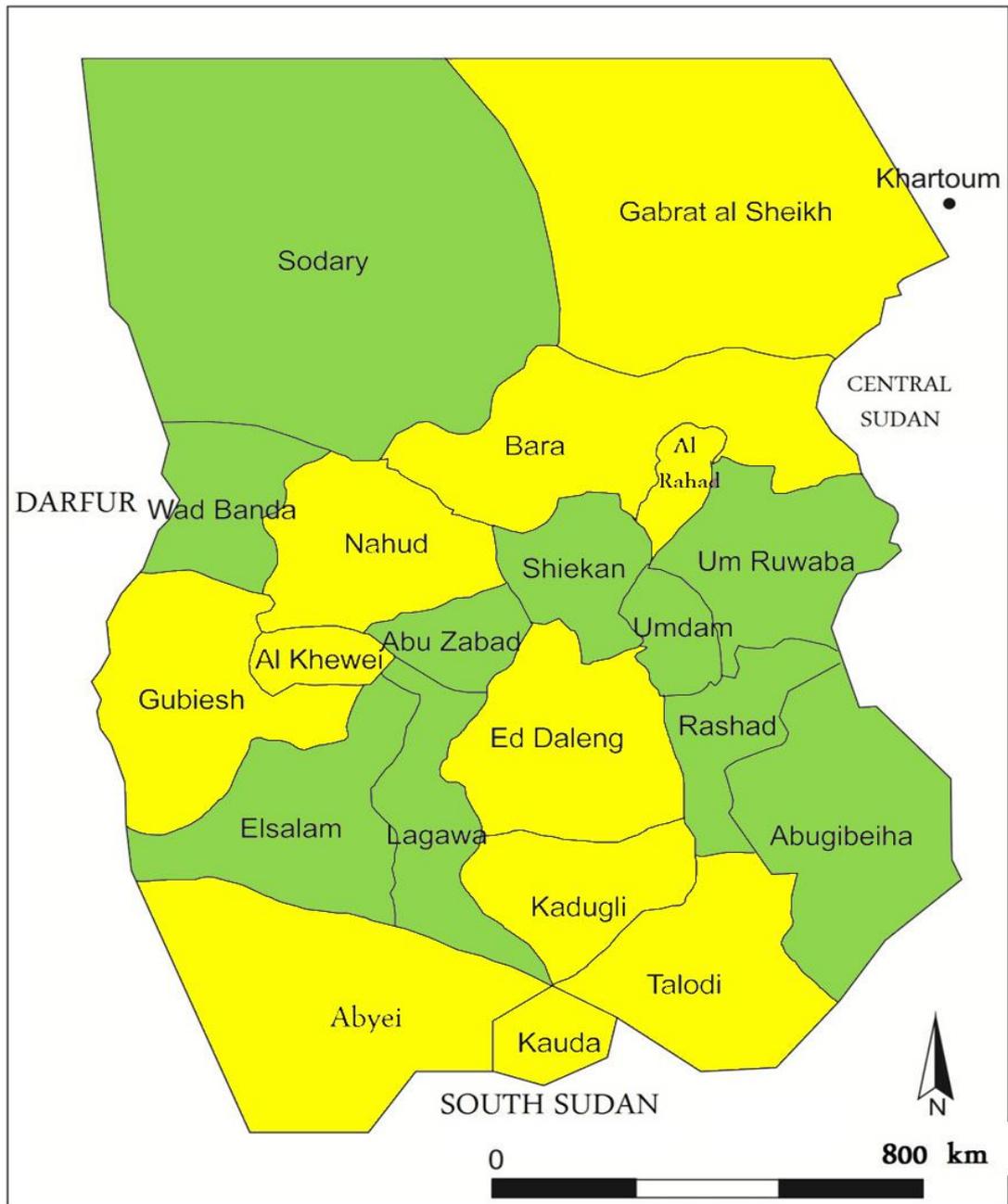


Fig Map of Greater Kordofan region Showing the 21 districts

Figure 6.10: Map of Factor 3 factor scores

The horseshoe pattern in the aforementioned distribution with regard to the districts which shared a common stance on Factor 3 was also found to be rather interesting. The Soudary and Wad-Banda districts emerged in the north-west part of North Kordofan with positive scores.

The way the districts scored differently with respect to the 3-factor scores served to highlight that one could not generalise on the way stakeholders in the 21 districts perceive the conflicts. The distribution patterns illustrate that the districts matter because they serve to indicate how the district government officials working with the nomadic herdsman and the crop farmers in the districts go about their duties differently to influence the perceptions of the communities, their concrete activities, and their contributions to the efforts of the government to build peace between the crop farmers and the nomadic herdsman.

The foregoing three maps are therefore helpful. They help enrich the findings of this study by illustrating how the 21 districts act as mediating systems between the general provincial imperatives in the plans on peace and their concrete outcomes in the communities.

6.8 The persistence of the conflicts: towards an understanding of the causes

This section enriches the information on the conflicts by showing how a data reduction method was used by the researcher to identify what stakeholders in the districts thought account for the persistence of the conflicts between the crop farmers and the nomadic herdsman. For example, it can be noted that sections of Part 2 of the questionnaires contain specific questions that required the research participants to provide information as to what they thought accounted for the persistence of the conflicts between the nomadic herdsman and the crop farmers. It is the various answers that were generated from the questions that are now being reported here.

It worth mentioning that this section also relates to the discussions under Section 6.5 on the project implementation challenges where the gaps between the plans and the outcomes were discussed. As was mentioned, those discussions were within the framework of the 1M phase of the MELD model. The discussions were largely descriptive accounts of the nature of the non-identities or distances between the set objectives on the peacebuilding projects and the actual achievements.

Attention now shifts to a discussion on the explanations behind the gaps. The discussions in this section are thus within the framework of the 2E phase of the MELD model. The questions that were posed by the researcher and the answers that emerged helped to reveal to the stakeholders information that was previously hidden from them. The information concerned was about the reasons for the persistence of the conflicts between the crop farmers and the nomadic herdsman.

The discussions here reveal the personal statements and accounts of the stakeholders. Their answers were systematically analysed to produce some 17 reasons or factors. The stakeholders gave different accounts and weights to what they perceived were the reasons for the persistence of the conflicts. The task of the researcher involved transcribing the interview responses into themes to facilitate understanding. The themes discussed next thus represent the classifications of the various answers.

The answers from the stakeholders initially produced volumes of information. Through constant comparison of the answers, patterns kept emerging, which ultimately led to the emergence of the information the researcher was looking for. The data analysis procedure was time-consuming, as the researcher grouped the codes into broader and more

conceptual concepts out of which finally emerged what could be considered the 17 explanatory factors indicating the reasons given by the stakeholders for the persistence of the conflicts between the crop farmers and the nomadic herdsmen. This approach to information generation is one hallmark of the grounded theory research method which is central in critical realist research (Oliver, 2012).

The basic principle which was drawn upon here is thus similar to that of the factor analytical discussions above, except that this time, the data analysis is based on the qualitative clustering of meanings, values, concerns, and aspirations of the stakeholders. As mentioned earlier, various authors (Davidson, 2002; Charmaz, 2006; Charles, 2008) have discussed the merits of the qualitative approach to the analysis of data from the statements of people. It has also been demonstrated how the meanings, expressions, concerns, criticisms, and recommendations of research participants could be classified and used as vital resources or theories for taking practical steps to produce positive change in living conditions (Reason and Bradbury, 2008; Redman-Maclaren, Mills and Tommbe, 2014). The author points out how the wealth of information generated from the villages was organised to derive what can be described as the *constraints* or *absences* in the way of implementing the objectives underpinning the plans of the government in building peace or getting rid of the conflicts under study. The answers obtained from the field also led to the discovery of an important aspect of the persistence of the conflicts – the general lack of funds for implementing the plans on peacebuilding. The government officials, the crop farmers, the traditional chiefs, and most of the remaining stakeholders as the number one constraint in the implementation of the plans for addressing the conflicts between the

nomadic herdsman and the crop farmers mentioned the lack of funding for implementing the projects.

The accounts given by the stakeholder's link to the idea of emancipation in the critical realist agenda – that is, how to use the very reasons given by people on a topic to help to empower themselves to stand up to the challenges concerned. Applying this theory in the recommendations of this study in the next chapter brought into the limelight the concept of power relations –how to empower people to address their problems given the levels of information at their disposal. This is an important aspect of transformational grounded theory (Mertens, 2009).

The information that emanated from the stakeholders indicated that when given the opportunity, they can disclose very vital information. The discussions that follow provide an outline of how the answers from the stakeholders generated some 17 answers. They therefore relate to Phase 2E of the MELD model.

Table 6.13 is an outline of the procedure which was used to derive some 17 factors which emerged as well as the overarching theme—the third column. The table indicates that the 17 factors (the axial codes) were initially based on a large number of preliminary responses (some 61 ideas or open codes), emanating directly from the stakeholders, which covered a number of topics on the conflicts. The table highlights that the 17 factors were extracted from a number of initial responses (some 61 of them) which the researcher systematically grouped into clusters. The first column (The Open Codes section) indicates the initial items which were later grouped into the 17 explanatory factors (The Axial Codes).

Table 6.13: Application of the three phases of coding in the grounded theory scheme

Open code	Axial code	Selective code
A number of issues on the conflicts mentioned by the stakeholders	The organisation or grouping of the issues in the Open codes into explanatory factors, absences/constraints under the Axial codes	The overarching theme emerging from a further grouping of the 17 Axial codes leads to the identification of one overarching theme – the persistence of the conflicts
1	1	
2		
3		
4		
5	2	
6		
7		
8		
9		
10		
11	3	
12		
13	4	
14		
15		
16		
17		
18	5	
19		
20		
21	6	

Open code	Axial code	Selective code
A number of issues on the conflicts mentioned by the stakeholders	The organisation or grouping of the issues in the Open codes into explanatory factors, absences/constraints under the Axial codes	The overarching theme emerging from a further grouping of the 17 Axial codes leads to the identification of one overarching theme – the persistence of the conflicts
22		
23	7	
24		
25		
26		
27	8	
28		
29		
30	9	
31		
32		
33		
34		
35		
36	10	
37		
38	11	
39		
40		
41		
42		
43	12	
44		

Open code	Axial code	Selective code
A number of issues on the conflicts mentioned by the stakeholders	The organisation or grouping of the issues in the Open codes into explanatory factors, absences/constraints under the Axial codes	The overarching theme emerging from a further grouping of the 17 Axial codes leads to the identification of one overarching theme – the persistence of the conflicts
45		
46	13	
47		
48	14	
49		
50		
51		
52	15	
53		
54		
55		
56	16	
57		
58		
59	17	
60		
61		

Source: Adapted from Charmaz (2006)

The 61 initial answers were systematically classified or coded into the 17 clusters or explanatory factors. By constantly comparing similarities and differences within and between the initial raw responses, the 17 clusters that represent the explanatory matrix or model for writing up this section of the findings of the study finally emerged.

The prolonged engagement with the stakeholders and careful observations made it possible for the researcher to gain a deep understanding of the reasons for the persistence of the conflicts. Sharing ideas with the stakeholders on the conflicts; constant consultations with the people interviewed earlier; the validation of information from time to time through visits, phone calls, emails, and other sources; combining the findings constantly with literature reviews; and combining data analysis with data collection to cross-check the validity of the information at hand all helped to strengthen the validity of the 17 explanatory factors (Strauss and Corbin, 1998).

The table indicates that the explanatory factors largely reflected the concerns of the crop farmers and the nomadic herdsmen as well as the other seven stakeholders about why they thought the conflicts persist between the crop farmers and the nomadic herdsmen.

The 17 constraints that were extracted from the responses of the stakeholders are now discussed. They indicate the reasons given by the stakeholders for what they thought account for the persistence of the conflicts. The issues that the stakeholders raised on the 17 problems now follow.

6.8.1 The influences of the natural environmental system of the study region

The accounts of the stakeholders indicate that the fragile nature of the natural environmental systems of the Greater Kordofan region continues to influence the conflicts between the crop farmers and the nomadic herdsmen. Based on concerns of the stakeholders, it needs to be brought to the attention of the public that the unreliable rains; drought; the poor soils; the dwindling volumes of water in the streams, ponds, and wells of rural Greater Kordofan region; and also the problems of deforestation are all contributory factors in the increasing volumes of north-south migration of the nomadic herdsmen. The accounts of the communities brought into sharp focus how the “harsh” environmental conditions in North Kordofan constitute important “push factors” for the annual nomadic movements to the greener pastures of South Kordofan in particular. Field research and the interviews with the environmental scientists and rural households in the 21 districts highlighted that the deteriorating environmental conditions in North Kordofan, in particular, present major obstacles in any efforts at reducing the volumes of pastoralists moving around every year for grazing their livestock.

The interviews with the rural communities and the extension officers brought to the attention of the researcher the increasing migrations of the nomadic herdsmen to the crop farms. These migrations worsened the conflicts between the crop farmers and the nomadic herdsmen in the rural areas.

6.8.2 The cultural factor

The stakeholders brought out that the cultural challenge factor underpinning the persistence of the conflicts resides on a number of issues. The extension officers, in particular, argued that the majority of the nomad community are yet to be convinced of the advantages of settling down in permanent settlements where mixed farming could sustain them. In addition, it was explained that the majority of them are Arabs who practise the Islamic religion. The study findings showed that religion, cultural beliefs, and ethnicity are intermingled, making it difficult to implement the plans for the gradual transition from nomadism to settled agriculture. It emerged that the nomadic herdsmen are yet to be shown the advantages of monetising their livestock activities, the advantages of developing ranches for their livestock, and the advantages of private ownership of land before other changes such as irrigation and other infrastructure projects can be introduced in the villages of North Kordofan.

There is no doubt that settling the nomads and providing them with water and other necessities can go a long way in stopping them from their annual southward migration. The accounts of the crop farmers, the extension officers, some village chiefs, and households, however, revealed that the changes require much patience and continuous interaction with the nomadic herdsmen.

6.8.3 Problems emanating from the economic activities of the big businesses

The stakeholders in terms of the activities of modern mechanised farming, the oil-mining firms, and other large commercial companies that have

increased in number and scale in the rural communities of South Kordofan in particular described this problem. The complaints were that these activities are systematically transforming the peasant farmers and rural households in the area into migrant wage labourers on the commercial farms and the mines, thereby gradually uprooting them from the rural areas.

Not only have the companies been accused of disrupting the quiet rural agricultural livelihoods, but problems of land dispossession were also mentioned as increasing in the districts of South Kordofan with attendant social and political implications. These developments were reported to be interfering with the traditional land tenure systems. Also, there was the complaint that the companies concerned are preventing the steady growth of the small-scale businesses which cannot compete with the products from the mechanised farms. In addition, the local communities mentioned the problems of environmental pollution from the oil companies. The negative impacts of these changes on the rural crop production sector were highlighted particularly in terms of the problem of land dispossession.

These problems were reported to be increasingly turning the attention of the government officials from addressing the conflicts between the crop farmers and nomads. Regrettably, attention was now shifting to monitoring the activities of the big capitalist firms which are systematically penetrating the economy of Southern Kordofan.

6.8.4 The psychological aspects of the conflicts between the crop farmers and the nomadic herdsmen

The accounts given by the stakeholders on this factor were about the negative psychological impacts of the conflicts in the local communities in South Kordofan in particular. This account revealed that the conflicts have literally become an integral part of the relations between the crop farmers and the nomadic herdsmen. One astounding element of this related to the way the crop farmers and their families described their reaction whenever the nomads pitch their tents on the outskirts of their settlements on their migrations. Their narrative is that the tents of the nomads are increasingly being associated with human deaths, the destruction of crops and other properties, and at times, in terms of physical attacks. The psychological effects of such confrontations on those who witness such annual events thus leave much to be desired. Most of the households in the crop farming areas reported that the nomadic camps tend to instil hatred, fear, and animosity towards any mention of government plans for peace building between the sedentary crop farmers and the nomads.

A worrying factor came into the picture with respect to the children of rural South Kordofan in particular. The household heads presented a negative narrative of the long-term impacts of the presence of the nomadic camps on the psychology of their youth.

6.8.5 The lack of funding for implementing the projects in the plans

The accounts of the stakeholders indicate that the Sudanese government is financially unable to fund most of the projects identified for peacebuilding between the crop farmers and the nomadic herdsmen. Among such

projects, as mentioned earlier, are those earmarked for employing more field staff, for purchasing adequate equipment and other forms of technology, funding irrigation projects, promoting extension services, developing the planned settlement schemes, and for responding to crises situations such as famine, drought, crop damage by pests, and for policing the conflict hotspots, among others.

The information on the annual government budgets on the peace efforts between the crop farmers and the nomadic herdsmen gave the general impression that the budgetary allocations have in fact been dwindling steadily over the past 10 years. This is due, *inter alia*, to the conflicts and security issues emanating from the Darfur and Nuba Mountains regions.

Although non-governmental organisations (NGOs) have been making their budgetary contributions to the conflict prevention programmes, their activities were found to be rather piece-meal, scattered, and ad hoc in nature. In addition, it emerged that the central government was rather sceptical about the political intentions of the non-governmental organisations (NGOs) interested in coming to support the programmes on the crop farmers and nomadic herdsmen. Efforts by the local communities to mobilise local funds for implementing some of the plans were also found to be piece-meal and therefore incapable of making any significant impacts.

Most of the successes and failures associated with the various peacebuilding plans are thus very much related to the lack of funds. This highlights the dominant position occupied by lack of funding in the understanding of the persistence of the conflicts.

6.8.6 Lack of incentives for the government officials to work on the peace initiatives

This problem included what the officials described as their poor working conditions covering remuneration, housing, official transport vehicles, promotion, and other services. Under such conditions, the general concern was respecting the lack of incentives for the government officials to put in their best in the implementation of the plans for peace building. Because of this situation, one primary complaint was that it is rare for the average aspiring public servant to take a post which involves extension activities and other assignments involving the crop farmers and the nomadic herdsmen. It also explains the high turnover in the staffing situation of the public servants linked to the crop farmers and the nomadic herdsmen.

6.8.7 Lack of police officers and other security personnel for preventing the conflicts between the crop farmers and the nomadic herdsmen

This was a problem which was reported earlier under the non-implementation problems on the conflicts. One general complaint related to the inadequate police stations in the rural areas of Greater Kordofan region for preventing criminal activities in general. Police officials were included in this study as a vital source of information. The general impression which they created related to problems of low morale and inadequate personnel for monitoring the conflicts. The officials made it clear that the central government already has a number of security problems to contend with from the rebel activities in Darfur in the west, the Nuba Mountains region of South Kordofan, and other districts. They pointed out that the Sudan armed forces and the Sudan People's Liberation

Army-North (SPLA-N) are involved in armed conflicts in South Kordofan and neighbouring Blue Nile region lying adjacent to South Sudan. Both regions are involved in rebel activities against the government of Sudan. The accounts of the officers showed that there are currently more than 350,000 internally displaced people in South Kordofan from the conflicts between the Federal Government of Sudan and the SPLA-N. The officers explained that these conflicts do overstretch the resources of the Sudan police and security departments.

In view of the foregoing realities, the police officers interviewed by the researcher explained why they cannot do much to prevent the conflicts between the crop farmers and the nomadic herdsmen. They maintained that the corridors set aside for the nomads to travel with their livestock, for example, have no facilities such as police posts for surveillance activities. In addition, they complained about the lack of basic resources for the police to keep proper records on the conflicts between the crop farmers and the nomadic herdsmen. For political reasons, most of the police officers were not prepared to provide statistics on the conflicts between the crop farmers and the nomadic herdsmen to the researcher.

6.8.8 Inaccessibility of the villages

All the stakeholders found a good reason to link the persistence of the conflicts between the crop farmers and the nomadic herdsmen very much to the problem of lack of good roads for linking the villages in the Greater Kordofan region. This problem was discussed earlier indicating the need which the government of Sudan has recognised for building good roads in the rural areas of Sudan.

Most of the hundreds of villages in the Greater Kordofan region are connected by untarred roads which traverse mountainous terrain, making their accessibility rather difficult. With the majority of the households not having bicycles and other modes of transport, the stakeholders explained that monitoring progress in rural development projects by the government officials and also criminal activities are quite difficult in the rural areas. They contended that this is one reason why the police officers and the extension officers are unable to do much to prevent the conflicts that often accompany the invasion of the crop farms by the nomadic herdsmen.

6.8.9 Lack of modern communication technology facilities

This was another major issue that was brought to the attention of the researcher. Although some of the police officers and the government officials responsible for overseeing the activities of the crop farmers and the nomadic herdsmen agreed to having access to modern communication equipment such as mobile telephones, the majority of the rural households complained of a lack of such communication facilities. These facilities can greatly help the police to be informed readily of any outbreaks of conflicts, to enable them to respond accordingly. In the absence of these facilities, the communities found justification in linking the persistence of the conflicts and other criminal activities in the villages to the general lack of modern communication technologies in the rural communities.

Related to this problem was the disclosure that often the public was rather unwilling to report cases on the farmer/herdsmen conflicts to the police for fear of reprisals. There was the general impression that the government officials themselves do not in most cases want to put on much publicity on

the conflicts which they see as having the potential to discredit the central government of Sudan.

6.8.10 The closure mentality

The stakeholders criticised the tendency characteristic of the government of Sudan to rely on local work force, financial resources, and others resources to address the conflicts used this term. With the budgetary constraints, some of the stakeholders explained the persistence of the conflicts to the unwillingness of the Sudanese government to approach foreign organisations and institutions for financial support for funding some of the projects in the conflict prevention plans. In addition, the government was blamed for not opening up opportunities for foreign experts to come in freely to assist with various forms of expertise in lessons on best practices on conflict resolution.

6.8.11 Lack of local initiatives for bringing the crop farmers and the nomadic herdsmen together

One other explanatory factor underpinning the persistence of the conflicts was traced to the absence of concrete projects in the villages for mobilising the crop farmers and nomadic herdsmen. The households complained about the lack of motivation for individual families to initiate projects such as cultural fairs and festivals or seminars and conferences on peacebuilding, business contacts, and other such activities. One general complaint was that such programmes were absent because of the lack of funds and other resources for those individuals and other groups who would otherwise wish to promote such programmes.

6.8.12 Corruption, nepotism, and ethnicity

The researcher's attention was drawn to isolated cases of corruption, nepotism, and apathy in the conflict prevention programmes. The farmers, nomadic herdsman, and other individuals and groups made mention of problems of some government officials often taking decisions on the peace plans on the basis of ethnic, cultural, religious, political, and other considerations.

6.8.13 Acts of sabotage

Some sections of Greater Kordofan society were mentioned by the local communities as engaging in various acts of sabotage activities against the plans for getting rid of the conflicts. The study findings reveal that such criminal activities include people who deal in weapons in the region. Such criminals were reported to be selling weapons to both the crop farmers and the nomadic herdsman for engaging with one another. Most of such weapons were apparently traced to the fallouts from the civil wars in Libya and other neighbouring countries. The weapon dealers were said to include some households in South Kordofan who sell weapons to the political rebels in Darfur and the Nuba Mountains region against the Central Government in Khartoum. The findings indicate that other individuals and organised syndicates associated with sabotage activities included those involved in acts of vandalism and theft of equipment for public irrigation and other infrastructure projects for the crop and livestock farmers. The harm caused by such illegal activities on the peacebuilding programmes was found to be quite considerable.

6.8.14 Lack of coordination among the organisations involved in rural development projects in the Greater Kordofan region

This aspect of the study problem was about the general lack of coordination among the organisations and institutions associated with the development of the various sectors of the rural development processes of the study region. The peacebuilding initiatives, for example, were criticised by the communities for being scattered among several organisations, with the majority having no formal legal status, and also having limited funds. The projects on building irrigation projects for the nomadic herdsmen, for example, were criticised for having no central coordinating organisation. Under such circumstances, the complaints were that implementing and monitoring progress in the various policies and plans on the conflicts could only become difficult.

The task of coordination is very much the responsibility of the central and local governments. The general absence of the role of the State in providing leadership in terms of project coordination for various organisations (local and foreign) to make their maximum contributions to the peacebuilding efforts was thus one central complaint from the rural communities.

6.8.15 The Fear of the Unknown factor

A rather remarkable finding in the study relates to what the researcher has termed the FOTU factor. The acronym stands for the *Fear of the Unknown* factor. It denotes the fears that were consistently expressed by the crop farmers and the nomadic herdsmen towards the implementation of some of the policies and plans on the peacebuilding processes. The crop farmers

and nomadic herdsmen explained that their unwillingness to interact with one another is because they could not predict how their opponents would respond to their initiatives for peacebuilding. In the midst of such uncertainties, most of the crop production households explained why they were often unwilling, for example, to engage in community building projects with the nomadic herdsmen. While they both concur that the two activities are complementary, most of them at the same time explained that they were often unwilling to engage with their opposing groups in issues involving “give-and-take”. This is one of the major challenges which was identified in this study – the problem was relating to the lack of trust between the two groups.

6.8.16 Lack of information sharing and dissemination about the crop farmers and the nomadic herdsmen

The crop farmers and the nomadic herdsmen, in particular, mentioned this as a major obstacle to the success of the plans for addressing the conflicts. Their major complaint was about the general absence of information sharing between the nomadic herdsmen and the crop farmers covering issues such as the number of households deriving their livelihoods from the two activities, about the technologies associated with them, about the employment being created through the two activities, and about the benefits the GreaterKordofan region stands to gain by promoting both activities. The nomadic herdsmen and crop farmers explained that inadequate information about the complementary nature of the two activities was a major obstacle in getting the support needed to implement the plans on the peacebuilding processes.

6.8.17 Lack of political will on the part of the Sudanese government to mobilise the necessary resources to implement the plans on the peacebuilding projects

This problem or complaint was about the inability on the part of the government to demonstrate leadership in ensuring that project implementation and monitoring become central features of its responsibilities in the plans for preventing the conflicts. This leadership challenge was in fact mentioned by some of the stakeholders as being more central than the problem of inadequate funds for project implementation.

6.9 Different statements, different ideas, and different disciplinary backgrounds

Running through the above discussions, it emerged that the reliance on the stakeholders for information on various aspects of the conflicts helped to enrich the findings of the study and also helped to disclose their various backgrounds. In some cases, the accounts of the stakeholders portrayed elements of blame games in which the causes for the persistence of the conflicts were related to people who were felt to belong to other groups – fields of specialisation, disciplinary backgrounds, religion, educational status, gender, ethnicity, and economic status. In other cases, personal emotions seemed to influence the utterances. However, the problem of inadequate funding for implementing the projects and the lack of constant communication between the government officials, the nomadic herdsmen, and the crop farmers were mentioned as key problem areas.

Table 6.14 provides a summary of some of the common statements which were obtained from the stakeholders. The information displayed in the table illustrates the variety of opinions held on the conflicts.

Table 6.14: Typical analytic statements associated with the stakeholders

Stakeholder	Common/typical concerns, expressions, and analytic statements on the persistence of the conflicts
The government officials	<p>Lack of funding is the major problem in the implementation of the policies and plans on the conflicts</p> <p>The central government needs to allow other organisations to make their individual contributions to the peace efforts; some saboteurs are also undermining the peace efforts</p>
The crop farmers	<p>The government officials need to make their presence felt by putting much emphasis on project funding</p> <p>Private land ownership will help to address most of the development problems of the rural communities</p>
The nomadic herdsmen	<p>There is much unwillingness on the part of the government to release funds for implementing projects on nomadic herdsmen: some local communities tend to discriminate against the nomadic culture</p>
The service providers	<p>The persistence of the conflicts is due largely to mismanagement on the part of</p>

Stakeholder	Common/typical concerns, expressions, and analytic statements on the persistence of the conflicts
	the government officials
The customers of the crop farmers	The products of the crop farmers face stiff competition from imported goods. The crop farmers need to adopt modern farming methods to produce quality crops
The customers of the nomadic herdsmen	The nomadic herdsmen need to modernise in order to enter the market economy. The government needs to start thinking of developing cattle ranches for the nomads to engage in modern livestock farming practices
The traditional rulers	The government institutions need to recognise the important roles that traditional chiefs can play in the peace building programmes between the nomadic herdsmen and the crop farmers. The politicians continue to ignore the roles of traditional institutions and systems on conflict resolution
The wives of the crop farmers	There is little space for women to participate in peace building and other local development projects
The wives of the nomadic herdsmen	There is little space for women to participate in peace building and other local development projects
The children/youth of the villages	There is little space for the children of the crop farmers and nomadic herdsmen to interact and share ideas. The youth are the

Stakeholder	Common/typical concerns, expressions, and analytic statements on the persistence of the conflicts
	future leaders of Greater Kordofan
Knowledgeable academics on the topic	The government departments need to interact with the academic community of Sudan to find common ground to address the relations between the crop farmers and the nomadic herdsmen; the academic community needs to be involved in the rural development of the Greater Kordofan region as a whole. The conflicts cannot be separated from the broader development needs of the communities
The police officials/security agents	The Greater Kordofan police service is under-resourced to intervene in the conflicts between the crop farmers and the nomadic herdsmen; some criminal elements are fueling the conflicts between the crop farmers and the nomadic herdsmen
The ordinary rural households	The conflicts between the crop farmers and the nomadic herdsmen have been an integral and disturbing part of the history of the Greater Kordofan region

The statements in Table 6.14 help to give indications of the variety of ideas that were found to run through the minds of the stakeholders linked to the activities of the nomadic herdsmen and the crop farmers. A deep reflection on the statements highlights that they ultimately point to the importance of human values, actions, and perceptions in the understanding of the

persistence of the conflicts. Establishing relationships between the various statements, lead to the following inferences or impressions:

- The important position occupied by the government departments in the resolution of the conflicts and the lack of funds for implementing the projects under the plans
- The proper management of the funds and other resources for implementing the plans for addressing the conflicts
- The necessity for strengthening the information dissemination systems on the peacebuilding plan to the broader society of the Greater Kordofan region
- The need for the government officials to devolve some of the tasks for implementing the programmes to the local communities and other organisations to reduce the possibility of over-concentration of decision-making in the hands of a few officials and also to reduce the burden on the shoulders of the government for addressing the conflicts

From the foregoing and from Table 6.14, it is clear however that the disciplinary backgrounds of the stakeholders did have an influence on the types of statements which they made, the nature of blames they made, and also in the nature of recommendations made. As was mentioned earlier in Chapter 1, an important feature of critical realist-based research concerns its ability to disclose information on the interdisciplinary nature of the objects of study. It has been argued that communities and other forms of organisations tend to comprise individuals and groups from various disciplinary and other backgrounds (Hartwig, 2007: 189; Bhaskar et al, 2010; Buchanan and Reinemann, 2013, Holland, 2014). The illustration in Figure 6.11 gives some impression about the disciplinary backgrounds of

the stakeholders linked to the conflicts. The information displayed suggests that any plans for resolving the conflicts need to take account of the disciplinary as well as other social backgrounds of the local communities (religious, ethnic, and cultural).

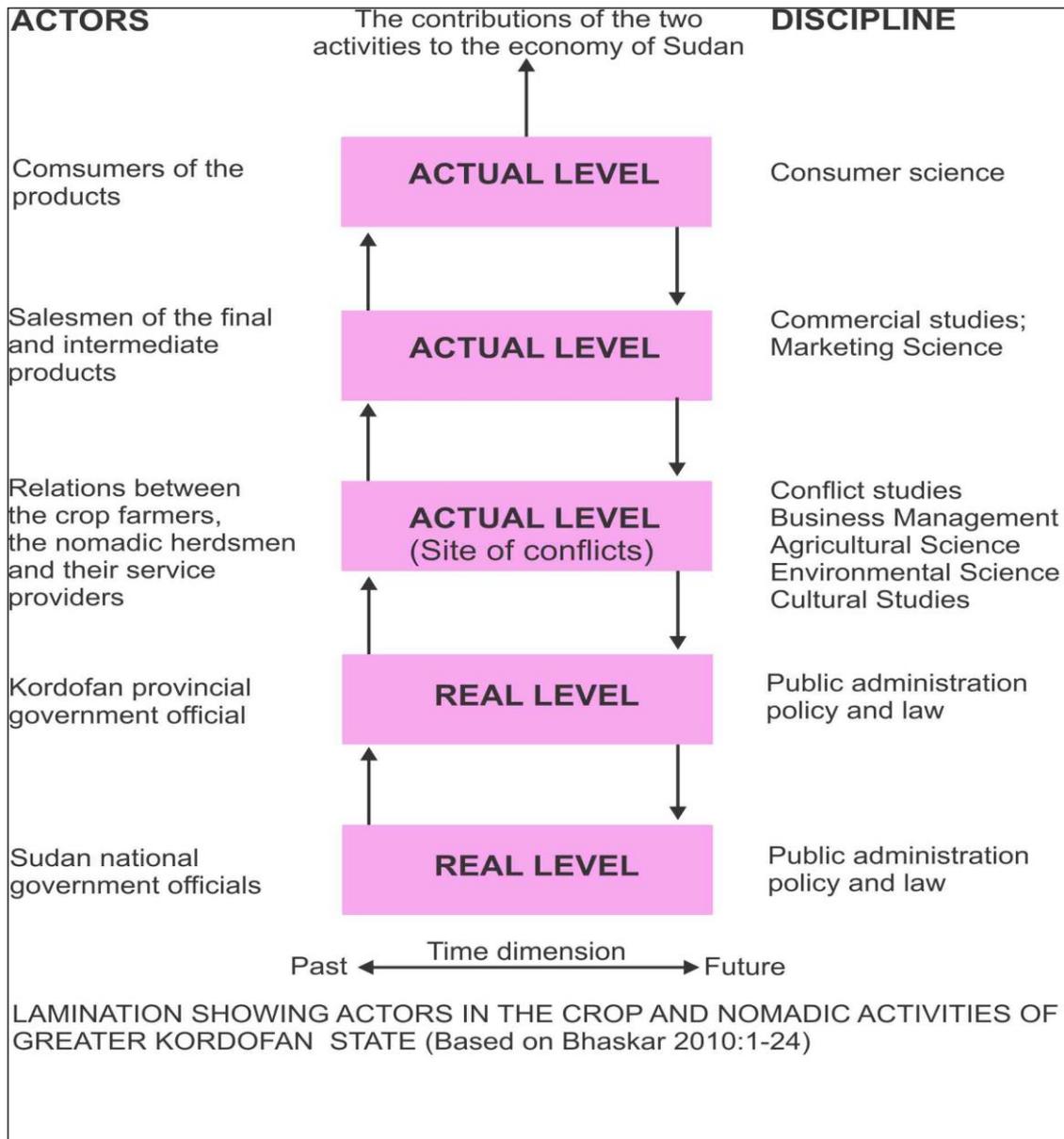


Figure 6.11: Lamination showing the disciplinary backgrounds of the stakeholders in the crop production and nomadic activities

Source: Adapted from Bhaskar et al (2010: 1-24; Price, 2014)

From Figure 6.11, it also emerges that the government officials need to take account of the disciplinary and other backgrounds, the interests, and values of all the stakeholders linked to the activities of the crop farmers and the nomadic herdsmen in the formulation of future plans on the conflicts. Because the interests and values of the various groups might not necessarily be conducive to the principles of long-term community development, it is recommended that permanent civic education programmes for team building be intensified in all the districts as tools for bringing all the communities together.

6.10 The conflict problem in its bigger context

The bulk of the study findings as already reported serves to highlight the role that stakeholders were playing in the successes and failures of the peace initiatives in the Greater Kordofan region as at 2016. The role of those government officials linked to the conflict relations between the nomadic herdsmen and the crop farmers in the region have become quite apparent.

The broader constraint under which the stakeholders in the conflicts have been operating now needs to be mentioned at this stage. As has been mentioned earlier in various sections of this study, the central government of Sudan has been facing major political crisis over the past 15 years. This problem relates largely to the attempts by sections of the provinces of the country to secede. The secessionist movements have been centred in the Nuba Mountains and also in the Darfur regions of Sudan. The defence and security budgets of Sudan have therefore been increasing over the years as a result of this development. In the process, funds for other development projects in Sudan have been reducing in relative terms over the years.

According to *The Sentry*, an organisation that monitors funding of conflicts and security budgets in Africa, and other sources, about 70% of Sudanese central government spending currently goes to the defence and security sector for purposes of maintaining law and order in the country. It is also indicated that the total government annual Sudanese budget in 2016 was 68 billion Sudanese pounds (www.africa.com/blog/measuring-the-cost-of-war-in-Darfur). Of this, the defence and security budget in 2016 was estimated at 50 billion Sudanese pounds. In dollar terms, this was the equivalent of US\$8 billion. In 2016, one US dollar exchanged for 11 Sudanese pounds.

In comparison to the foregoing, under the current 2016-2020 Five-Year Economic Reform Plan, the records which the researcher has been able to access reveal that the budget for agriculture and forestry for the Greater Kordofan region is 4 billion Sudanese pounds (less than 10% of the defence budget). It is out of this budget that the bulk of the projects on the conflicts between the crop farmers and nomadic herdsman will be derived. The information that was accessed in the Sudan national budget for health in 2017 is estimated at 2.72 billion Sudanese pounds and that of education at 3 billion Sudanese pounds. It is clear from these figures that the funds that can be allocated to the peacebuilding initiatives between the crop farmers and nomadic herdsman can only run into few thousands of US dollars or Sudanese pounds.

The inability of the central government to allocate enough funds to resolving the conflicts between the nomadic herdsman and the crop farmers in the Greater Kordofan region therefore needs to be seen in this bigger national budgetary constraint context. The success of the peacebuilding initiatives between the nomadic herdsman and the crop

farmers will therefore depend, among other things, on the extent to which peace prevails in the provinces of the Republic of Sudan. The success of the peace initiatives between the nomadic herdsmen and the crop farmers, therefore, depends very much on the extent to which peace prevails between the central government and the rebels in the other regions of Sudan, in particular, in Darfur and Nuba Mountains area of South Kordofan in particular. Increases in the national defence and security budgets can only imply reductions in the budget for projects such as the peacebuilding plans for the Greater Kordofan region. The local and the macro national budgetary figures are thus very much intertwined.

The broader context thus matters in the understanding of the successes and failures of the peacebuilding initiatives between the nomadic herdsmen and the crop farmers. In this connection, it needs to be mentioned that among the external sources of funding for the conflict prevention programme are the funds that can come from the Arab League for example. Sudan can be granted loans and grants from oil-rich countries such as Qatar, Kuwait, United Arab Emirates, and Saudi Arabia. Loans from these oil-rich countries have the potential to support the implementation of the various development plans of Sudan. The nature of the international relations of the government of Sudan has implications on the amount of external financial support that can come from outside. Foreign aid will not flow into Sudan if the unrest in Darfur, South Kordofan, Blue Nile and other regions continue.

6.11 Concluding remarks

This chapter has presented the findings of the study in the context of some challenges or constraints, which were found to stand in the way of the efforts of implementing the plans in place to build peace between the crop farmers and the nomadic herdsmen. Some social researchers tend to assume that concrete achievements are somehow congruent with the ideal expectations in societal plans and policies. Critical realist researchers accuse such researchers of conflating *what is the case with what ought to be the case*. By separating the two situations, however, critical realists are able to disclose the nature of the gaps which tend to exist in social life. Simply paying attention to such gaps, Hartwig (2007: 50) has shown that the relevant causal processes can be identified and the relevant mechanisms put in place for finding the appropriate intervention programmes.

This problem identification-based approach to conducting social research has been presented in this chapter in the context of Phases 1M and 2E of Bhaskar's MELD model. The discussions have confirmed the theory advanced by Bhaskar (2008) in the context of dialectical critical realist theory, which states that opposing forces tend to operate in social life to frustrate stakeholders from achieving or implementing some objectives or desired states. The findings in this chapter have been used to disclose how some aspects of the economy of rural Kordofan unfold through some dialectical processes involving conflicts between crop farmers and nomadic herdsmen. The two communities have been abstracted to demonstrate how the contradictions between their cultural lenses have been

creating some conditions for the government departments to take into account.

The findings show that some 17 problems currently stand in the way of building peace between the nomadic herdsmen and the crop farmers under study. These two groups play critical roles in the development of the Greater Kordofan region. The Greater Kordofan government's policies and plans in place to build peace between the nomadic herdsmen and the crop farmers therefore need to be implemented.

In the next chapter, attention will therefore be turned to an examination of how the 3L and 4D phases of the MELD model of Bhaskar could serve as the framework for addressing the 17 challenges discussed above. In that chapter, it will be argued that the challenges discussed above need not persist any longer.

CHAPTER 7: RECOMMENDATIONS AND CONCLUSION

7.1 Introduction

The previous chapter discussed the study findings. This chapter provides an outline of the recommendations of the study. This is in the context of the fifth objective of this study. The issues that were discussed in the previous chapter indicated that major practical interventions are needed to address the problem of inaction on the part of the stakeholders for implementing the plans for addressing the conflicts under study.

The recommendations in this chapter are therefore based on the concrete actions that need to be taken to get rid of the problems discussed in the preceding chapter. The previous chapter applied the MELD model in the context of the 1M and 2E phases. This chapter follows up with discussions on the two other phases of the MELD model, 3L and 4D.

7.2 The 3L and 4D phases as a solution

The MELD model has been applied in various research projects to illustrate how change could be implemented. Schudel (2012), for example, applied the MELD model for explaining the development of environmental education in a professional teacher development programme in some schools in one of the provinces of South Africa. Schudel drew considerably on the morphogenetic model of Archer (1995) to demonstrate how the transformation processes could be implemented. In another study, Quinn (2006) also illustrated how Archer's morphogenetic model can be used to enrich the MELD model in terms of the emergence of a formal academic staff development programme in South Africa. Laske (2016)

illustrated how Bhaskar's MELD model can be used to analyse adult cognitive or human consciousness development processes. His four phases were analysed in terms of common sense, understanding, reason, and practical wisdom. Alderson (2016) also applied the MELD model to analyse the phenomenon of child abuse.

The MELD model is thus quite flexible as was discussed in Chapter 4. It has been used to analyse various social issues. In the various applications, awareness creation for social change runs through as a common theme. Awareness or consciousness creation has been presented in the applications of the MELD model as a useful framework for preparing communities for positive social change. On this point, Bhaskar (2002, 2006) argues that the MELD model demonstrates that the more communities are convinced about the benefits which they stand to gain from new programmes, the more prepared they will be to embrace the changes associated with such innovations. The role of awareness campaigns for mobilising people for change is thus central in the MELD model.

The discussions in this section will therefore once again make reference to a number of models on the importance of transition processes. In Figure 7.1, *the steps to bridge the gap* section represent the new strategies and awareness creation programmes needed to implement the existing policies and plans for peacebuilding. In Figure 7.2, it is represented by the circle denoted by *bridging the gap*. The two models thus help to reinforce the importance of preparing people to get rid of the 17 constraints, absences, or gaps working against the project implementation processes.



Figure 7.1: Model presenting the nature of the essential steps needed to achieve peace between the crop farmers and nomadic herdsmen under study

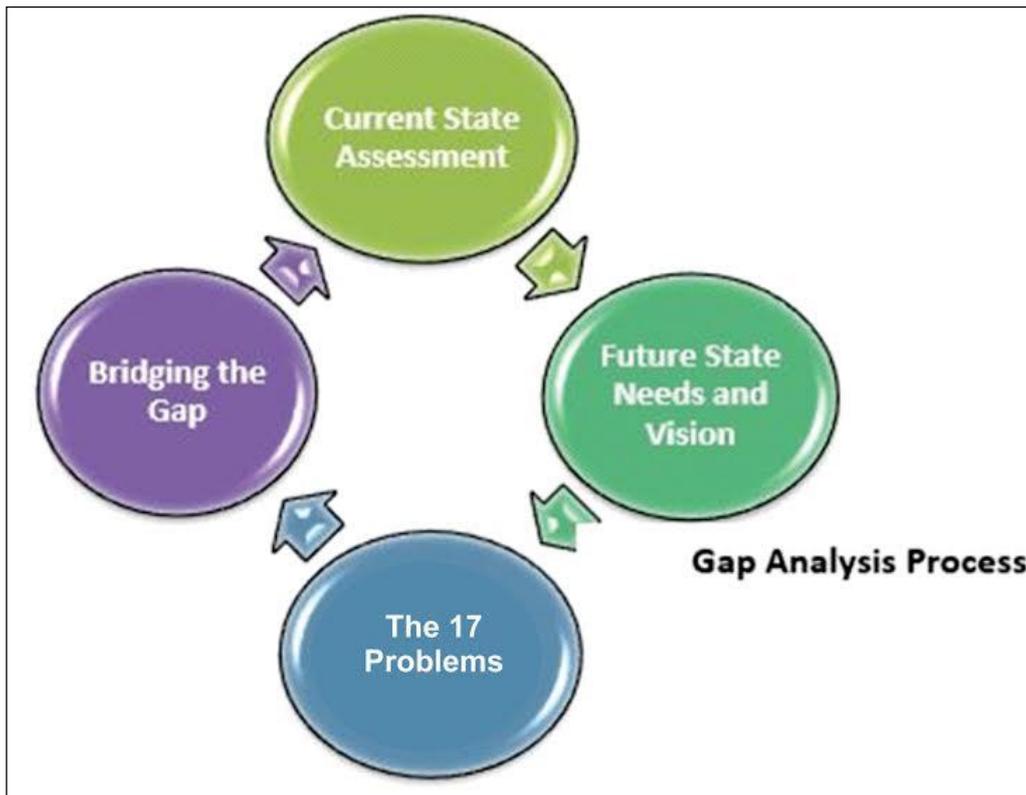


Figure 7.2: Model indicating the importance of the 17 problems and their negation phase in arriving at a peaceful relationship between the two groups

The models in Figures 7.1 and 7.2 thus highlight the need to educate the communities about the nature of the 17 problems faced in the implementation of the policies and plans on the peace building processes. They serve to illustrate that once the communities are made aware of these problems, concrete strategies for removing them can then follow. Next, the relevance of the 3L and 4D MELD phases as tools for addressing the 17 problems are discussed.

7.3 Phase 3L: awareness creation and other strategies for disposing of 17 problems

In this phase, once there is general awareness of the credibility of the 17 problems, the next step could then be devoted to the process of using the new knowledge to draw up specific plans for getting rid of the 17 problems outlined in the previous chapter. The idea of people emerging to a new level as was depicted in Fig 4.2 can thus be interpreted in terms of the new development plans, which the stakeholders will have to formulate to confront the 17 problems.

It is suggested that the plans be formulated by local committee members in the districts on ways of addressing each of the 17 problems. The new plans would be agreements and commitments that will be binding on the stakeholders linked to the conflicts. Formulating the plans will thus need the input of the representatives of the crop farmers and the nomadic herdsman. Also, the input of the other stakeholders on the conflicts will be crucial.

The government officials will be required to provide leadership in the coordination of the individual plans that are listed below. The plans could be formulated along the following suggested lines:

- *Funding*

The task team on this portfolio needs to devise a sustainable strategy for ensuring that enough funds are available on an annual basis to enable the government officials to mobilise the resources needed to implement the various projects. This could include negotiating for financial support from neighbouring members of the Arab League for example.

- *Plans for dealing with the environment-related problems*

The team set up for this project needs to formulate plans on soil conservation, afforestation, watershed protection, location of forest reserves, and for irrigation projects, wells, ponds, and other environment-based projects in the districts. Deadlines for implementing such projects would then have to be determined. The idea behind this programme will be to help reduce the problems of increasing aridity in the Greater Kordofan as a whole.

- *Cultural development plans*

The task team established for this needs to find out the factors standing in the way of implementing the projects under this cluster. Among other things, the plans under this portfolio will have to be concerned with drawing up dates for the organisation of cultural festivals for purposes of bringing the nomadic herdsman and the crop farmers together for purposes of sharing ideas constitutes a central pillar. In addition, this programme needs to cover the project on resettlement schemes in which families in South Kordofan, in particular, would be encouraged to settle in new settlements where the basic needs of the family – housing, schools, clinics, electricity, and shops – will be provided.

- *The task team for dealing with the problems being created by the mining and other activities in South Kordofan*

The team would have to draw up a plan for integrating the modern commercial, agricultural, mining, industrial, and other businesses in the Greater Kordofan region with the livelihoods of the crop farmers and the broader rural households. Ways of linking such activities to the sustained development of the rural families would have to feature in the plans. The

activities of these firms do not necessarily have to under develop the rural areas. What will be needed from the task team will be the formulation of well-thought-out plans which can link the needs of the growing capitalist companies in South Kordofan with the needs of the crop farmers and the other rural communities.

- *The negative psychological problems associated with the nomadic activities*

A specific plan needs to be drawn up for the families in the villages to remove the negativity associated with the tents and caravans of the nomadic herdsmen. Such plans would have to involve the work of social workers, among others.

- *The plan on the roles of the police and security cluster*

The planning team in this portfolio will have to formulate plans for making the police service an integral part of the peacebuilding initiatives between the nomadic herdsmen and the crop farmers of the Greater Kordofan region. Educating the public on the important role of the police in the peace building projects will be central in this cluster. This project might cover projects for increasing the number of police stations in the conflict hot spots.

- *Plans on the rural transportation system of the Greater Kordofan region*

Providing transport services for the public servants in the conflict prevention programmes is crucial. Lack of transport was mentioned by the stakeholders as one major problem of communicating with the crop farmers and the nomadic herdsmen. It is also a major problem which

emerged in the study as a constraint which affects the sales of the produce of the crop farmers. Plans need to be formulated on ways of making transport services (public and private) available to the communities and the government officials. No such plans were found to be in the books of the district capitals. The study findings indicate that transport problems adversely affect the work of those organisations and institutions working in the area of conflict prevention between the crop farmers and the nomadic herdsman. This is why the task team on this portfolio would have to devise plans for improving the conditions of the corridors set aside for the nomadic herdsman, of the rural feeder roads in particular, between the rural settlements and the urban settlements and from the farms to their market centres.

- *The need for modern communication systems in the Greater Kordofan region*

The government officers working with the crop farmers and the nomadic herdsman and the police officials have for decades complained of a general lack of communication facilities such as telephones in the effort to prevent criminal activities. The planning team on this portfolio would have to outline strategies for providing the government officers with modern communication systems to help in the conflict resolution projects.

- *Plans for improving the networks*

The planning teams would have to formulate strategies for exploring ways of getting improving social networks between the crop farmers and the nomadic herdsman. The traditional chiefs could be assigned special roles in such programmes.

- *Plans for dealing with the problem of lack of incentives for those working to bridge the gap between the crop farmers and the nomadic herdsmen*

The plans under this project would have to draw up a list of incentives to be given to all those working in various fields for promoting peace building between the crop farmers and the nomadic herdsmen. The incentives need to include cash payments. Such incentives can go a long way in attracting experienced people from various backgrounds to take up various voluntary and other assignments on the peacebuilding programmes.

- *Plans for dealing with the problems of corruption, nepotism, and apathy*

The members on this committee would have to come up with concrete plans for getting rid of any signs of corruption and mismanagement in the programmes for getting rid of the conflicts.

- *Plan for dealing with the problem of lack of coordination among the organisations involved in rural development projects in the region*

The committee members on this task would have to draw up a comprehensive strategy for dealing with any problem that is linked to the lack of coordination between the government departments and the other organisations working on the peace project.

- *Plans for dealing with the FOTU factor*

The special committee that will be dealing with this problem will have to draw up a plan for building solidarity, mutual trust, and loyalty among the crop farmers and the nomadic herdsmen to the extent that they can

implement their side of all the agreements, plans, and arrangements without any fear of non-compliance or sabotage on cooperation from other partners.

- *Plans for dealing with the saboteurs working against the plans for addressing the conflicts*

This problem is about sections of the communities that engage in activities that go contrary to the objectives of the peacebuilding plans. These include those who vandalise vital infrastructure and other resources needed for the implementation of the conflict prevention projects. The plan on this problem needs to draw up guidelines for addressing this problem.

- *Plans on information sharing*

The plan on this problem will have to indicate guidelines that will ensure that the government officials hold regular meetings to disseminate information to the nomadic herdsmen, the crop farmers, and the local communities covering important statistical information, the various roles of the stakeholders, and problems that need to be attended to by all.

- *Plans on political will, commitment, project implementation deadlines*

The committee members on this problem will have to draw up guidelines that need to be followed by the government departments to ensure that the policies and plans for addressing the conflicts are all implemented on quarterly and on annual basis. In this area, the officials from the various government departments would be required to work with designated politicians about the need for implementing the above recommendations.

7.4 Phase 4L: implementing the 17 plans under the Transformative Agency phase

This phase in the MELD model needs to be devoted to actions needed for implementing the foregoing 17 plans discussed. This phase must thus entail the building of the projects under the above plans, visiting project sites, data collection on the impacts of the projects, undertaking performance evaluation, and using the findings to make the necessary recommendations for future action. This phase will therefore be related to the visible transformation processes in Bhaskar's Transformation Model of Society-Person Connection (TMSA) and also his 4-planar social cube model.

Phase 4L must also entail constant monitoring on the part of the government officials and the stakeholders to ensure that the above plans for addressing the 17 problems are implemented. One would thus expect the various committee members on the 17 plans to meet from time to time to brainstorm on their successes and challenges. The submission of quarterly reports would be essential here. On the basis of the activities under this 4L phase, the cases of underperformance, wastage of resources, corruption, shoddy work, and other problems would emerge.

The activities under the 4L phase would thus serve to bring into the picture the importance of monitoring processes in the above plans. They help to emphasise that, above all, it is through the reflexive monitoring of the performance on the above plans that one can be sure of getting rid of the 17 problems.

In the language of dialectic theory, implementing the 17 plans under the 4L phase is another way of saying that the communities would be getting rid

of or *absenting* the 17 problems. Thus, the relevance of Bhaskar's concept of absence becomes clear at this stage. It implies that progress could occur by absenting certain situations or conditions. Hence, as illustrated in Figure 7.3, the findings from the monitoring processes by the relevant officials would help them to generate the information on the number of problems which have been removed and those still remaining. The monitoring exercise will therefore very much be about tasks related to finding out about *presences* and *absences* (Hartwig, 2007: 17).

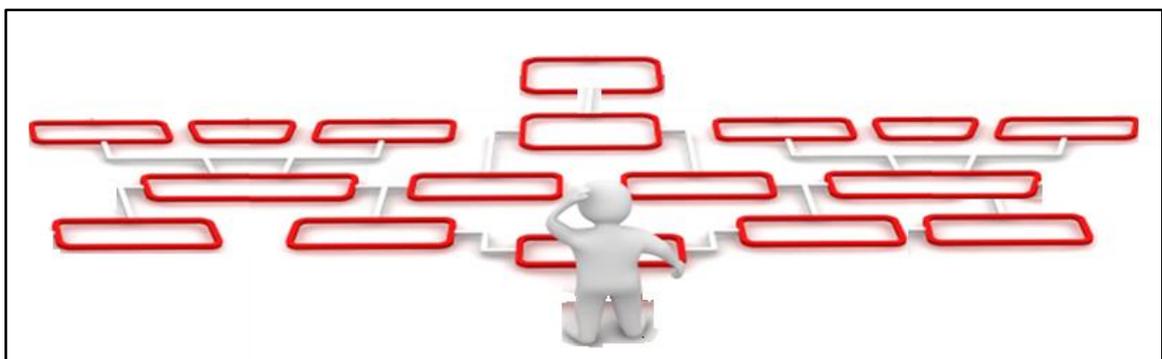


Figure 7.3: A model illustrating a government official monitoring the achievements and failures in the 17 plans (boxes) on the basis of the number of challenges that have been removed/absented (Source: Based on Yirenkyi-Boateng, 2016a; 2016b).

A similar exercise on the *presence/absence* dialectic is provided in Figure 7.4. Here, the illustration gives a picture of the extent to which the monitoring processes can help to provide information on the weight of the problems that need to be accommodated or disposed of in order for progress to occur. The model illustrates that getting rid of the load of problems, challenges, and constraints in the peace building initiatives can go a long way in releasing the energies needed for forward movement.



Figure 7.4: A model giving a picture of the nature of information that could be obtained at the 4L phase concerning the magnitude of problems that have been disposed of (Source: Based on Yirenkyi-Boateng, 2016a; 2016b)

The illustrations in Figures 7.3 and 7.4 thus help to convey the message that getting rid of the weight of the 17 obstacles at phase 4L has the potential of ushering in the following impacts:

- The deteriorating environmental situation can be reversed as the strategies for greening the land take off.
- The cultural gulf that currently represents a source of friction between the nomadic herdsmen and the crop farmers can also come to an end.
- Those activities of the oil and other companies in South Kordofan which adversely affect the activities of the nomadic herdsmen and the crop farmers will also have the prospect of coming to an end.
- The negative psychological impacts of the presence of the nomads on the mindsets of the crop farmers can also come to an end.
- The problem of lack of funding for the peacebuilding programmes will also come to an end as the new funding strategies are implemented.

- The lack of incentives to the government officials to put in their maximum efforts in the peacebuilding programmes will also become something of the past.
- Public appreciation of the role of police officers for preventing the conflicts between the nomadic herdsmen will increase to maintain peace in rural Greater Kordofan region.
- The necessary incentives will also now be provided to the government officials to enable them to put in their best.
- The problem of inaccessibility of the villages will be removed as the conditions of the road networks are improved.
- Modern communication technologies will be made available to the officials to enable them to communicate effectively.
- More foreign input in terms of expertise, funding, and other resources will be available to support the peacebuilding programme.
- The problems being created by corruption, nepotism, and ethnicity in the peacebuilding programmes would also come to an end.
- The problem emanating from acts of sabotage of the peacebuilding programmes will also end.
- The problems linked to the FOTU factor will also end.
- There will be the prospect of coordination and cooperation among the government departments linked to the conflicts; in addition, the government of the Republic of Sudan will begin to show more commitment in the implementation of the peacebuilding efforts.

From the above, it will be expected that the removal of the aforementioned constraints will have the potential to lead to considerable peace, which will, in turn, provide the foundation for increased output, employment, and income generation from the nomadic herdsman and crop production activities. It needs to be mentioned that the aforementioned impacts are expectations. The 17 plans may not necessarily be achieved to the full. Social conditions do take place in open systems and new cases of project non-implementation will therefore be expected to emerge in the future to present fresh challenges to the government officials. One should expect therefore that the two options (intended and unintended outcomes) will likely continue to present themselves in future as was discussed under the chapter on the conceptual framework of the study.

7.5 Dealing with the two options

The above thus indicates that one has to accept the reality of two options or outcomes in future in the attempts at addressing the problems and conflicts under study.

Table 7.1: Comparing the different outcomes to be associated with the implementation and non-implementation of the plans on the 17 problems

Implementing the 17 plans	Non-implementation of the 17 plans
End of the conflicts	The conflicts continue
Peace and mutual understanding between the crop farmers and nomadic herdsmen	Conditions of hatred and mutual suspicion continue between the crop farmers and the nomadic herdsmen
Closing of the gap between the government plans and the outcomes	Widening of the gap between the government plans and the outcomes
Increased government enthusiasm in allocating resources to the crop production and livestock activities	Increased government unwillingness to allocate resources for the two groups
Increased crop production	Decreased crop production
Decreased nomadic activities; improvements in the quality of the natural environmental systems	Increased nomadic activities; increased environmental degradation
Increased opportunities for youth employment in the rural areas of Greater Kordofan	Out migration of the youth from the rural areas of Greater Kordofan
Positive investment prospects in the Greater Kordofan region	Worsening investment prospects in the Greater Kordofan region

The implications of the two scenarios in Table 7.1 thus help to bring into the picture the importance of taking seriously the monitoring processes of the 17 plans on the conflicts. Without proper monitoring of the presence/absence situations of the 17 problems, a situation could prevail in which the problems could actually grow in size. Without taking the necessary steps to implement the plans for getting rid of the 17 constraints, the crop farmers, the nomadic herdsmen, and the broader rural communities of the Greater Kordofan region could continue to carry the

burden depicted in Figure 7.4. They could be living their lives in terms of growing uncertainty.

Choice thus remains in the implementation or non-implementation of the plans on the conflicts between the nomadic herdsmen and the crop farmers in a certain way. The choice is primarily about a change in the mindsets of the stakeholders linked to the conflicts or about the maintenance of the current situation. It is a choice between a sustainable, peaceful future or a conflict-ridden future. It is thus also very much a choice between belief in an open and changeable society versus belief in a somewhat deterministic closed social system about which there is no escape. It is thus about the choice between a cul-de-sac mentality of no room for escape versus a straight street mentality in which one can keep moving forward.

By seeing the current conflicts between the crop farmers and the nomadic herdsmen in a certain way, the government officials and the other stakeholders covered in this study are therefore helping to promote a certain development situation in the Greater Kordofan rural communities. The situation, as described by Bhaskar (1991), is about the dialectic of freedom.

7.6 Future research areas

This study sought to disclose certain issues linked to the conflict relations that have developed over the years between the crop farmers and nomadic herdsmen in the Greater Kordofan region of the Republic of Sudan. The objectives of the study were to establish how cultural differences in the interpretation of natural resources have contributed to the conflicts and the efforts of the Sudanese government to address them.

By engaging the stakeholders linked to the conflicts, a number of critical issues have emerged which have proved to be of crucial importance in the understanding and resolution of the conflicts. These issues have been discussed at length, and the practical implications of applying them to the resolution of the conflicts have been elaborated on.

As discussed under the theoretical framework of this study, there are always some issues which can escape the attention of people as they go about addressing their aspirations, potentials, problems, and needs. When critical realists talk about the limitations in the knowledge of people, they actually refer to such realities. In paying attention to the information disclosed by the stakeholders in this study, the research rightly acknowledges that there are certain important issues that other researchers can study.

The critical realist approach offers some interesting insights into the way one can obtain the full picture of reality or their situation by relying on others to look at other issues on the same object of study. In practical terms, it is most often difficult to access all the relevant factors that matter on an object of interest. On the basis of this reality, new research areas are now suggested which could also help to bring other important issues into the understanding of the conflicts under study. These are as follows:

- The role of the children and youth in the understanding and resolution of the conflicts: It is common knowledge that the children of the nomadic herdsman constitute integral parts of their family systems. They always accompany their families on the migrations. There is no space for them however in the plans in place to address the conflicts. There is a need for studies which will seek to obtain information on the

health and other conditions of the children as they travel on camels and other livestock on the corridors set aside for the nomadic herdsmen. It would be interesting to interview some of the children concerning their views on the nomadic activities and the possible changes they would like to see in their lives such as acquiring modern education during such studies.

- A study is needed on the role of women in the resolution of the conflicts. Such a study needs to engage the rural women in the study area and obtain insights into how they think they could contribute to the resolution of the conflicts between the nomadic herdsmen and the crop farmers under study.
- Research projects are also needed on the role which religious leaders could play in resolving the conflicts. This is an issue, which is missing in the current plans on peacebuilding. The government officials need to find ways of getting the religious leaders in the communities to get involved in the drawing up of policies and plans in the villages for improving the relations between the local crop farmers and the nomadic herdsmen.
- Research is also needed on the ethnic dimension of the conflicts. The objectives of such research projects must be to find out how ethnic issues underpin the conflicts between the nomadic herdsmen and the crop farmers.
- It would be interesting to find out how the inclusion of Integral Theory concepts might produce different findings and recommendations on the conflicts. A critical realist integral methodological pluralism approach to the analysis of the conflicts might disclose forms of information

which could not be accessed through the MELD approach used in this study. As discussed by Buchanan and Reinemann (2013: 317-338), incorporating concepts from integral theory in agro-ecological research projects can considerably enrich the study findings.

7.7 Concluding remarks

This study has illustrated how over the decades what initially began as mere cultural differences in the interpretations of natural resources between rural crop farmers and nomadic herdsman in the Greater Kordofan region has over the decades branched into several spheres bringing into the picture conflicts, politicians, professionals from various disciplines, traditional chiefs, businessmen, public servants, service providers, and now, academicians.

Academics have come on board with their theories and recommendations on the conflicts under study. The study is based on the idea that attempts to undertake research on society invariably involve taking some ontological positions about those aspects of the reality out there that the researcher intends to study.

The critical realist framework adopted in this study seeks to disclose to the public the position taken in this study in terms of theory, methodology, findings, and recommendations. The discussions on Figure 1.5, in particular, have helped to establish an important link between the MELD model of Bhaskar and the general principles underpinning management and planning, policy analysis, project management, governance, and public administration, among others.

The MELD approach used in this study has helped to point out that the stakeholders under study have not gone that far in getting rid of the conflicts facing them. The recommendations of the study thus open a new chapter on the studies on the conflicts between the crop farmers and the nomadic herdsman of the Greater Kordofan region. The recommendations are based on the idea that so much time has been wasted in the lives of the crop farmers and the nomadic herdsman who have been living with problems which today somehow seem far removed, inaccessible, natural, and somehow immutable. This reification problem is an issue which Hartwig (2007: 292) describes as one key challenge that is difficult to remove in society. Arguing from the critical theory perspective, the recommendations in this study derive from the theories associated with the global progressive social science community that advance radical programmes of sustainable development through positive mindset transformation. This social research perspective, as demonstrated in this study, has the property of emancipating people from their frustrations. It also has the property of using new knowledge and other resources to empower communities to get rid of the obstacles in the way of their development. This property of human agency to make a difference constitutes a central theme in the conceptual framework underpinning this study. The approach places people at the very centre of social processes by making them the active and responsible agents who have the capacity to get rid of their challenges and through that, produce, sustain, and transform their conditions.

With particular reference to this study, the central theme is thus very much about the *dialectic of freedom, transformation, enlightenment, and above all, of peace*. It relates to the statement by Hartwig (2007: 51), where he

states that causality entails changing things, absencing, and so redetermining. The theme is about the relative opportunities available to people to navigate their way through the constraints in their way towards ultimate peace and progress. This theme has been used to maintain that the powers of the opposing forces are always constraining and enabling. It has been drawn upon to argue that the crop farmers and the nomadic herdsman of the Greater Kordofan region need to believe in the possibilities of building long-term peace in their districts. To think otherwise can only sow seeds of despair.

If the findings and recommendations of this study could be made available to the relevant authorities in the Republic of Sudan, there is no doubt that their horizons could be broadened and new ideas could be incorporated in the running of the peacebuilding projects discussed in this study. The communities linked to the conflicts could then begin to experience positive changes in their lives. The peace that emerges could then be used as the basis for improving their living conditions. This study has thus shown that the research projects of the academic community can make practical contributions for addressing the various challenges in society.

It is hoped this study has helped to justify the role which social research can play in the lives of communities. As was discussed in the various chapters, the critical realist approach, with its concerns about ontological issues, can help to use research information to assist communities to understand and transform their livelihoods in positive ways. The discussions in this study have helped to demonstrate the contribution which the critical realist research model can make in the lives of the nomadic herdsman and crop farmers of the Greater Kordofan region.

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APPENDICES

APPENDIX 1. List of the Sudan government departments, 2016

1. The Ministry of Presidential Affairs
2. The Ministry of Cabinet
3. The Ministry of Federal Court judgment
4. The Department of Defence-designate
5. Ministry of Interior
6. Ministry of Foreign Affairs
7. Ministry of Justice
8. Ministry of Information
9. The Ministry of Finance and Economic Planning
10. The Ministry of Agriculture and Forestry
11. The Ministry of Industry
12. The Ministry of Oil and Gas
13. Ministry of Water Resources and Irrigation, electricity
14. The Ministry of Livestock
15. The Ministry of Investment
16. Ministry of Roads and Transportation, bridges
17. The Department of Minerals

18. Ministry of Commerce
19. Ministry of International Cooperation
20. The Ministry of Environment and Natural Resources and Urban Development
21. The Ministry of Tourism and Wildlife
22. The Ministry of Higher Education and Scientific Research
23. Ministry of Culture
24. The Ministry of Guidance and Endowments
25. The Ministry of Welfare and Social Security
26. Ministry of Health
27. The Ministry of Labour and Administrative Reform
28. The Ministry of Human Resource Development
29. Ministry of Youth and Sports
30. The Ministry of Communications and Information Technology

APPENDIX 2: THE QUESTIONNAIRES USED IN THE STUDY

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country. These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

This research is being undertaken to enable you to make practical contributions to the long-term development of the two farming systems. Through your answers, important information can be generated which can be used for positive practical future decision-making. As an academic, my work is to engage people like you for grassroots-based information, which I can use to communicate with the outside world. Knowledge, as we know, is power. The knowledge you make available through my interaction with you can go a long way to improve the future state of affairs of the two farming systems of Greater Kordofan.

It will be highly appreciated if you would allocate some time to answer the questions below. Whatever information given to me will be treated in the strictest confidence, used solely for academic purposes and will not be for public consumption.

Thank you for your co-operation.

Mr Osman Mahdi

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August 2015

For further information, please contact my supervisor, Prof Yirenkyi - Boateng of the Institute for African Renaissance Studies of the University of South Africa via the following addresses: Ucars14@unisa.ac.za or +27826773118

(1) Questionnaires for the nomadic herdsmen in The Greater Kordofan States

PART 1

1. Your name

.....

2. Type of activity

Select ALL that apply

	Make a "✓" against your selection
1. Full time nomadic herdsman	
2. Part-time nomadic herdsman	
3. Other.	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

3. Please indicate your age

1. 20-29
2. 30-39
3. 40-49
4. 50-59
5. 60+

4. Gender

1. Male
2. Female

5. Academic qualifications

1. Matric
2.
3.
4.
5.

6. Religion

- 1. Christian
- 2.
- 3.
- 4.
- 5.

7. Ethnicity

- 1.
- 2.
- 3.
- 4.
- 5.

8. Family size

- 1.
- 2.
- 3.
- 4.
- 5.

9. Your residential address

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10. Length of stay in this area

- 1.
- 2.
- 3.
- 4.
- 5.

11. Please indicate how you would describe your activities/occupation/livelihood (formal or informal sector)

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.....

3. Please provide a list of the average output /impacts over the years of your nomadic activities in terms of the following and how these relate to your expectations:

Types of livestock involved in your activities last year	
Annual production volumes/size of herd	
Annual incomes/profits generated from the nomadic activities	
Annual employment generated	
Size and quality of your livestock	
List of your customers, if any	
List of your service providers, if any	
Other items of information you would like to disclose	

4. Please provide an account of the nature of your relationship with the crop farmers in this area over the years (business, social, land ownership, land use, cultural, religious, political, ethnic relationship etc) and why the relations have taken this form. Choose between by ticking b/t these two types of relationship

PEACE



CONFLICTS



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5. Taking account of the answer to Question 4, please provide a list of the reasons why you think the relations have taken the above form and why they are persistent, if that is the case

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6. Please indicate what you know about the efforts of the government to address the relations you have described above between the crop farmers and the nomadic herdsmen of this area.

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7. Please give your recommendations on what you perceive to be the more appropriate and effective strategies for addressing the problems you listed under No.5 above.

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8. What are your recommendations concerning how awareness creation and other programmes could be formulated and implemented to address the current relations between the crop farmers and the nomadic herdsmen

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PART 3

1. Your opinions on some important issues linked to the relations between the crop farmers and the nomadic herdsmen.

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
Industrialization holds the future for the development of Greater Kordofan					
Urbanization holds the future for the development of Greater Kordofan					
The government policies for preventing the conflicts of the crop farmers and nomadic herdsmen are not being implemented by the local communities					
Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been increasing over the decades					

There are saboteurs working behind the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues.					

THE END

THANK YOU

(2) Questionnaires for the crop farmers of Greater Kordofan States

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country.

These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

This research is being undertaken to enable you to make practical contributions to the long-term development of the two farming systems. Through your answers, important information can be generated which can be used for positive practical future decision-making. As an academic, my work is to engage people like you for grassroots-based information, which I can use to communicate with the outside world. Knowledge, as we know, is power. The knowledge you make available through my interaction with you can go a long way to improve the future state of affairs of the two farming systems of Greater Kordofan.

It will be highly appreciated if you would allocate some time to answer the questions below. Whatever information given to me will be treated in the strictest confidence, used solely for academic purposes and will not be for public consumption.

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Questionnaires for the crop farmers in Greater Kordofan States

PART 1

1. Your name

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2. Type of activity

Select ALL that apply

	Make a "✓" against your selection
1. Full time crop famer	
2. Part time crop farmer	
3. Mixed farming	
4. Crop farmer or nomadic herdsman depending on circumstances	
5. Other	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

3. Please provide your age

1. 20-29
2. 30-39
3. 40-49
4. 50-59
5. 60+

4. Gender

1. Male
2. Female

5. Academic qualification

1. Matric
2.
3.
4.
5.

6. Religion

- 1. Christian
- 2. Muslim
- 3.
- 4.
- 5.

7. Ethnicity

- 1.
- 2.
- 3.
- 4.
- 5.

8. Family size

- 1.
- 2.
- 3.
- 4.
- 5.

9. Your residential address

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10. Length of stay in this area

- 1.
- 2.
- 3.
- 4.
- 5.

3. Please provide a list of the average output /impacts over the years of your crop production activities in terms of the following and how these relate to your expectations.

Types of crops that were cultivated last year	
Annual production volumes	
Annual incomes/profits generated	
Annual employment generated	
Size, ownership and quality of the land cultivated	
Your customers	
Your service providers	
Others	

4. Please provide an account of your relationship with the nomadic herdsmen over the years (business, social, cultural, land use, land ownership, religious, political, ethnic relationship etc)

Please use the two boxes below to provide your general impression on the relations. Tick the correct type of relationship

PEACEFUL

CONFLICTS-BASED

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7. Please indicate what you know about the efforts and impacts (successes and failures) of the government to influence/regulate/change the relations between the crop farmers and the nomadic herdsmen of this area

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8. Please give your own recommendations on what you consider will be the appropriate solutions to the problems you have listed under No. 6 above.

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9. What are your recommendations concerning how the government could better use awareness creation and other programmes to address the relations between the crop farmers and the nomadic herdsmen of this area

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PART 3

1. Your opinions on some important issues linked to the relations between the crop farmers and the nomadic herdsmen

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	disagree	Neither	Agree	Strongly agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
Industrialization holds the future for the development of Greater Kordofan					
Urbanization holds the future for the development of Greater Kordofan					
The government policies for preventing the conflicts between the crop farmers and nomadic herdsmen are not being implemented by the local communities					
Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been					

increasing over the decades					
There are saboteurs working behind the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues.					

THE END

THANK YOU

(3) Questionnaires for the customers of the nomadic herdsmen of Greater Kordofan States

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country. These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

This research is being undertaken to enable you to make practical contributions to the long-term development of the two farming systems. Through your answers, important information can be generated which can be used for positive practical future decision-making. As an academic, my work is to engage people like you for grassroots-based information, which I can use to communicate with the outside world. Knowledge, as we know, is power. The knowledge you make available through my interaction with you can go a long way to improve the future state of affairs of the two farming systems of Greater Kordofan.

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PART 1

Questionnaires for the customers of the nomadic herdsmen of Greater Kordofan State

1. Your name

.....
.....

2. Type of activity

Select ALL that apply

	Make a "✓" against your selection
1. Full time customer of the nomadic herdsmen	
2. Part time customer of the nomadic herdsmen	
3. Middleman for the products of the nomadic herdsmen.	
4. Other	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

3. Please provide your age

1. 20-29
2. 30-39
3. 40-49
4. 50-59
5. 60+

4. Gender

1. Male
2. Female

5. Academic qualification

1. Matric
2.
3.
4.
5.

6. Religion

- 1. Christian
- 2. Muslim
- 3.
- 4.
- 5.

7. Ethnicity

- 1.
- 2.
- 3.
- 4.
- 5.

8. Family size

- 1.
- 2.
- 3.
- 4.
- 5.

9. Your residential address

.....
.....
.....;
.....

10. Length of stay in this area

- 1.
- 2.
- 3.
- 4.

5. Please indicate whether your activities/employment /livelihood are in the formal or informal sector

- 1.
- 2.

PART 3

1. Your opinions on some important issues linked to the relations between the crop farmers and the nomadic herdsmen

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	disagree	Neither	Agree	Strongly Agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
Industrialization holds the future for the development of Greater Kordofan					
Urbanization holds the future for the development of Greater Kordofan					
The government policies for preventing the conflicts of the crop farmers and nomadic herdsmen are not being implemented by the local communities					
Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been increasing over the decades					

There are saboteurs working behind the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues.					

THE END

THANK YOU

(4) Questionnaires for the government officials charged with policy/plan formulation and implementation for peace building between the crop farmers and nomadic herdsmen of The Greater Kordofan states

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country. These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

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PART 1

1. Your name

.....
.....

2. Type of activity/specialization

Select ALL that apply

	Make a "✓" against your selection
1. Your field of expertise/responsibility	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

3. Please provide your age

- 1. 20-29
- 2. 30-39
- 3. 40-49
- 4. 50-59
- 5. 60+

4. Gender

- 1. Male
- 2. Female

5. Academic qualification

- 1. Matric
- 2.
- 3.
- 4.
- 5.

6. Religion

- 1. Christian
- 2. Muslim
- 3.

7. Ethnicity

- 1.
- 2.
- 3.
- 4.
- 5.

8. Family size

- 1.
- 2.
- 3.
- 4.
- 5.

9. Your residential address

.....
.....
.....

10. Length of assignment to your current post /responsibility in this area

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

2. Please provide explanations as to why you have been assigned to perform duties related to the current relations between the crop farmers and nomadic herdsmen in this area

- 1.
- 2.
- 3.
- 4.
- 5.

PART 3

1. Your opinions on the some important issues linked to the relations between the crop farmers and the nomadic herdsmen

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	disagree	Neither	Agree	Strongly Agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
Industrialization holds the future for the development of Greater Kordofan					
Urbanization holds the future for the development of Greater Kordofan					
The government policies for preventing the conflicts of the crop farmers and nomadic herdsmen are not being implemented by the local communities					
Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been					

increasing over the decades					
There are saboteurs working behind the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues.					

THE END

THANK YOU

(5) Questionnaires for the service providers (financial services, transport services, veterinary services, water supply services etc.) for the crop farmers and nomadic herdsmen of Greater Kordofan states

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country. These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

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Questionnaires for the service providers for the crop farmers and the nomadic herdsman in The Greater Kordofan States

PART 1

1. Your name

.....

2. Type of activity/service provided to the nomadic herdsman and the crop farmers of this area

Select ALL that apply

	Make a "✓" against your selection
1. Financial support/loans	
2. Transport services	
3. Veterinary services	
4. Water supply	
5. Market information	
6. Information on criminal activities, violence, conflicts, safety and security	
7. Storage facilities	
8. Other	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

3. Please provide your age

- 1. 20-29
- 2. 30-39
- 3. 40-49
- 4. 50-59
- 5. 60+

4. Gender

- 1. Male
- 2. Female
- 3. other

5. Academic qualification

- 1.
- 2.
- 3.
- 4.
- 5.

6. Religion

- 1. Christian
- 2. Muslim
- 3.
- 4.
- 5.

7. Ethnicity

- 1.
- 2.
- 3.
- 4.
- 5.

8. Family size

- 1.
- 2.
- 3.
- 4.
- 5.

9. Your residential address

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.....

10. Length of stay in this area

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Part 2

1. Please provide a list of the average output /impacts of your activities in terms of the following:

Types of services rendered to the crop farmers and the nomadic herdsmen	
Total number of nomadic herdsmen you are providing services in this area	
Total number of crop farmers benefitting from your operations in this area	
General trend in the number of services that you are offering: increasing or decreasing?	
Number of default cases per year	
Other items of information	

2. Please provide your own account concerning what you see as the nature of the relationships that have developed over the decades between the crop farmers and the nomadic herdsmen of this area

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PART 3

1. Your opinions on some key issues on the relations between the crop farmers and the nomadic herdsmen

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
Industrialization holds the future for the development of Greater Kordofan					
Urbanization holds the future for the development of Greater Kordofan					
The government policies for preventing the conflicts of the crop farmers and nomadic herdsmen are not being implemented by the local communities					
Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been increasing over the decades					

There are saboteurs working behind the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues.					

THE END

THANK YOU

(6) Questionnaires for the customers and middlemen of the crop farmers of Greater Kordofan states

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country. These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

This research is being undertaken to enable you to make practical contributions to the long-term development of the two farming systems. Through your answers, important information can be generated which can be used for positive practical future decision-making. As an academic, my work is to engage people like you for grassroots-based information, which I can use to communicate with the outside world. Knowledge, as we know, is power. The knowledge you make available through my interaction with you can go a long way to improve the future state of affairs of the two farming systems of Greater Kordofan.

It will be highly appreciated if you would allocate some time to answer the questions below. Whatever information given to me will be treated in the strictest confidence, used solely for academic purposes and will not be for public consumption.

Thank you for your co-operation.

Mr Osman Mahdi

Institute for African Renaissance Studies.

University of South Africa

Pretoria.

Email:

Tel

Student number:

August 2015

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Questionnaires for the consumers and middlemen of the crop farmers in Greater Kordofan states

PART 1:

1. Your name

.....

2. Type of activity/ occupation

Select ALL that apply

	Make a "✓" against your selection
1. Consumer	
2. Part time customer	
3. Middleman/trader for the crop farmers	
4. Established business from the raw materials/products of the crop farmers	
5. Other	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

3. Please provide your age

- 1. 20-29
- 2. 30-39
- 3. 40-49
- 4. 50-59
- 5. 60+

4. Gender

- 1. Male
- 2. Female

5. Academic qualification

- 1. Matric
- 2.
- 3.
- 4.
- 5.

6. Religion

- 1. Christian
- 2.
- 3.
- 4.
- 5.

7. Ethnicity

- 1.
- 2.
- 3.
- 4.
- 5.

8. Family size

- 1.
- 2.
- 3.
- 4.
- 5.

9. Your residential address

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10. Length of stay in the area

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

11. Types of products bought from the crop farmers

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Part 3

1. Your opinions on some important issues associated with the relations between the crop farmers and the nomadic herdsmen

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	disagree	Neither	Agree	Strongly agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
Industrialization holds the future for the development of Greater Kordofan					
Urbanization holds the future for the development of Greater Kordofan					
The government policies for preventing the conflicts of the crop farmers and nomadic herdsmen are not being implemented by the local communities					
Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been increasing over the decades					

There are saboteurs working behind the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues.					

THE END

THANK YOU

(7) Questionnaires for the traditional chiefs

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country. These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

This research is being undertaken to enable you to make practical contributions to the long-term development of the two farming systems. Through your answers, important information can be generated which can be used for positive practical future decision-making. As an academic, my work is to engage people like you for grassroots-based information, which I can use to communicate with the outside world. Knowledge, as we know, is power. The knowledge you make available through my interaction with you can go a long way to improve the future state of affairs of the two farming systems of Greater Kordofan.

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PART 1

1. Your name

.....
.....

2. Type of activity/ position/ profession/social standing

Select ALL that apply

	Make a "✓" against your selection
1. Traditional chief	
2. Civil servant	
3. Business	
4. Academic	
5. Religious leader	
6. NGO official	
7. Other	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

3. Please provide your age

1. 20-29
2. 30-39
3. 40-49
4. 50-59
5. 60+

4. Gender

1. Male
2. Female

5. Academic qualification

1. Matric
2.
3.
4.
5.

6. Religion

- 1. Christian
- 2. Muslim
- 3.
- 4.
- 5.

7. Ethnicity

- 1.
- 2.
- 3.
- 4.
- 5.

8. Family size

- 1.
- 2.
- 3.
- 4.
- 5.

9. Your residential address

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10. Length of stay in this area

- 1.
- 2.
- 3.
- 4.
- 5.

PART 2

1. Please provide your own perspective/ views on the way the natural resources of this area are being exploited by the rural communities

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2. Please give your own perspective on what you see as the nature of the relations between culture and the use of the natural resources among the rural communities of this area

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3. It is common knowledge that the crop farmers and nomadic herdsman continue to dominate the livelihoods of the rural communities in this district. How will you describe the current relations between the two?

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4. In view of the answer, you have provided under Question 3, what is your opinion regarding the impacts of the efforts of the government in addressing the relations you have mentioned above?

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5. What do you think is the general trend in the nature of the relations you have mentioned above over the past 10 years? Increasing, decreasing, or other?

- 1. Increasing
- 2. Decreasing
- 3. Other

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6. In view of your answer above, please provide your own account about why you think the above answer is the case

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Part 3

1. Your opinions on some key issues on the relations between the crop farmers and the nomadic herdsmen in this area

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
Industrialization holds the future for the development of Greater Kordofan					
Urbanization holds the future for the development of Greater Kordofan					
The government policies for preventing the conflicts of the crop farmers and nomadic herdsmen are not being implemented by the local communities					
Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been					

increasing over the decades					
There are saboteurs working behind the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues.					

THE END

THANK YOU

(8) Questionnaires for the knowledgeable people

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country. These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

This research is being undertaken to enable you to make practical contributions to the long-term development of the two farming systems. Through your answers, important information can be generated which can be used for positive practical future decision-making. As an academic, my work is to engage people like you for grassroots-based information, which I can use to communicate with the outside world. Knowledge, as we know, is power. The knowledge you make available through my interaction with you can go a long way to improve the future state of affairs of the two farming systems of Greater Kordofan.

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PART 1

11. Your name

.....
.....

12. Type of activity/ position/ profession/social standing

Select ALL that apply

	Make a "✓" against your selection
8. Traditional chief	
9. Civil servant	
10. Business	
11. Academic	
12. Religious leader	
13. NGO official	
14. Other	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

13. Please provide your age

- 6. 20-29
- 7. 30-39
- 8. 40-49
- 9. 50-59
- 10. 60+

14. Gender

- 3. Male
- 4. Female

15. Academic qualification

- 6. Matric
- 7.
- 8.
- 9.
- 10.

16. Religion

- 6. Christian
- 7. Muslim
- 8.
- 9.
- 10.

17. Ethnicity

- 6.
- 7.
- 8.
- 9.
- 10.

18. Family size

- 6.
- 7.
- 8.
- 9.
- 10.

19. Your residential address

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20. Length of stay in this area

- 6.
- 7.
- 8.
- 9.
- 10.
- 11.

PART 2

8. Please provide your own perspective/ views on the way the natural resources of this area are being exploited by the rural communities

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9. Please give your own perspective on what you see as the nature of the relations between culture and the use of the natural resources among the rural communities of this area

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10. It is common knowledge that the crop farmers and nomadic herdsmen continue to dominate the livelihoods of the rural communities in this district. How will you describe the current relations between the two?

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Part 3

2. Your opinions on some key issues on the relations between the crop farmers and the nomadic herdsmen in this area

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
Industrialization holds the future for the development of Greater Kordofan					
Urbanization holds the future for the development of Greater Kordofan					
The government policies for preventing the conflicts of the crop farmers and nomadic herdsmen are not being implemented by the local communities					
Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been					

increasing over the decades					
There are saboteurs working behind the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues.					

THE END

THANK YOU

**(9) Questionnaires for the police and security agencies linked to conflict relations
between the crop farmers and the nomadic herdsmen**

The role of natural resources is increasingly being elevated through various public policies, development plans and programmes to contribute to the development of the country. These developments indicate the increasing awareness that no meaningful development is possible without the contributions from the natural resources of Greater Kordofan, which are being analysed in this project in terms of how the crop and livestock farmers of this region make use of the land as a vital resource or asset. These two farming systems are making major contributions to the development of this region and we appreciate the role you are playing in this endeavour.

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**Questionnaires for the police and security agencies linked to conflict relations
between the crop farmers and the nomadic herdsmen**

PART 1

1. Your name

.....

2. Type of activity

Select ALL that apply

	Make a "✓" against your selection
1. Police officer	
2. Government security staff	
3. Private vigilante member	
4. Other	

BIOGRAPHICAL INFORMATION

(Make a "✓" next to your answers)

3. Please provide your age

- 1. 20-29
- 2. 30-39
- 3. 40-49
- 4. 50-59
- 5. 60+

4. Gender

- 1. Male
- 2. Female

5. Academic qualification

- 1. Matric
- 2.
- 3.
- 4.
- 5.

6. Religion

- 1. Christian
- 2. Muslim
- 3.
- 4.
- 5.

7. Ethnicity

- 1.
- 2.
- 3.
- 4.
- 5.

8. Family size

- 1.
- 2.
- 3.
- 4.
- 5.

9. Your residential address

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10. Length of stay in the area

- 1.
- 2.
- 3.
- 4.
- 5.

PART 2

1. Please provide your own views on the nature of the relations you have observed between the crop farmers and the nomadic herdsmen in this area

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2. Please provide a list of the reasons why you have been assigned to security duties in this area

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3. As a police officer/vigilante member etc., please give your own recommendations on what you consider will constitute effective solutions for addressing the problems you have listed under Question 2 above.

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Part 3

1. Your opinions on some issues linked to the relations between the crop farmers and the nomadic herdsmen in this area.

Indicate the degree to which you agree or disagree with the following statements					
	Strongly Disagree	disagree	Neither	Agree	Strongly agree
Water constitutes a life line in this area					
Aridity is a major threat in this area					
Famine is persistent in this area					
Drought has been increasing in intensity in this area					
Crop production needs to be the basic activity in Greater Kordofan					
Sedentary life style needs to be promoted as the basis for rural livelihood development					
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Crop farming and nomadic activities are by nature complementary					
The conflicts of the crop farmers and nomadic herdsmen have been increasing over the decades					
There are saboteurs working behind					

the scenes to undermine the efforts at building peace of the crop farmers and the nomadic herdsmen					
It is common knowledge that the conflicts of the crop farmers and nomadic herdsmen are largely in South Kordofan					
More education programmes are needed as a tool for preventing the conflicts of the two communities					
The Peace Villages model can help to promote peace of the crop farmers and nomadic herdsmen					
More government action in various forms for promoting peace are needed in this area					
It is common knowledge that political rebel activities are rife in South Kordofan					
Private land ownership is needed to accelerate the pace of rural development in the Greater Kordofan region					
Other issues you would like to discuss on the above questions.					

THE END

THANK YOU