# UNDERSTANDING EMERGENCY RELIEF OPERATIONS: OPERATION LIFELINE SUDAN AND BEYOND

by

Salma Dafalla El Hag Yousif

B.A. in Economics, the American University in Cairo, Egypt, 1995

M.A. in Economics, the American University in Cairo, Egypt, 1999

Submitted to the Graduate Faculty of

The Graduate School of Public and International Affairs in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy

University of Pittsburgh

2011

UNIVERSITY OF PITTSBURGH

GRADUATE SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS

This dissertation was presented

by

Salma Dafalla El Hag Yousif

It was defended on

24 October, 2011

and approved by

Phyllis D. Coontz, Professor, Graduate School of Public and International Affair

Atta H. El-Battahani, Professor, Faculty of Economics and Political Science, University of

Khartoum

Nuno Themudo, Assistant Professor, Graduate School of Public and International Affairs

Thesis Directors/Dissertation Advisors:

Louise K. Comfort, Professor, Graduate School of Public and International Affairs and

Louis A. Picard, Professor, Graduate School of Public and International Affairs

Dr. Louise K. Comfort

Dr. Louis A. Picard

**UNDERSTANDING EMERGENCY RELIEF OPERATIONS:
OPERATION LIFELINE SUDAN AND BEYOND**

Salma Dafalla El Hag Yousif, Ph.D.

University of Pittsburgh, 2011

Abstract

This dissertation examines the problems of coordination and adaptation in integrated relief operations responding to complex humanitarian emergencies (CHE). It is an exploratory case study of the relief operation in Southern Sudan where a CHE has been ongoing since the mid-1980s. The study spans the 20 year-period from 1989 to 2009 with a focus on three points in time - 1989, 1998 and 2009 - when violence and acute food shortage threatened the lives of thousands of people. The study draws on the literature on CHE and coordination during relief operations while its theoretical framework is based on the literature on Organization Theory, Interorganizational Coordination Theory, Complex Adaptive Systems Theory, the Institutional Analysis and Development Framework, Lewin's Force Field Theory and the Science of Networks. The study applies the theoretical framework and uses both descriptive analysis and social network analysis to study the relief operation within its dynamic environment. The descriptive analysis explains the background to the relief operation and enables me to account for the constellation of especial circumstances that led to the emergence of the operation at that specific time. The network analysis enables me to map the structure of the operation and the

relationships among the actors and to understand how coordination takes place. Studying the relief operation at three points in time allows me to understand how the process of adaptation took place and how the operation evolved in response to the changes in its environment.

The findings of the study reveal that the structure of the operation is a horizontal hierarchy characterized by interdependency and strong local connections between the actors which enable them to join their efforts when needed but also to have the ability to act independently. They also reveal that the environment in which a relief operation takes place have a strong impact on the operation while the operation itself impacts that environment. Over the period of 20 years, the structure of the relief operation changed little but its members changed and its scope and focus has also changed in response to changes in its environment.

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# ACKNOWLEDGEMENTS

Thanks and appreciations are due to many people who supported me during the long journey of doctoral studies. I wish to express my deep appreciation and heartfelt gratitude to my dissertation committee for their interest, support and valuable inputs. I would not have reached this stage without the continuous support of the co-chairs of the committee, Dr. Louise Comfort and Dr. Louis Picard. I am particularly indebted to them for their patience through the many years it took me to finish this dissertation and for their guidance and encouragement throughout. Dr. Comfort's seminar on Organization Theory was the highlight of my coursework in GSPIA and provided the foundation on which this dissertation is written. Dr. Comfort's meticulous reading of the many drafts of the dissertation, her guidance and suggestions for improvement throughout the process are very much appreciated. Dr. Picard has been my advisor since I joined the Graduate School of Public and International Affairs (GSPIA) and from him I learned a great deal about international development and its many challenges. I am very thankful to my committee members, Dr. Phyllis Coontz, Dr. NunoThemudo and Dr. Atta El-Battahani, for enduring my long absence and for reading and providing valuable comments on the dissertation on short notice.

I would also like to thank the faculty members at GSPIA from whom I gained much knowledge and wisdom and the staff at Student Services for all the excellent administrative

# 1.0     RESEARCH PROBLEM AND CONTEXT

Protracted intra-state conflicts are a defining feature of the post-Cold War world. Many of these conflicts, coupled with poverty, underdevelopment and acts of nature such as droughts and floods, escalated to what came to be known as complex emergencies - also complex political emergencies and complex humanitarian emergencies (CHE). They are caused by the interplay of multiple factors – social, economic, natural and above all political – and result in human suffering and deprivation, not only for those involved directly in the conflict but also for civilians not directly associated with the conflict. In many CHE, the state is part of the conflict, and in some of them the state has failed and armed groups and militias took over power.

CHE are extreme situations disrupting the societies in which they occur and causing a myriad of problems, making it beyond the ability of individual states to respond to them. This led to the involvement of the international community represented by neighboring states, donor countries, UN organizations, the Red Cross Movement and NGOs which join their efforts to provide relief and assistance to the populations affected by these emergencies. Since the response to a CHE is a collective one that brings many agencies and organizations to work together, the questions of how the agencies involved interact and what forms of multiorganizational structures, whether formal or informal, emerge to coordinate their efforts become very pertinent. The fact that these agencies and organizations have different mandates and agendas, come in

different sizes and capacities, some are governmental while others are non-governmental makes the orchestration of the response a very complex undertaking.

Moreover, many CHEs are very protracted – they take a long time to build up and stay as CHEs long after the specific event to which there has been an international response is over. This has been the case with some of the long-term civil conflicts and intra-state wars such as Sri-Lanka, Congo, Somalia and Southern Sudan. This raises the question of how flexible and adaptable is a CHE response system (or a relief operation) to the changing conditions of the emergency and how the multiorganizational structures responding to CHE evolve over time. Relief operations take place in unsafe, unstable and unpredictable environments. The fluid nature of a protracted CHE and the continuously changing conditions on the ground require that the response system as a whole be flexible and adaptable. For that to happen, the members of the system have to be continuously interacting with each other and with their environment. Studying the relationships and interactions between relief organizations and the other actors, such as the military and political authorities, involved in a CHE response at different points in time will shed light on the adaptability of the system. Considering the multiplicity and diversity of actors responding to a CHE, the complexity and, in many cases, the long duration of these crisis situations, the research seeks to understand the structure of relief operations and address the problems of coordination and adaptation in integrated relief operations responding to CHEs. The focus of the research will be on the specific relief operation that has been taking place in Southern Sudan.

The following section provides an overview of complex emergencies, their origins, how they are defined and why they are a significant problem. Section two will give an account of humanitarian action in response to complex emergencies and discusses the issue of coordination.

Section three presents the research questions and section four presents the significance of the study.

## 1.1    COMPLEX HUMANITARIAN EMERGENCIES

### 1.1.1   Intrastate Wars

Wars and violent conflicts between groups and nations have been a permanent feature of human societies, but the last two decades of the twentieth century witnessed an unprecedented increase in intra-state wars in Africa, Asia and Europe. A number of studies, conducted during the early 1990s and cited by Sarkees, Wayman and Singer (2003, p. 53), show that the period from the end of the Second World War to the 1990s had witnessed a doubling of 'ethno-political conflicts' (Gurr, 1994). During the five years between 1989 and 1993, 90 armed conflicts took place and involved more than one third of the countries in the world (Wallensteen and Axell, 1994).

The characteristic feature of these armed conflicts is that they are primarily 'civil', i.e. fought between different groups belonging to the same multi-ethnic state or as Ake (1997) described them, the conflicts are 'state-centred' and are associated with the use of state power (p.1). Emphasizing the increasing number of intra-state wars as compared to inter-state wars, Yilmaz (2007) mentions that "… from May 1988, when the Cold War was coming to its end, to the present day, there have been 47 conflicts in which the United Nations (UN) intervened and only three of them were inter-state in character" (P. 12). This unprecedented increase in intra-state (or civil) wars, at the time of the end of the Cold War and amidst the hopes that the world

will be more peaceful, has prompted many political scientists and war and peace researchers to study the reasons behind increasing violent conflicts in the world.

Although the end of rivalry between the USA and the ex-USSR was thought to lead to a more peaceful world, the loss of the containment of the Cold War is mentioned as one of the factors behind the increase in violent conflicts in the world (Sarkees, Wayman and Singer, 2003; Sunderland et al., 2008; Yilmaz, 2007; Ake, 1997). The influence that was exercised by the two superpowers on their allies decreased and "… an environment was created in which civil wars and other less organized forms of domestic violence could flourish…." (Soderlund,Briggs, Hilderbrandt, 2008, p. 1). Donini (1996) calls the situation after the end of the Cold War, the 'lifting of inhibitions", the inhibition to wage war and the inhibition to intervene by the international community in sovereign states through the provision of humanitarian aid (p. 7).

Other factors behind the increase in intra-state wars are rivalry between different ethnic groups, identity claims, lack of political representation and increase in power and status by some groups at the expense of others, perceptions of marginalization by minorities, poverty and struggle over resources and national wealth and the desire for self-determination by some groups (Ake, 1997; Albala-Bertrand, 2000; Yilmaz, 2007).

### 1.1.2    From Intra-state wars to CHE

One of the characteristics of intra-state wars is that they impact a large number of non-combatants as compared to inter-state wars. They lead to death in numbers counted in hundreds of thousands and to suffering among large segments of the civilian population, whose means of livelihoods are usually destroyed or severely compromised as a result of the conflict. This leads to internal displacement and movement of affected populations across borders. Coupled with

poverty which is already widespread in many of the conflict countries, the wars escalated to complex humanitarian emergencies (CHE). Reflecting the increasing number of emergencies and their significance, at the end of the 1990s the United Nations University World Institute for Development Economics Research (UNU/WIDER) initiated a project on "the Wave of Emergencies of the Last Decade" to study the causes, extent, predictability and responses to these emergencies (Ake, 1997).

Although the use of the term CHEs among scholars and practitioners is relatively new, many scholars consider that there is nothing new about the concept itself as crises caused by violent conflicts and societal strife have always been there. As Albala-Bertrand (2000c) states, "the unprecedented fact is precisely the sheer numbers of current major emergencies and their long lasting persistence" (p. 6). Capturing the same fact that CHE are not a new phenomenon, Ake (1997) mentions that "humanitarian emergencies are not specific to the contemporary world. They have occurred with uncanny inevitability in every historical epoch. However in this era, they have acquired a singular significance by their incidence, spread and intensity. And also by their poignancy in a post-cold war world which was reasonably expected to be less violent" (p. 1).

According to the United Nations, countries face complex emergencies when they confront "armed conflicts affecting large civilian populations through direct violence, forced displacement and food scarcity, resulting in malnutrition, high morbidity and mortality" (Reliefweb, 2001). Based on these four elements – namely war, disease, hunger and displacement, Vayrynen (2000) developed a typology of CHE which includes 'strong' cases of complex emergencies, 'limited' cases and cases of partial violent crises where only two of the four elements are present (p. 74-75). Table 1-1 shows Vayrynen's typology of CHE in the 1990s.

**Table 1-1: A Typology of Complex Humanitarian Emergencies in the 1990s**

|              | War | Disease | Hunger | Displacement | Type    |
|--------------|-----|---------|--------|--------------|---------|
| Afghanistan  | X   | X       | X      | X            | Strong  |
| Mozambique   | X   | X       | X      | X            | Strong  |
| Angola       | X   | X       | X      | X            | Strong  |
| Somalia      | X   | X       | X      | X            | Strong  |
| Rwanda       | X   | X       | X      | X            | Strong  |
| Liberia      | X   | X       |        | X            | Limited |
| Burundi      | X   | X       |        | X            | Limited |
| Sri Lanka    | X   | X       |        | X            | Limited |
| Sierra Leona | X   | X       |        | X            | Limited |
| Sudan        | X   |         | X      | X            | Limited |
| Ethiopia     |     | X       | X      | X            | Limited |
| Eritrea      |     | X       | X      | X            | Limited |
| Burma        |     | X       | X      | X            | Limited |

Source: Vayrynen, R. (2000, p. 74 -75)

CHE are a significant global problem not only because of their frequency, spread and intensity, but also because of the magnitude of preventable loss of life and the devastating impact they have on whole societies and on the different aspects of life of the population. This is why CHE are defined in terms of their causes as well as their impact and the type of response they receive. The next section discusses the definitions of CHE which shed lights on what they are.

### 1.1.3   What is a CHE

The different definitions of a CHE are closely related and all revolve around three main aspects of the emergency - namely its causes, impact and response. Definitions vary based on which of the three aspects of the emergency are highlighted.

It is agreed among many scholars that the term CHE was first introduced in the late 1980s (Barrow & Jennings, 2001; Donini, 1996; Duffield, 1994). According to Donini (1996), the term seems to have been first used in Mozambique during the end of the 1980s to reflect the uncommon notion at the time that the UN had to negotiate with both the government, which is its

natural counterpart, and simultaneously with the opposition movement/forces to be able to provide assistance to the affected populations. This negotiated assistance falls outside the UN standard agreement with the country by which the UN specialized agencies provide assistance, each within its mandate and area of specialization. According to Calhoun (2008) "whether or not this was the precise origin of the term 'complex humanitarian emergency,' it points to a core theme: the idea that some emergencies have multiple causes, involve multiple actors, and compel an international response" (p. 84) beyond the assistance that is usually provided by the UN and other actors to developing countries under normal conditions.

The term CHEs is used interchangeably with the terms complex emergencies and complex political emergencies to describe crises induced by violent political conflict, but as Albala-Bertrand (2000c) mentions, the term "… is not a well-defined concept, but most authors somehow agree on its fundamental components" (p. 3). Along the same lines, Goodhand & Hulme (1999) state that "the term complex political emergency (CPE) is not an analytical tool, but a descriptive category which provided a shorthand expression for many, often dissimilar, conflicts" (p. 16). They use the term to refer to conflicts which combine the following features: conflict within and across state boundaries; with political origins; protracted duration, involve social cleavages as "the roots of many CPEs lie in relations between enduring identity groups, which do not necessarily correspond with existing nation-state boundaries"; and predatory social formations. These predatory social formations imply that CPEs are often ethno-nationalist in nature, characterized by "a virulent loyalty to one particular social group, accompanied by equally strong feelings of antipathy towards other social groups living within the same state" (Crisp, J. 1995 cited in Goodhand & Hulme, 1999).

In studying and writing about CHEs, many scholars take as their starting point, the definition put forward by the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) which states that a CHE is:

> a humanitarian crisis in a country, region or society where there is total or considerable breakdown of authority resulting from internal or external conflict and which requires an international response that goes beyond the mandate or capacity of any single agency and/or the ongoing United Nations country program. Such emergencies have in particular, a devastating effect on children and women, and call for a complex range of responses (IASC 1994 cited in OCHA, 1999).

Although the definition captures more or less the major components of what makes a CHE, it has come under much scrutiny by many scholars who dissected it to its smallest parts, studied it from different perspectives and linked it to some of the failures of international responses to CHE.

Taking the term Complex Humanitarian Emergency, David Keen (2008) in his book Complex Emergencies avoided the use of the term 'humanitarian' altogether because the word 'humanitarian' implies "… that the solution lies with humanitarian relief … [and] … may prejudge the motives of interveners as altruistic (when they may be much more complicated)" (p.1). Along the same lines, Albala-Bertrand (2000c), in discussing the three words making up the term CHE, mentions that the term humanitarian "… has the connotation of philanthropic, altruist, selfless, which is our case would be highly misleading. Even if there are unselfish elements in all emergency responses, it is safer to assume the opposite, as all emergency can be easily put within a mostly utilitarian framework, especially the response coming bilaterally from abroad" (p. 18-9). Slim, H. (2005) mentions that 'most humanitarian agencies also have other aims than purely humanitarian ones" (p. 16).

Calhoun (2008) in critiquing the concept of a CHE mentions that the term emergency represents as "sudden, unpredictable, and of short term what are commonly gradually

developing, predictable, and enduring clusters of events and interactions". He further states that, the elements that make up a complex emergency - including ethnic conflicts, displacement and refugees, food shortage and infectious diseases are not rare occurrences, as they are "… at least partially predictable and in specific cases may last for years" (p. 86-7). Making the same argument as Calhoun (2008), Goodhand & Hulme (1999) mention that "[Complex Political Emergencies] (CPEs) have enduring features. They are seldom temporary crises after which society returns to 'normal' levels of physical violence" (p. 16). Treating complex emergencies as sudden, short term crises after which the society will resume normal activity is one of the criticisms leveled against the international responses to these crises leading to ineffective outcomes.

The term 'complex' is the phrase CHE refers to both the multi-casual nature of the emergency in the sense that it has been fueled by a number of inter-linked causes and to the 'multi-mandate' nature of the response required to deal with it (Barrow & Jennings, 2001; Ojaba, 2002; Vayreynen, 1996). Albala-Bertrand (2000) states that complexity "…implies sets of interconnected outcomes that are not amenable to simple observations." (p. 2) as well as "… [it] also derives from the response itself, as this may not be fully neutral or may not be perceived as such by the parties in conflict. That is, the emergency response is likely to affect societal behavior and existing institutional frameworks, as it is unlikely to operate fully independent from the conflict itself" (p. 22).

Taking the definition of UN OCHA of the term CHE, Keen (2008) identified two problems: the first one is that of defining a complex emergency in terms of a 'breakdown in authority' and the second one is the statement that a complex emergency "requires an international response that goes beyond the mandate or capacity of any single agency and/or the

ongoing United Nations country program" (p. 2-3).  According to Keen (2008), not all complex emergencies are associated with a breakdown of authority and he gives the examples of Rwanda and Sudan where the state authority had a strong hold in many parts of country during the years of the emergency (p. 2-3). In Sudan, even in areas where the state was unable to impose its authority, the government was still an active part of the conflict and had retained some degree of control of the humanitarian assistance provided by the international community.  In Keen's view, accepting a breakdown in state authority as part of the definition of a complex emergency runs the danger of putting governments off the hook and amounts to endorsing the excuses they make regarding their responsibility towards their citizens. With regards to the second problem, Keen objects to defining the emergency in terms of the required response because of the "potential for muddling up problem and solution….".   He also poses the question "is there really any emergency that can be properly handled by a single agency? (p. 3). Notwithstanding his criticism of the term, Keen (2008) stopped short of proposing an alternative definition.

Other scholars pointed out that the term CHE does not emphasize enough the political nature of the crisis which is the main factor differentiating between a complex emergency and a natural disaster, which can also be multi-causal. Notable among these scholars is Duffield (1994) who unlike Keen, proposes an alternative definition which underscores the political dimension of emergencies. Duffield's definition states:

> complex emergencies are essentially political in nature; they are protracted political crisis resulting from sectarian and predatory indigenous responses to socio-economic stress and marginalization. Unlike natural disasters, complex emergencies have a singular ability to erode or destroy the cultural, civil, political and economic integrity of established societies. They attack social systems and networks. Humanitarian assistance itself can become a target of violence and appropriation by political actors who are organic parts of the crisis.  Complex Emergencies are internal to political and economic structures. They are different from natural disasters and deserve to be understood and responded to as such (p. 4).

Duffield's definition clearly focuses on the political causes and impact of a complex emergency and he acknowledges that humanitarian assistance provided as a response to an emergency can be manipulated by political actors and can play a part in further fueling the conflict. He does not consider the response to an emergency as part of the definition, on the contrary he stresses that the response to a complex emergency has to be rooted in a clear understanding of its causes and the impact it has on the affected population. Approaching a complex emergency in the same manner as a natural disaster will not lead to an effective response to it. Saving lives and dealing with the impact of the emergency in the same way as in a disaster situation is not the ultimate answer as a complex emergency is 'internal to political and economic structures' unlike a natural disaster that hits without discrimination.

An alternative definition, still focusing on the political dimension of the emergency was suggested by Macrae and Zwi (1994). It states that CHEs are "conflict-generated emergencies … [caused by] the breakdown of the state, and its replacement by a political culture which reinforces and condones the use of violence to secure and maintain power" (p.21). In this definition, we encounter the same difficulty as with the UNOCHA definition highlighted by Keen (2008) which is the assumption of a breakdown of the state authority. It is worth noting that many CHEs are caused by fighting between functioning states (as opposed to failed states) and opposition or rebel movements having certain demands or trying to change the regime in place.

Nafziger's (1996) and Vayreynen's (1996), both cited in Albala-Bertrand (2000c), definition of a CHE focuses on the fact that they are social and man-made crises and on their impact in terms of the large number of people affected by the four factors of war and physical violence, disease, hunger and displacement (p. 10-11). Vayreynen (1996), in his definition,

11

makes the important remark that although a large number of people die and suffer during an emergency, there are others who may benefit from it.

Notwithstanding how they are defined and the differences in their magnitudes and durations, yet all CHE entail a response by the international community.

## 1.2    HUMANITARIAN ACTION

The two strategies to respond to a CHE are political action, which attempts to resolve the root causes of the conflict leading to the emergency; and humanitarian action, which has been the principal strategy through which the international community responds to CHE. Slim, H. (2005), defines humanitarian action as consisting of four types of activities: assistance – material help and support; Protection – defense of people's safety and dignity; livelihood – economic support; advocacy – speaking out on behalf of people's needs for all three (p. 7).  Relief operations through which humanitarian action is carried out are often very big and extremely complex involving a large number of actors responding to a wide range of needs and implementing a large number of programs and projects covering the provision of food, water and sanitation, shelter, health and education services as well as other services (ILO 2007, p. 20).

### 1.2.1   Humanitarian Space

Unlike natural disasters, where relief is provided to the victims of the disaster wherever they may happen to be – on the site of the disaster or in areas to which they have taken refuge, one of the

important issues related to the response to a CHE is securing 'humanitarian space' (Minear, 2002; Penny, 2001, p. 5; Van Brabant, 1999 ).

In its glossary of terms, OCHA (2003) uses the term humanitarian space to mean 'humanitarian operating environment' which is a conducive operating environment "in which humanitarian organizations can discharge their responsibilities both effectively and safely" (p. 14 -15). Without securing humanitarian space, either no relief can be provided or its provision will be highly problematic as it becomes conditional on approval of the local authorities which can jeopardize the principles of humanity, neutrality and impartiality that govern the provision of humanitarian aid as per UN General Assembly Resolution 46/182 (19 December 1991). Unfortunately, the concepts of neutrality and impartiality in humanitarian action are not straightforward and can be interpreted differently by different actors. As put by an OCHA senior negotiator in Angola:

> Impartiality and neutrality are not straightforward concepts in practice. Aid agencies or workers may consider themselves neutral because they have no vested interest in the conflict. But if they are engaged in providing aid to a population in a besieged city, the perpetrator of the siege is going to perceive them as being anything but neutral. …. (OCHA, 2002, p. 94).

How humanitarian action is perceived by the host communities not only determine the humanitarian space but also the safety and security of the staff of humanitarian agencies. Slim (2004) mention that in many parts of world – including the Democratic Republic of Congo, Burundi, Iraq and Afghanistan, humanitarian action is challenged, resented and denied and humanitarian workers are targeted (p. 2). Referring to the different perceptions between the two groups, the providers of humanitarian assistance and its recipients, Slim (2004) points out that "the experience of receiving humanitarian action is not the experience of being a humanitarian. It

is a different and more complicated thing than the initially good thing that a humanitarian means it to be" (p. 5).

In such a "highly political and politicized setting" as described by Minear & Smith (2007), humanitarian workers have to be very sensitive to these different perceptions, to safeguard and protect the humanitarian space in which they can operate and at the same time adhere to the principles of neutrality and impartiality (p. 2). This is often very challenging because in CHE, access to people in need has to be negotiated with warring factions and relief assistance and food aid can be manipulated which "impede the channeling of relief to the most needy" (Keen, 2008, p. 126). Under such circumstances, adherence to the principles of neutrality and impartiality becomes more crucial but at the same time more difficult as humanitarian agencies sometimes find themselves making judgments or taking sides, especially those agencies who work in human rights advocacy in addition to working on humanitarian assistance. They have to 'tread a thin line' to ensure their neutrality and impartiality.

## 1.2.2 Humanitarian Diplomacy

Negotiating access to the people in need and securing and safeguarding humanitarian space is the area where the interaction between the political and humanitarian action strategies comes into play. Van Brabant (1999) discusses "… an orchestrated 'humanitarian diplomacy'… [which includes] what do the agencies request and from whom, what negotiation strategy and tactics do they pursue, is collective representation possible.. ?" (p. 20). In explaining the meaning of humanitarian diplomacy, Minear & Smith (2007) explain it

> encompass[es] the activities carried out by humanitarian organizations to obtain the space from political and military authorities within which to function with integrity. These activities comprise such efforts as arranging for the presence of international

humanitarian organizations and personnel in a given country, negotiating access to civilian populations in need of assistance and protection, monitoring assistance programs, promoting respect for international law and norms, supporting indigenous individuals and institutions, and engaging in advocacy at a variety of levels in support of humanitarian objectives (p. 1).

These types of activities, in which agencies are involved during emergency relief operations, are activities which blur the distinction of what is referred to as a political strategy versus a humanitarian assistance strategy which is assumed to be completely apolitical. Negotiating a humanitarian space is where these two strategies interact (Van Brabant, 1999).

Humanitarian Diplomacy is dictated by the environments of CHEs, which are, by definition, politically sensitive and there is no alternative to engaging in negotiations with the political and military authorities on all sides of the conflict. In many CHE, the fighting is not between two groups only but among many factions who fight against the established government as well as among themselves. To secure access to the people in need, humanitarian workers have to negotiate with all groups.

Accordingly, the humanitarian response to a CHE cannot be free from political considerations as they are part of what makes a CHE, and these political considerations work on different levels – the international, regional, national and local level. Agencies and their personnel have to work with caution and with a proper understanding of the underlying causes of the conflict in addition to the broader dynamics impacting on the situation. What is important is also an understanding of the impact of aid and humanitarian assistance on the emergency itself.

### 1.2.3   Criticisms against Humanitarian Action

In spite of all the efforts by the international community to respond as quickly, efficiently and effectively as possible to CHEs, yet the record of the outcomes of relief operations in CHEs is

mixed. Scholars studying the practice of humanitarianism concluded that the two main problems with responses to CHEs are: first, the international community treats complex emergencies as short-term, stand-alone crises after which the society will resume normal activity – in the same manner it treats natural disasters; and second, responses focus solely on the humanitarian aspect (that is saving lives and alleviating suffering) and not enough attention is paid to fostering a political dialogue that might lead to resolving the root causes of the conflict (Duffield, 1994; Goodman & Hulme, 1999; MacFarlane,2000; Natsios 1997; Rieff, 2002).

## 1.2.3.1  Adequacy of Humanitarian Action

Treating CHEs as short term crises resulted in responding to them in the same way as responding to natural disasters without giving enough consideration to the different contexts and to the politically dynamic environment of CHEs. Notwithstanding the interaction that in many cases takes place between natural disasters and politically-induced CHE (Tsui, 2003, p. 35), it is much more challenging to respond to CHEs for a number of reasons.

Unlike natural disasters, CHEs are associated with conflict, political breakdown and social dislocation, and are of longer duration and wider scope than natural disasters (Albala-Bertrand, 2000b; Duffield 1994; Macrae & Zwe, 1994; Tsui, 2003). They are also reflections of much broader global dynamics that make the response much more complicated and politically sensitive. In his analysis of CHE, Calhoun (2008) points out that CHE, such as those in Bosnia, Sudan and Rwanda "… are not simply the results of ancient ethnic hatreds, the permanence of poverty, or the potential for evil lurking in human nature (though each of these has arguably played a part). They are results also of geopolitics and shifting patterns of long-distance trade, colonialism, the end of the cold war, and oil" (p. 85).  These global dynamics and the strategic

16

priorities of the donor countries have their impact on which CHE get more attention than others and which are ignored and become 'forgotten emergencies' (ILO 2007, p. 19).

In the event of a natural disaster, both the host government and the relief agencies involved in the response are more or less on the same side and working together to mitigate the negative impacts of the disaster. However, in CHEs, the status and role of the host government become problematic since, in many cases, the government represents one side of the conflict and is often engaged in open warfare with the opposition forces. This poses a challenge to humanitarian agencies since they have to provide assistance to the affected populations on both sides of the conflict.

As such we find that in CHEs, in addition to the disaster itself, political, security, and bureaucratic considerations and operational constraints that inhibit efficient action among the actors involved are more pronounced than in natural disaster situations (Natsios 1997, p. xx; Tsui 2003, p. 37). Tsui (2003) points out in CHEs, "…, the provision of timely assistance may be as critical [as in natural disasters], but the operating environments are usually more complex and require more tailored response" (p. 36).

### 1.2.3.2 Focus on Humanitarian Action Only

Discussing the focus of the international community on the humanitarian action and ignoring political action that addresses the underlying causes of the emergency, Munslow & Brown (1999) mention that "relief aid has become seen as a policy in its own right, and has become detached from an overall policy to engender peace" (p. 210).

The idea here is not to challenge the primacy and the utmost importance of humanitarian aid as in many cases it represents the line between life and death for those receiving it but to draw attention to the fact that if there are no efforts to look at the root causes of these CHE and

to help in fostering a dialogue to resolve them, they will become a permanent feature of the societies in which they are taking place. As Ogata (2005)[1] puts it "try as we might to protect the refugees and alleviate their suffering, humanitarian action alone could not lead to solving their problems" (p. 317). The argument is that humanitarian assistance should not be the only response to a CHE and it should not replace the political efforts to resolve it.

According to Fiona Terry (cited in Calhoun, 2008), "interventions in complex emergencies are not 'solutions,' because emergencies themselves are not autonomous problems in themselves but the symptoms of other underlying problems" (p. 88). Accordingly, if political and diplomatic efforts are not stepped up to solve the underlying problems, CHEs will persist. As ILO (2007) depicts the situation, "… humanitarian action is often chosen by the international community as a substitute for political intervention. This poses an additional strain on responders, as crises which are essentially political in nature are responded to through humanitarian means" (p. 19). The point is that the international community has relegated its role in resolving conflicts to a lower priority and is focusing mainly on the provision of humanitarian assistance with the result that many CHEs persisted for long periods of time and became normalized.

In discussing the political and humanitarian action in response to CHE, Macrae & Nicholas (2001) discuss the concept of 'coherence' between the two strategies whereby "… closer integration between aid and political responses was seen to be necessary in order to address the root causes of conflict-induced crises and to ensure that aid did not exacerbate political tensions" (p. 290). They conclude that coherence is a flawed approach since humanitarian action became the primary form of political action. As articulated by Munslow and

---

[1] Sadako Ogata was the United Nations High Commissioner for Refugees during the 1990s.

Brown (1999) "It would appear that some Western governments want the end results of peace and development, but do not want to take their share of the responsibility to make it possible" (p. 211).

The above are the two main criticisms against responses to CHE. Although there is no doubt that humanitarian action played a major role in saving lives and sustaining communities whose means of livelihoods have been severely compromised, there are a number of issues that humanitarian actors have to contend with. These are summarized by Leader, 2000 (as cited in Black, 2003) as follows:

> first, are fears that humanitarian action may strengthen 'predatory forces that sustain conflict,'…; there is the concern that humanitarian action undermines and prevents the emergence of a social contract, since it means that factions do not have to be accountable to those they claim to represent. In addition, humanitarian action can present a smokescreen behind which powerful nations may be released from the need to take political or military action in favor of justice. It is seen as market driven, and so, unaccountable, leading to problems in terms of its quality. Finally, prioritizations of issues of access by humanitarians are seen as leading to a downplaying of rights and protection (p. 96).

The next section will discuss one of the important issues related to the response to a CHE – that of coordination between the different actors involved. Coordination plays an important role, not only in the intersection between political and humanitarian action but also in the effectiveness of relief operations.

## 1.2.4   Coordination Experiences

In a study of coordination in Afghanistan, Mozambique and Rwanda, Donini (1996) discussed the different views held by practitioners on coordination. He mentions that for some, coordination constitutes another layer of bureaucracy that slows down the response to an emergency and the provision of humanitarian needs. For others, coordination requires "strong

leadership, clear functional responsibilities, and a 'coordination as management' approach" (p. 12). Donini (1996) summaries coordination situations in three board categories:

> coordination by command … in which strong leadership is accompanied by some sort of authority…; coordination by consensus… in which leadership is essentially a function of the capacity to orchestrate a coherent response and to mobilize the key actors around common objectives and priorities; and coordination by default… [which] involves only the most rudimentary exchange of information and division of labor among actors (p 14).

Donini's (1996) conclusion is that coordination-by-default is not sufficient and there is a need for a coordination entity "to orchestrate the management of the various inputs and programs so that all the actors can fit into a coherent and effective response" (p. 122). In the three cases he examined, the coordination entity has been a UN agency. He also points out the role of the coordination entity in facilitating transition to recovery in the post conflict phase. The importance of information gathering and analysis is stressed in his conclusion as very crucial in understanding the dynamic nature of the emergency and the fast changing events in the country (p. 128). He also stressed the primary role of government in coordination and advises that even in the cases of failed states where there might not be a central government to take the coordination role, humanitarian actors "… should be aware of the need to preserve and nurture local and national coping mechanisms" (p. 16-17).

Sommers (2000) studied coordination experiences in Sierra Leone and Rwanda. He defines coordination as "a multidimensional activity that takes place among a variety of actors at multiple levels across a range of activities. It is a dynamic process, responding to changing political, military, and humanitarian circumstances on the ground" (p.5). He expounds on that saying "coordination is a messy, dynamic, and evolving process; the crises that created the humanitarian emergencies in the first place ensure that this will be true" (p.5).

In this study, Sommers (2000) examined the nature of relationships among humanitarian actors by highlighting the three important coordination functions – strategic planning, resource mobilization and security information management. He focused on coordination among organizations, functions and programs. His conclusions, which fall within the classical, hierarchical view of organizations, highlight the importance of the command element in humanitarian coordination. He concluded that "…. strong authority represented a necessary ingredient in the successful coordination" (p. 108). He also emphasized the role of donor governments in positively influencing coordination. Sommers (2000) pointed out that marginalization of national government from coordination structures by humanitarian actors is one of the shortcomings of the practice of coordination because 'it limits synergies between relief and longer-term development'. Another shortcoming is the overemphasis placed by humanitarian officials on the role of personalities in effective coordination while underemphasizing "the significance of well-structured institutional relationships and clearly delineated coordination systems" (p. x).

Stockton (2002) studied strategic coordination, as opposed to, operational coordination in Afghanistan. In discussing the term coordination in the context of the relief operation in Afghanistan, Stockton mentions that

> 'coordination' is another slippery term. For some, it is simply about the voluntary sharing of information, while for others it is an authoritarian form of control. Confusingly, the term is used as a noun to refer to an outcome as well as a verb to describe a process. For most, it is a positive value-laden term; being 'coordinated' is seen as a desired state of affairs. For others, the word is pejorative, referring to a time-consuming process of pointless meetings and inconsequential discussions, or, as a mechanism for illegitimate control that serves to undermine much cherished agency independence (9-10).

Unlike Donini (1996) and Sommers (2000), Stockton does not accept that effective coordination can only be achieved through command and having in place hierarchical structures

21

and a body vested with the authority to control the coordination process. Stockton brings into attention the financial and political costs of coordination, elements missing from previous studies, as serious challenges to effective coordination. He also differentiates between strategic and operational coordination mentioning that "strategic coordination is concerned with the vertical connections between a single overarching strategy and its subsidiary tactical operations. … In contrast, operational coordination concerns the management of the horizontal linkages between tactical operations, primarily focusing … upon logistics and information exchange" (2002, p. 12). One of the challenges facing operational coordination is that there is no strategic coordination – no agreement on the overarching strategy objective among agencies providing assistance. In line with the previous studies, Stockton highlights the importance of communication in effective communication and the crucial role of the government in coordination.

In a study of humanitarian coordination, commissioned by the UN Office for the Coordination of Humanitarian Affairs (OCHA), Reindorp and Wiles (2001) reviewed the studies of coordination over the last decade and examined in depth the three cases of the Democratic Republic of Congo (DRC), Somalia and Kosovo. They concluded that coordination will only succeed where the context is conducive such as "small numbers of humanitarian agencies, where relationships among agencies have been built over time, and where shared technical expertise facilitates communication and increases focus on how to achieve shared goals rather than agency profile" (p. iv). The importance of a limited number of humanitarian agencies is also highlighted by Sommers (2000, p. 41 & 60). Another three factors that lead to the success of the coordination effort are: 1) the importance of incentives to coordination such as security and access to beneficiaries through collaboration; 2) whether coordination creates value added to the agencies

involved, which, in turn, depends on the competency of leadership and the skills of the staff entrusted with coordination; and 3) making coordination more systematic (Reindrop & Wiles, 2001; Sommers, 2000).

While Reindorp and Wiles (2001) focused on coordination within the UN system only, Rey (2001) examined the challenges of coordination within the UN system in addition to other sets of humanitarian actors such as the European Union (EU), and NGOs. His study revealed that the recurring themes in discussions of coordination among UN, EU, NGOs in addition to governments and donor bodies are: the importance of having a lead agency responsible for coordination tasks; defining common principles; establishing the practice mechanisms for coordination at all levels, devoting resources to coordination; incorporating all humanitarian actors – national and local; and last, setting up mechanisms for information sharing with other actors (p. 116-7). Weiss and Collins (1996), in an earlier study, provided a more general discussion of the challenges facing the humanitarian system. They described the diversity of actors in the humanitarian system and the difficulty of coordinating their actions by discussing the interests of different actors, their resources, and their organizational structures and functions and how these different factors influence their interactions.

All these studies agree that coordination is important because of the changing nature and growing impact of emergencies, the expanding size and complexity of humanitarian operations and the increasing number of diverse actors. Coordination is vital to avoid waste of resources, duplication of effort, and to ensure effective outcome of relief operations.

Even if we accept the conclusion that a command element is essential for coordination, this will create challenges for organizations in the field since many of these organizations are part of larger organizations – with their own chains of command and operating procedures. The

organizations in the field, participating in a response to a complex emergency are accountable and have reporting lines to their headquarters in addition to their accountability to the commanding organization in the field, assuming there is one. This might result in conflict that will make coordination even more challenging.

### 1.2.4.1  Coordination between Hierarchy and Network

The debate is still ongoing between those who see the command and control approach as the most effective coordination option or others who do not agree. Discussing the tension between coordination by command and by consensus Van Brabant (1999) mentions that

> understanding coordination in either/or terms of 'coordination by command' or 'coordination by consensus', with the latter believed to lead to the lowest common denominator, is not totally devoid of realism but also not entirely helpful. Striving for total consensus among a large number of agencies most of whom have no clear policies, is a misplaced objective. More realistically the coordination process seeks to create a 'critical mass' of leading agencies, whose improved analysis and increased effectiveness makes them more influential in the debates and decisions about interventions (p. 13).

A number of recent studies began to conceptualize the coordination problem less in terms of classical hierarchical theory and more in terms of a network of actors (Stephenson, 2006; and Stephenson & Schnitzer, 2006).  According to Stephenson (2006), Minear (2002) discussed the tension between coordination by command and coordination by consensus. In Minear's view, "the solution is not to devise a middle solution but to choose one or the other and work to offset its inherent disadvantages." (p. 34). Stephenson (2006a) disagrees with this position and sees the solution "in devising humanitarian social networks of action that can act effectively without central control or direction" (p. 46).  Stephenson (2006) calls for conceiving the operating environment of humanitarian assistance as an interogranizational social network (p. 41). He clearly indicates that the principal challenge that humanitarian aid organizations face is that of

developing "sustained and sustainable communication ties among actors that are linked most basically by their common interest to develop a capacity to act without imposition of unified control" (p. 47).

### 1.2.4.2 Summary

The studies reviewed above reveal that one of the important factors that facilitate coordination among the different organizations in relief operations is the timely and accurate information gathering, analysis, exchange, and dissemination (Donini, 1996; Reindrop & Wiles, 2001; Stephenson, 2006). They also stress the fact that the rapidly changing conditions of an emergency call for continuous adaptation and a creative response (Donini, 1996; Reindrop & Wiles, 2001; Sommers, 2000). The studies highlighted the different powers wielded by donor and national governments in facilitating or hindering coordination.

The studies show that factors that hinder coordination include disagreement on what it means, the high costs associated with it, the fact that coordination efforts will create another layer of bureaucracy and cause delays at a time when a high premium is put on speed, issues of power and authority among agencies involved and the desire for agency profile, as well as the lack of appropriate structures and of capable leadership (Donini, 1996; Minear, 1992 & 2002; Van Brabant, 1999). Reindorp and Wiles (2001) highlight the structural, institutional and management obstacles to coordination within the UN system and point out that one fundamental problem is the inability of the system to change. They mention that within the UN system, UNOCHA has the mandate to coordinate but no power or authority to tell another UN agency what it should do. There is also the tension between organizations that have the operational experience such as WFP and UNICEF and an organization with a coordination role only such as OCHA.

It can be concluded from these studies that the nature of the problem is systemic. Since the coordination problem is systemic, there is a need to go beyond the analysis of individual organizations and to examine the system as a whole to see how the repeated interactions of the organizations and their patterns of relationships among themselves and with their environment can enhance or hinder coordination and the ability of the system to adapt to changes in the environment.

### 1.3     RESEARCH QUESTIONS

The research proposes to study relief operations as open systems whose parts are continuously interacting among themselves and with their dynamic environment. Taking the specific case of the relief operation in Southern Sudan, where a CHE has been ongoing since the 1980s, the main questions that the research seeks to answer are:

1.     How do agencies involved in a relief operation coordinate their work as revealed by their interactions?

2.     What is the underlying structure of the relief operation?

3.     How does a relief operation evolve over time to adapt to the changing conditions of the emergency? And

4.     How and why do certain institutions emerge and then disappear?

## 1.4 SIGNIFICANCE OF THE STUDY

This research will complement the body of literature aiming at understanding the complexities of relief operations during armed conflicts and the challenges facing them. The current literature on CHE and relief operations is generally either descriptive or evaluative and in many cases, lacks solid theoretical foundations. Previous analysts writing on humanitarian aid did not consider the interrelationships between organizations participating in relief operations as revealed by their actual interactions. Their studies were largely based on interviews, review and analysis of documentary sources and in some cases participatory observation. None of the studies reviewed has utilized social network analysis to empirically study the interrelationships between organizations as well as to map the actual structure of the relief operation based on the interactions between the actors. Furthermore, none of the studies focused on one relief operation over an extended period of time to understand how the operation evolved overtime and adapted to the changes in the dynamic context in which it was taking place. Conceptualizing a relief operation as a complex adaptive system and applying social network analysis to its study will fill this gap, allow for a mapping of the structure of the operation, and lead to a better understanding of how this structure evolved over time. The analysis will be a welcome addition to the literature in the field. Mapping the actual structure of the operation as it emerged from the interactions of the different actors will help in addressing the coordination question and also in informing the design of relief operations in the future.

The research proposes to apply ideas and concepts from Organization Theory, Complexity Theory and the Institutional Analysis and Development Framework and utilizes Social Network Analysis to study the dynamics of relief operations in CHEs. Although some of the recent studies in the field (Stephenson, 2006) explicitly stated that it is time to study

coordination in the humanitarian field as a network, none of these studies examined a relief operation as a network with an identifiable structure and patterns of relationship that are distinguishable from the attributes of the organizations themselves. Analyzing a relief operation as a complex adaptive system and understanding its structure and evolution overtime will be a valuable contribution to the literature on the provision of aid in CHEs

## 2.0    THEORETICAL FRAMEWORK


## 2.1    INTRODUCTION


This study is carried out within a theoretical framework that draws upon a number of theories relevant to the research questions. Since the research problem being studied is multi-faceted, it is important to situate it within a conceptual framework of relevant theories, which will provide "… a kind of intellectual scaffolding that gives a coherent structure to inquiry" (Schlager, 1999 cited in Koontz, 2003, p. 1). The theories relevant to understanding the structure of relief operations in CHEs and their evolution as well as the processes of coordination and adaptation are: Organization Theory, the Theory of Complex Adaptive Systems (CAS); Institutional Analysis and Development (IAD) Framework, and Science of Networks.

As presented in chapter one, the environment of a CHE is very complex, dynamic and unpredictable. It confronts the organizations responding to the emergency with a set of constraints that is impossible for any organization to negotiate and overcome single-handedly. Therefore, working with other organizations is a prerequisite to functioning in such environments but unfortunately it is not a simple task. To understand how organizations responding to a CHE interact and join their effort to achieve their goals, to overcome the constraints presented by their environment and to make the best use of any opportunities that come up, the study conceptualizes these organizations as Complex Adaptive Systems (CAS),

which are open systems in a process of continuous interaction among themselves and with their environments.

Organization Theory and the study of organizations as open systems provide the theoretical foundation against which one can study relief operations in CHE. Complexity Theory and the study of CAS provide useful insights for understanding the characteristics of systems such as relief operations. The IAD framework takes into account the context in which organizations exist and provides a means for understanding the environment and its impact on the patterns of interactions between different actors and the outcomes of these interactions. It sheds light on how and why different institutions come into being and how they evolve.

As a relief operation is made up of multiple independent organizations working together, its structure resembles a network more than a bureaucratic organization. Network Theory will help us better understand the structure and functioning of a relief operation. Social Network Analysis is instrumental in understanding the dynamics of interactions among different entities working in a complex environment and in describing the overall interconnected system of a relief operation in a CHE; in revealing the structure of the system and in identifying the key actors and their connectedness. A theoretical framework that draws upon Organization Theory, Theory of CAS, the IAD Framework and Network Theory together will provide an all-encompassing lens for better understanding the structure of relief operations, how it evolves and the processes of coordination and adaptation.

The chapter is organized as follows: section 2 will provide an overview of Organization Theory; section 3 will present Theories of Interorganizational Coordination; section 4 will cover the Theory of CAS; section 5 will introduce the IAD Framework and section 6 will provide an

overview of Network Theory and the Science of Networks. The last section will present the Theoretical Framework of the study.

## 2.2    ORGANIZATION THEORY

Relief operations, by default, take place in disaster and/or conflict environments characterized by uncertainty, unpredictability and instability. Disaster/conflict environments are the direct contrast to stable environments in which organizations can, to some extent, afford to be hierarchical and function as 'rational systems' as opposed to 'open systems' (Scott, 2003). To understand open systems one has to consider them against rational systems.

### 2.2.1   Rational Systems – the Bureaucratic Organization

As rational systems, organizations are closed systems separate from their environments, with very specific and predetermined goals, highly formalized structures with an identifiable set of participants, clear roles and positions, and strict rules and procedures which guide decision making and behavior towards the achievement goals (Gulick, 1937; Weber, 1946; Wilson, 1887).

The best example of the rational system is the bureaucratic organization, which is an ideal type of organization that does not exist in reality. The building blocks of the bureaucratic organization were outlined by the classical scholars in Organization Theory starting with Adam Smith (1776) who underscored the importance of specialization and division of labor in an organization without giving due attention to how the different parts of the organization interact among themselves and with their environment (Shafritz & Ott, 1996). According to this view,

31

once each member of the organization knows his/her role, tasks will be carried out without need for interactions and communication.

Variants of Smith's ideas were developed in the writings of other classical scholars. Woodrow Wilson (1887) stated that 'The Study of Administration' is concerned with discovering the 'best principles' and the 'simplest arrangements' by which responsibility can be fixed upon officials. Wilson's ideas were given support by the work of Frederick Taylor (1911) "The Principles of Scientific Management" which are based on the principle that there is 'one best way' of getting any task done efficiently and that of Fayol (1916) who stated that the principles of management – unity of command; span of control; centralization and responsibility are universal (Shafritz & Ott, 1996; Shafritz & Hyde 1997).

The most important statement about the bureaucratic organization was made by Weber (1922) who outlined six principles of how an 'ideal-type bureaucracy' is organized. The principles stress the following: work is coordinated through hierarchy, where subordinates follow orders from superiors, jurisdictional areas and levels of graded authority are clearly specified; rules, regulations and laws are stable, exhaustive and can be learned; and communication takes place through written documents (Weber 1946).

The issue of coordination in organizations, which was not considered by the classical theorists so far, found its expression, in Gulick (1937) description of managerial activities common to all organizations, which are planning, organizing, staffing, directing, coordinating, reporting and budgeting (POSDCORB). Although Gulick summarized the main functions of managers and considered coordination as a separate managerial task, yet as pointed out by Moore (1995), Gulick's view is too inward looking and omits an important task that managers have to carry out, which is understanding and shaping their organization's environment.

To sum up, it can be clearly seen that the environment in which an organization exists did not feature in the Classic Theory of Organization. Since as rational systems, organizations were viewed as separate isolated entities with no links between them, we find that scholars believed that once the organization is properly structured and the activities of its members are delineated with clear specialization and division of labor, it will run efficiently. As long as jobs are clearly described and relations are clearly defined, people know their roles within the hierarchy, communication takes place through official channels, and the organization will run smoothly. In the classical view, communication takes place vertically and is viewed as a smooth neutral process of a manager relaying orders to subordinates and subordinates reporting results to the manager. But as time passed and experience accumulated, people came to realize that "… formal bureaucracies, which require hierarchy to coordinate activity, have, because of that structure, significant potential for disaster. Passing inaccurate or unrepresentative information up the line or passing misunderstood information down the line can result in major organizational errors" (Lerner, 1992, p. 24). Furthermore, people came to realize that organizations have never been the isolated islands they were thought to be and they are in a continuous process of interaction and communication with their environment (Luhmann, 1985, 1989).

Even in stable environments of today's world, the Classical Organization Theory does not describe the reality of organizations as no organization is able to survive in isolation from its environment and focus on its internal processes only. This is even more true in disaster/conflict environments which present organizations with a number of challenges rendering their routine standards of operations, strict division of labor and vertical communication channels obsolete. In such an environment, organizations need to be open systems continuously learning, evolving and adapting to the changing nature of the situation.

## 2.2.2   Open System

When organizations are defined as 'open systems' the focus shifts from formal structures to interdependencies between the different parts of the organization and the reciprocal ties that connect the organization to its environment, which includes other organizations.   The environment consists of both the material-resource environment and the institutional environment which covers the human, political, social, and cultural systems that shape the material-resource environment. The environment is key to the survival of the organization since it is the source of energy, information and material that the organization needs to maintain itself (Scott, 2003).

The open system perspective on organizations highlights the diversity and complexity of groups and organizations making up the system as well as the looseness of connections between them, making them loosely coupled systems (Buckley, 1967). In contrast to rational systems, open systems are characterized by their conscious awareness and continuous interaction with the environment which impacts on how they function (Marion, 1999; Scott, 2003).

The interaction between the organization and its environment enables it to achieve its goals, which in the case of an open system are more fluid than in a rational system and are not necessarily pre-determined or commonly held by all members of the organization. More importantly, this interaction includes the exchange of resources that enables the organization to counteract 'entropy' or the loss of energy, which takes place when the system is in a static state (Nicolis and Prigogine 1977; Katz and Kahn 1978; Scott, 2003, p. 89-90). According to Morgan (2006), "closed [rational] systems are entropic in that they have a tendency to deteriorate and run down. Open systems, on the other hand, attempt to sustain themselves by importing energy to try to offset entropic tendencies" (p.40). Exchange of resources is enabled by the fact that as an open

system, organizations are loosely coupled; that is, they contain elements which are weakly connected to other elements in the system. This enables autonomous action which at the same time takes into account what is happening in the external environment (Scott, 2003, p. 88). In defining system openness, Buckley, (1967, p. 50) states: "that a system is *open* means, not simply that it engages in interchanges with the environment, but that this interchange is an *essential factor* underlying the system's viability, its reproductive ability or continuity, and its ability to change." (Cited in Maurer (Ed.), 1971, p. 4)

The open system approach to understanding organizations, in addition to its emphasis on the relationship of the organization to its environment, defines an organization in terms of interrelated subsystems which depicts key patterns and interconnections between different units, groups, and departments within an organization (Morgan, 2006, p. 39). At the interorganizational level, the open system approach focuses "… on understanding the relationships and interactions within and among aggregates of organizations" (Baum and Rowley, 2002, p. 7) As opposed to closed systems, which have very specific and defined boundaries, one of the characteristics of open systems is that it is very difficult to determine their boundaries because they "… are made up of subsystems and are themselves subsumed in larger systems – an arrangement that creates linkages across systems and confounds the attempt to erect clear boundaries around them" (Scott, 2003, p. 90). This is very relevant to the study of relief operations which are part of a global system and the organizations who participate in relief operations are parts of other organizations. As such Scott's description of an open system as subsystems subsumed in larger systems perfectly fits the reality of relief operations.

Given the context of CHE and the nature of humanitarian action, it becomes clear that the open system approach is an appropriate approach to understanding relief operations and the

organizations constituting them. It enables the research to take into account the interaction between participants in the relief operation and their environment and how each shapes the other. Introducing the environment leads us to a discussion of the Theories of Interorganizational Coordination. In the context of relief operations, where the participants are autonomous, independent organizations voluntarily working together with no central authority directing them, the question becomes why do organizations opt to work together? Theories of Interorganizational Coordination, presented in the next section, are efforts by organizational scholars at answering this question.

## 2.3    THEORIES OF INTERORGANIZATIONAL COORDINATION (IOC)

Organizations, whether public, private or nonprofit, work together. Many undertakings in today's world involve the efforts of more than one entity because of the complexity of the tasks, of increased specialization and interdependence among organizations and between them and their environment. Based on the open system approach, a number of theories of Interogranizational Coordination (IOC) were developed to explain why organizations work together. The theories cover a continuum of what is meant by coordination. They range from explaining coordination as the organization's strategic adjustment to its environment, to the recognition of interdependence between organizations and voluntary exchange of resources, and finally to institutional arrangements, power and control where coordination becomes a deliberate intervention which makes participants recognize their interdependence (Alexander, 1995, p. 6 - 7). Three of the IOC theories of relevance to the study of relief operations are Exchange Theory, Transaction Cost Theory and Contingency and Organizational Ecology Theory.

According to Exchange Theory, resource dependence and exchange is the main factor behind interorganizational relationships (Benson, 1975, in Alexander, 1995, p. 7 - 8). There are three types of resource exchanges – voluntary exchanges, exchanges resulting from power dependence, and interactions which are the result of legal-political mandates – themselves the products of prior exchanges of one or the other kind (Raelin, 1992, p. 243-244 cited in Alexander, 1995 p. 8 - 9). Transaction Cost Theory, developed by Roland Coase in 1937, "… explains the emergence of hierarchical organizations in the economic market by the desire of firms to minimize their transaction costs" (Alexander, 1995, p. 12).

Contingency Theory and Organizational Ecology Theory shift the focus from resource dependence and transaction cost calculations to the adaptation of the organization(s) to its (their) environment. Contingency theory focuses on the adaptation of a single organization to its environment through its voluntary adjustment to the decisions and actions of other organizations in that environment. Organizational Ecology focuses on the 'fit' of a number of organizations with their ecology (Alexander, 1995, p. 10; Scott, 2003, p. 105). It also explains that interorganizational coordination is the means through which organizations respond to factors in their environment over which they have no control. As Marion (1999) mentions "environmental uncertainty… is an important force here" that requires flexible organizational structures (p. 84). Environmental factors create interdependence between the different organizations in that environment (Alexander, 1995, p. 11).

Mogan (2006) summarizes some of the underlying ideas of Contingency Theory as follows: "organizations are open systems that need careful management to satisfy and balance internal needs and to adapt to environmental circumstances; there is no best way of organizing. The appropriate form depends on the kind of task or environment with which one is dealing;

[and] … different types or 'species' are needed in different types of environments" (p. 42). Furthermore, he adds that to understand the Organizational Ecology perspective, it is "… necessary to understand that organizations and their environments are engaged in a pattern of co-creation, where each produces the other… Environments then become in some measure always negotiated environments rather than independent external forces." (Morgan, 2006, p. 63)

This insight of external environments becoming *negotiated environments* is particularly relevant to relief operations in CHE, whereby the very presence of a relief operation and the interaction of its participant organizations with the environment impact on that environment. The organic view of organizations as sets of interacting subsystems in a continuous process of adaptation to their environment defines them as CAS. The next section discusses complex adaptive systems.

## 2.4     COMPLEXITY THEORY AND COMPLEX ADAPTIVE SYSTEMS

The last three decades have witnessed many advances in the natural and physical sciences which have great implications on social sciences and organization theory (Begun, 1994; Byrne, 1999; Kiel & Elliot, 1996; Marion, R. 1999). These advances, which include chaos theory, non-linear dynamic systems theory, dissipative structures, self-organization, self-organized criticality, and collectively known as Complexity Science, are all concerned with the study of complex adaptive systems (Bak & Chen, 1991; Kauffman, 1993; Lewin, 1999; Prigogine, et al., 1972; Prigogine, & Stengers, 1984). The main argument shared by all the different perspectives of Complexity Science is that linear, reductionist models that focus on only a part of the system are inadequate to study the behavior of the systems made of many interconnected elements which

are continuously interacting among themselves and with their environments. The linear, reductionist models work best "… for static, homogeneous, equilibrating worlds," but not for dynamic worlds consisting of heterogeneous entities (Miller & Page, 2007, p. 20).

Complex Adaptive Systems (CAS) are defined by their shared characteristics which include a large number of interacting entities whose repeated interactions, both ordered and chaotic, result in emergent properties and new structures. The entities interact, not only among themselves, but with other elements that exist outside their system (MacLean et al., 1999; Morgan, 2006, p. 251). Axelrod and Cohen (1999) define CAS as systems in which an action can lead to unanticipated and unpredictable consequences while Holland (1995) views them as systems composed of many agents described in terms of rules. The agents are in a continuous process of evolution, adaptation and self-organization through the modification of their rules as they learn and accumulate experience. "In CAS, a major part of the environment of any given adaptive agent consists of other adaptive agents, so that a portion of any agent's efforts at adaptation is spent adapting to other adaptive agents" (Holland, 1995, p. 10). This continuous process of change, self-organization and adaptation in both the behavior of CAS and their structure to better fit their environment is what defines them.

The study of complexity aims at understanding the patterns in which the entities in a CAS come together, and the ways in which they interact and adapt to their changing environments and the order that emerges out of these interactions. Emergence, resulting from the interactions of the entities, is one of the important properties of CAS. According to Goldstein (1999), emergence refers to 'the arising of novel and coherent structures, patterns and properties during the process of self-organization in complex systems." (Corning, 2002, p. 7).

CAS are dynamic, non-linear and adaptive, and their patterns are ever-changing as they learn through evolution (Holland, 1995). One of the important characteristics of these systems, is that they are systems with no central control or authority, yet they manage to produce "… robust patterns of organization and activity" and move from a state of chaos towards increasing order (Miller and Page, 2007, p. 7).

According to Kauffman (1993), complex systems adapt their behavior to the environment, and in the process reorganize their own structure to better fit that environment. Kauffman holds that all systems operate on a continuum ranging from chaos to order and that learning and adaptation occurs for systems residing 'at the edge of chaos.' In this specific region, where complex systems have sufficient but flexible structure to hold and exchange information, systems in chaos will self-organize towards order - a spontaneous effort to emerge from randomness (Kauffman, 1993). Self-organization refers to "… the capacity of open and living systems, such as we live in and we ourselves are, to generate their own new forms from inner guidelines rather than imposition of form from outside." (Loye & Eisler, 1987; White et al., 1997 cited in Matthews et al., 1999). It is at the edge of chaos, Kaufman (1993) asserts that connectivity and the flow of information between the different entities increase the capacity of the system for learning, change and self-organization.

Kauffman's (1993) concept of the 'edge of chaos' in biological systems is similar to Prigogine and Stengers' (1984) concept of "dissipative structures" in chemistry. Prigogine coined the phrase, dissipative structures, to explain the behavior of systems moving from equilibrium to far-from-equilibrium conditions. The notion of dissipation usually refers to the system losing its energy, but Prigogine and Stengers (1984) use the phrase dissipative structures "… to emphasize the constructive role of dissipative processes in … [the formation of new

40

dynamic states of matter reflecting the interaction of a given system with its surroundings]" (p. 12). The point that Prigogine and Stengers (1984) are stressing is that systems in states of extreme instability and disorder have the potential, through processes of communication among their different components and with their environment, to emerge from chaos, to self-organize and to experience order in 'far-from-equilibrium states' (p. 13).

Relief operations are characterized by organizational complexity (Duffield, 1994; Anderson & Woodrow, 1998). The fact that in relief work, many interactions take place between different entities highlights the importance of studying not only the attributes of these entities but also the patterns of relationships between them. Luhmann (1985) points out that complexity comprises the two different concepts of elements and relations (p. 100). Making the same point, McCarthy and Gillies (2003) state that complexity, as a system's attribute, "increases as the number and variety of elements and relationships within the system becomes greater, and increases as the level of predictability and understanding of the system as a whole decreases" (p. 72). This depiction fits very well the environments of relief operations in which the increase in the number of elements and the web of their interactions and relationships creates more complexity and where the unpredictability of the environment of a relief operation results in more complexity.

Both the self-organization perspective and the dissipative structures perspective emphasize the inextricable interlinkages and close relationship between the system and its environment. The intertwining of the system and its environment points to the importance of considering both sets of factors, internal to the system and external to it, in attempting to understand how a system performs, learns and evolves (Matthew,1999, p. 448). One way of considering both the internal and external factors is to study CAS within the Institutional

41

Analysis and Development Framework.

## 2.5    INSTITUTIONAL ANALYSIS AND DEVELOPMENT FRAMEWORK

The Institutional Analysis and Development (IAD) Framework gives due attention to the context in which entities "interact to create the institutional arrangements that shape their collective decisions and individual actions" (Andresson, 2006, p. 27). It allows the researcher to go beyond the study of the entities making up the system and their interactions among themselves and with their environments to explore the structure of the system and to systematically study the environment itself and how it impacts the system and at the same time is impacted by it.

The IAD framework is a comprehensive framework that takes into account the system itself, the exogenous factors affecting it, the interaction between the system and the exogenous factors, the outcomes of the interactions and how the outcomes are evaluated. According to Ostrom (2005), the focal unit of analysis in the IAD framework is "… an action arena in which… participants and an action situation interact as they are affected by exogenous variables… and produce outcomes that in turn affect the participants and the action situation" (p. 13). An action situation is defined as the social space where participants interact (Gibson et al. 2005; Koontz, 2003; Ostrom 2005). According to Ostrom (1994, p. 29, cited in Koontz, 2003), the action situation includes the following: "**participants** in **positions** who must decide among diverse **actions** in light of the **information** they possess about how actions are **linked** to potential **outcomes** and the **costs and benefits** assigned to actions and outcomes" (p. 4).

The exogenous variables, or contextual factors, referred to here are the material/physical conditions, attributes of the community in which the action arena is situated and rules. These

factors are significant because they create incentives and constraints that shape the interactions between participants, the actions they choose to take and the benefits, costs and potential outcomes of these actions (Ostrom, 2005, p. 15). The patterns of interactions between participants structure the situations they face (Smajgl, et al., 2009, p. 29) or as Morgan (2006) puts it the environments that the participants face become 'negotiated environments" (p. 63).

One of the important aspects of the IAD framework is that it provides a means to understand how institutions, broadly defined as "… the prescriptions that humans use to organize all forms of repetitive and structured interactions…," emerge and develop (Ostrom, 2005, p. 3). As such the framework is instrumental in understanding the emergence of certain structures and institutions in CAS where repetitive interactions take place between the different entities in the system. Emergence in CAS is a property of the system – as the system elements interact, self-organize and move gradually from chaos to order some properties or structures emerge. In the IAD framework, emergence, in addition to being the result of interaction of the elements within a system (action arena), it is very much influenced by contextual factors such as the community, physical/material environment and rules. Accordingly, analyzing a CAS within the IAD framework gives the added advantage of a systematic analysis of the contextual factors impacting on CAS and their behavior.

Rules are one the three contextual factors impacting on the action arena. The concept of 'rules' is quite general and refers to regulations, instructions, precepts or principles (Black, 1962, cited in Ostrom, 2005). Rules as regulations refer to something "laid down by an authority… as required of certain persons"; rules as instructions "can be thought of as the strategies adopted by participants within ongoing situations" (p. 17); rules as precepts "are part of the generally accepted moral fabric of a community' (Allen, 2005, cited in Ostrom, 2005); and rules as

principles refer to physical laws (Ostrom, 2005, p. 16-17). What is of significance for CAS are not the written rules or those that result from a formal legal procedure, but "the institutional rules [that] are often self-consciously crafted by individuals to change the structure of repetitive situations that they themselves face in an attempt to improve the outcomes that they achieve" (Ostrom, 2005, p. 18). Rules play a major role in shaping the patterns of interactions of the participants and at the same time they are shaped by these interactions.

The above discussion of open systems, CAS and IAD framework shows that the focus of these three theories is on relationships and interactions between diverse participants in a system. Examining relationships and interactions leads us to the Science of Networks.

## 2.6    THE SCIENCE OF NETWORKS AND SOCIAL NETWORK ANALYSIS

Since open systems and CAS are constituted of many interconnected entities and since, within an IAD framework, interactions among participants are a crucial aspect of any action arena, the science of networks and social network analysis are very important in the study of these systems. Before discussing the science of networks, it is important to place the network perspective within the context of how human societies have been organized throughout history. According to Ronfeldt's (1996) article 'Framework about Social Evolution', there are four basic forms of organization of human society: the kinship-based tribe (extended families, clan), the hierarchical institution (army, church, bureaucratic state), the competitive-exchange market (sellers and buyers), and finally the network. As the result of the increasing complexity of societies, network forms of organization as compared to hierarchies and markets are on the rise (p. 2).

44

## 2.6.1 The Science of Networks

The concept of 'network' is open to many interpretations some of them broader than others. Nohria & Eccles (1992) consider all organizations, even the hierarchies and markets, as social networks which exist in an environment made up of other organizations. In contrast to this all-encompassing view of networks, Ronfeldt, D. (1996) use the term network "… to refer to *organizational* networks, mainly the "all channel" design where all members are connected to and can communicate with each other" (p. 4). For Ronfeldt (1996), the organizational networks are distinct from both market and hierarchy. Agranoff, (2006) commenting on the wide use of the term network points out that "a term is required that fits the activity of cooperation or mutual action without being so broad that it encompasses every human connection" and he uses the term 'collaborative networks' to describe mutual action (p. 56). O'Toole (1997), in discussing networks in public administration, describes them as:

> Structures of interdependence involving multiple organizations or parts thereof, where one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement. Networks exhibit some structural stability but extend beyond formally established linkages and policy-legitimated ties. The notion of network excludes mere formal hierarchies and perfect markets, but it includes a very wide range of structures in between. The institutional glue congealing networked ties may include authority bonds, exchange relations, and collations based on common interest, all within a single multiunit structure (p. 45).

O'Toole's (1997) description of the network fits the reality of relief operations in CHE where multiple organizations work together without a central authority. The interdependence of the network is created to a large extent by the nature of the environment in which they operate and over which they have little or no control. Both formal ties and informal linkages exist between organizations in relief operations. Patterns of interaction are more horizontal than vertical and authority is very diffused, compared to hierarchical organizations. Patterns of

interactions lead to the emergence of structures that O'Toole describes as neither formal hierarchies nor perfect markets and which can generally be labeled 'networks'.

Looking at the common characteristics of networks, Baker (1992) identifies four: flexibility, decentralized planning and control, lateral ties among members and integration across formal boundaries of discipline and authority. A network consists of organizations that share information and act together to achieve some common goal. It constrains the actions of its members and at the same time is shaped by these actions. In addition, in a network there is a high degree of integration of people, positions, location, tasks and resources. One of the defining features of a network form of organization is its reliance on information sharing and communication among its members (Nohria & Eccles, 1992; Ronfeldt, 1996). In explaining how the information revolution favors the rise of organizational networks, Ronfeldt (1996) mentions that "it erodes hierarchies, diffuses power, ignores boundaries, and generally compels closed systems to open up" (p. 13). When systems open up they interact with their environment, adapt to changes in that environment and at the same time shape the environment, and generally display the characteristics of complex adaptive systems as they are no more closed rational systems governed by a set of defined rules and procedures.

The Science of Networks helps in understanding complex adaptive systems as it shifts the focus from the attributes of the individual members of the system only to both their attributes and relationships and the characteristics of the system as a whole. The patterns of relationships between the members of a system and their connectedness give rise to the structure and dynamics of the system (Watts, 2003). Watts (2003) points out that interactions in a network generate complexity which might be greater or less than that displayed by the members of the network. This is the main point of departure of the Science of Networks from the more

traditional individualistic approaches where "… individual actors are depicted as making choices and acting without regard to the behavior of other actors" (Knoke & Kuklinski, 1982, p. 9).

In the context of a network, both the actors and their attributes; which are "… those qualities that inherently belong to a unit apart from its relations with other units or the specific context within which it is observed"; and their relations, which are the properties that emerge from the connections or linkages between actors, are important in understanding how networks function (Knoke, & Kuklinski, 1982, p. 9). According to Scott (2000), "relations are not the properties of agents, but of systems of agents; these relations connect pairs of agents into larger relational systems" (p. 3). To understand the structure of any organization or social system, relational data are indispensible as networks are studied by analyzing their relational data, which are based on the ties and connections relating one actor/agent to another (Hanneman, 2001; Jackson, 2008; Scott, 2000; Wasserman & Faust, 1994).

From a network perspective, the members of a system are interdependent rather than independent actors whose connectivity allows them to communicate and exchange resources such as information (Graber, 1992; Nohria and Eccles, 1992; Watts, 2003). Accordingly, in making decisions no actor can afford to ignore the decisions made by other actors. The higher the degree of connectivity between actors, the more they communicate, interact and share resources. Networks have the ability to pass information even when they are loosely connected because they are not evenly connected and have clusters of denser connectivity tied together by sparser connections between these clusters. The positions of actors in a network are very important as they may constitute hubs, i.e. nodes that connect different clusters together and as such facilitate the flow of information between clusters that are not tied otherwise (Graber, 2003; Nohria and Eccles, 1992; Watts, 2003).

## 2.6.2  Social Network Analysis

Social Network Analysis (SNA) can be considered as the application of the Science of Networks. Freeman (2004) describes SNA "… as a structural perspective on relations among actors grounded in systematic empirical data, using graphic imagery and mathematical and computational models."

There are three premises underlying SNA. First, "the structure of relations among actors and the location of individual actors in the network have important behavior, perceptual, and attitudinal consequences both for the individual units and for the system as a whole" (Knoke, & Kuklinski, 1982, p. 13). The second premise is that "structural relations are often more important for understanding observed behaviors …" than the attributes of the individual actors (Knoke & Yang, 2008, p. 4). The third premise is that "structural relations should be viewed as dynamic processes. This principle recognizes that networks are not static structures, but are continually changing through interactions among their constituent people, groups and organizations" (Knoke & Yang, 2008, p. 6). These premises make network analysis an appropriate approach to study organizations functioning in turbulent, rapidly changing and unpredictable environments, where having a less centralized structure makes the organizations and the system as a whole more adaptable. Adaptability means that the structure of the organization and that of the system is not static and is changing all the time to fit with its environment. In such environments, the interactions between the actors give rise to network forms of organization rather than hierarchical ones.

One of the strengths of SNA is that it takes into account both relations that occur between the actors and those that are absent – what is known as 'structural holes' (Burt, 1992). According to Jackson (2008), "a structural hole is a void in the social structure, and in terms of social

networks refers to an absence of connections between groups" (p. 70). The structure of the network is revealed by all ties and relationships, both present and absent. Network structures, as described by Knoke & Kuklinski, (1982), " … vary dramatically in form, from the isolated structure in which no actor is connected to any other actor, to the saturated structure in which every actor is directly linked to every other individual" (p. 12) . Most networks lie somewhere in between these two ends of the spectrum.

## 2.7    THE THEORETICAL FRAMEWORK OF THE STUDY

Based on the theories cited above, the theoretical framework for this study is based on a number of premises. The first premise is that relief operations cannot be studied in isolation of the environments in which they take place and as such they are open systems. The second premise is that the complexity of the context of relief operations, the multiplicity of actors and their varied mandates, resources and organizational structures proscribe the establishment of formal rules and procedures and of fixed division of labor, as such relief operations are organized as networks not as hierarchies. The third premise is that relief operations display all the characteristics of complex adaptive systems and accordingly the best way to study them is through their interactions and relational data. The fourth premise is that the environment in which relief operations take place has a very strong impact on their structure and on how they function and at the same time, the environment is shaped by the actions and interactions of the different members of a relief operation – accordingly, it deserves to be properly analyzed and understood. The fifth premise is that social network analysis is a means to understand the complex behavior of numerous, diverse actors in a dynamic setting.

This theoretical framework allows for studying the relief operation in a CHE as a network of interrelated and interdependent subsystems. The many interactions between the subsystems and the individual members of the operation lead to the emergence of new structures and the evolution of the already existing ones. The new structures are not static and as time passes and conditions change, the system adapts and the structures evolve through the interactions of the members of the operation. In this process of continuous change and adaptation, the environment itself is shaped.

The IAD framework introduces the environment as an exogenous factor impacting on the interactions among the different actors. At the same time, the framework shows that these interactions lead to changes in the environment and specifically in the structures or institutions that govern the interactions themselves. Some new institutions emerge while others, that proved not beneficial or have already served their purpose, may disappear. This is very relevant to the context of relief operations where the structures emerging from the interactions between the different organizations evolve over time.

Complex adaptive system theory informs that through interactions, different organizations and the system as a whole adapt more readily to the environment. The need for adaptation by the different entities making up a relief operation and for creating adaptive systems in response to humanitarian emergencies has been voiced by many practitioners and researchers. Donini (1996) mentioned that the coordination bodies in any crisis

> are aware of and respond to the changing requirements of the humanitarian community as a crisis evolves; structures and mechanisms that were useful at the peak of the crisis will need to be phased out or adapted as their utility decreases and becomes redundant. … The transition process is not necessarily linear: the motto of the coordination entity should be 'adapt or die (p. 126).

I take Donini's statement further and state that the motto of any relief operation and any of its members is 'adapt or die'. Without adaptation, entropy will set in and the organizations and the system as a whole will risk being rundown and eventually disappear.

Against this theoretical framework, the next chapter will present the research design and methodology of the study.

## 3.0    RESEARCH DESIGN AND METHODOLOGY

### 3.1    INTRODUCTION

This research is an exploratory investigation of the multiorganizational relief operation in the protracted CHE in Southern Sudan.  The overall goal of the research is to gain a better understanding of how complex adaptive systems, such as the multiorganizational networks, constituted of a large number of diverse and interacting actors, responding to CHEs  and confronted with a complex and unpredictable environment, are structured and how they evolve and adapt over time.  To achieve this goal, the research will examine the relief operation in Southern Sudan and explore its emergence and adaptation over time. The research will analyze the context in which the relief operation has been taking place, identify the structure of the operation, how interaction and coordination between its members take place, and investigate its relationship with its environment and how the environment impacts the operation and vice versa.

Following on the discussion of CHE provided in Chapter One and the theoretical framework developed in Chapter Two, this chapter reiterates the research questions, presents the propositions to be confirmed or refuted by the research and details the research design and methodology. The methodology section explains both the descriptive analysis and the network analysis and introduces the network measures that will be used in analyzing the network. These

measures will be further elaborated in Chapter Five. The chapter also provides information on the data collection and analysis process.

## 3.2    RESEARCH QUESTIONS

As stated in chapter one, the research questions of this study are as follows:

1.      How do agencies involved in a relief operation coordinate their work as revealed by their interactions?

2.      What is the underlying structure of the relief operation?

3.      How does a relief operation evolve over time to adapt to the changing conditions of the emergency? And

4.      How and why do certain institutions emerge and then disappear?

To answer these questions, the research proposes to conceptualize the relief operation as a complex adaptive system and examine it at different points in time.  The IAD framework provides a means for studying the relief operation in Southern Sudan as an action situation located within other much broader action arenas. Being a sub-system within a larger system with which the relief operation and its members continuously interact has its impact on the structure and process of the relief operation.

In answering the research questions, the research goes beyond the analysis of the different actors and their mutual relationships to an analysis of the aggregate patterns of these relationships. Using social network analysis, the research will examine the repeated interactions of the participating organizations.  Although the actors are numerous and different in many respects, they are bound together by the same set of environmental constraints and opportunities.

By analyzing the structure of the network as a whole and the network position of the different actors and their connectedness, the analysis seeks to explore the social structure of the network and how it impacts the problem of coordination and adaptation. Examining the relief operation at different points in time allows us to see how its structure has evolved to adapt to the changing conditions of the emergency. It also sheds light on why certain institutions emerge and then disappear while others may persist.

## 3.3    PROPOSITIONS

The diverse organizations working in a relief operation function under dynamic and uncertain conditions, face the same set of environmental constraints and opportunities and share the same common goal of providing relief assistance to the war- and famine- affected populations). At the same time, they are separated by their different organizational cultures, mandates, interests, and competition over funds. These two sets of factors represent forces pulling the organizations in different directions – cooperation and coordination of their efforts and non-cooperation and working individually. Working in an insecure and unpredictable environment, organizations realize that they have to transcend their differences, to cooperate and coordinate their efforts in order to achieve their goals.

In line with the conceptual framework, this study is conducted under the following propositions:

1.    The attributes of the individual actors:

    a.    The larger the organization, the more varied the programs and activities in which it is involved, and the more interactions it has with other organizations.

b. The longer the involvement of the organization in the relief effort in Sudan, the more repeated interactions and the better coordination it has with other organizations.

2. The position of the different actors within the network:

a. The higher the frequency of interaction between an actor and other actors, the more central the position of the actor and the bigger the role the actor plays in communication and coordination.

b. The more peripheral the position of an actor, the smaller the role it plays in coordination.

3. The humanitarian actors and their environment are strongly interconnected:

a. The global structure of the operation, has to a large extent, been shaped by the interactions among the different actors at the local level.

b. Interaction between the actors and their environment lead to changes both in the relief operation and in the environment.

4. External factors beyond the control of the organizations have a strong impact on the relief operation.

a. The more stable the security situation and the less the intensity of fighting, the more the organizations are able to carry out their activities.

b. The more cooperative the relationship between the humanitarian agencies and the political and military authorities, the more secure is the humanitarian space.

c. The more restrictions imposed by political and military authorities, the more difficult it becomes for the humanitarian agencies to carry out their work.

5.    The relief operation evolved over time to create a better fit with its environment and the changing conditions of the emergency.

   a.    The focus of the operation and its assistance programs changed overtime.

   b.    The relationship with the political and military authorities changed during the different stages of the operation.

   c.    New organizations with different mandates joined the relief operation reflecting the changing needs of the affected population.

## 3.4    RESEARCH DESIGN

### 3.4.1   Case Selection

The case selected for this study is the relief operation that has been ongoing in Southern Sudan since 1989. Between 1989 and 2005, when the war in Southern Sudan ended, the relief operation was known as Operation Lifeline Sudan (OLS).  Since 2005, OLS as a specific structure ceased to exist but most of its constituent organizations, in addition to other organizations that joined the relief and recovery effort after the signature of the peace agreement, are still working in Southern Sudan under different structures established in the post-conflict era. The case will be studied by focusing on three points in its lifetime 1989, 1998 and 2009. Details about the case and the selection of the specific points in time are provided in Chapter Four.

The case is selected because it is a relief operation taking place in the context of a typical CHE where conflict, poverty, famine and disease led to great human suffering and destruction of livelihoods for large segments of the population. The case also reflects the complexity of the

political situation which the providers of humanitarian assistance have to contend with in many CHEs. The long duration of OLS, its continuation until the peace agreement was signed in 2005 and its eventual disappearance into the new coordination structures provide rich grounds to study the processes of coordination and adaptation of relief operations in a changing context. The case will also shed light on how and why certain institutional structures emerge, evolve overtime and eventually disappear.

Notwithstanding its idiosyncrasies which make it an important case to study, the relief operation in Southern Sudan represents a broader phenomenon of multiorganizational networks of relief operations that has been taking place since the 1980s. Exploring the structure of this particular case and understanding its processes of coordination and adaptation will shed light on the other cases. The relief operation in Southern Sudan, being a forerunner in humanitarian intervention in an active war zone, "… has national, regional and global significance" (Karim, et al., 1996).

### 3.4.2   Unit of Analysis and Unit of Observation

In studying the relief operation in Southern Sudan, this research focuses on the organizations participating in the relief effort and their interactions among themselves and with the external factors in their environment. As such the unit of analysis in this study is the organization participating in the relief effort in Southern Sudan. In this research, an organization is defined as a group of people organized to meet certain needs or to pursue collective goals. This definition takes into consideration both formally established organizations such the UN and international NGOs and informal organizations such as CBOs, community groups and armed groups. Based on this broad definition, the organizations in this study include humanitarian agencies,

government and political authorities, local groups whether community groups or armed groups in addition to neighboring countries and donor countries; as well as multi-member organizations specializing in certain sectors. In short, any collectivity of individuals that is involved with the operation, whether cooperatively or non-cooperatively, is considered an organization. Some of the organizations taking part in the relief operation are involved from a distance and are not physically present where the relief operation is taking place; examples are donor countries and the headquarters of UN agencies and international NGOs.

Organizations are observed through their reported interactions; as such the unit of observation is the interaction between any two or more organizations. Whenever two organizations or more communicate, convene or carry out activities together or are involved in any transaction, this is considered an interaction. The study takes into consideration the documented transactions reported in the situation reports which are the source of relational data for the Social Network Analysis.

### 3.4.3  The Exploratory Case Study

Given the nature of the problem studied, the multi-theoretical conceptual framework of the study and the fact that the research aims at understanding the structure of a complex adaptive system and exploring the processes of coordination and adaptation within this system, a qualitative exploratory case study research design and a quantitative social network analysis, are selected for this study.  An exploratory case study is the appropriate methodology to use in cases where the available literature or the knowledge base is not adequate or when the researcher is using some methodological innovation for the particular problem investigated (Yin, 1998, p. 236).  Social

Network Analysis allows for an empirical examination of the relationships among the actors in the system.

There are several reasons for the selection of this research design. The first is that the study is exploring a complex adaptive system and a linear methodology which looks into cause and effect and reduces the system into independent and dependent variables will not take into account the complex interactions between the multiple parts of the system. In other words, it will look into the parts of the system but not into their interdependencies or the system as a whole while in CAS, the "whole is more than the sum of the parts" as it is *both* the parts and their complex interactions among themselves and with their environments that make up the whole. In a CAS, all variables (actors) have an impact on each other and an action by one of the actors might have ramifications far beyond the direct impact of the action. De Vaus (2001) points out that "case studies are designed to study wholes rather than parts" (p. 231). A research design that takes into consideration the parts (entities making up the system) and their attributes, but disregards their relationships and ensuing interactions which shape the system (the whole) will not adequately address the research questions. The qualitative case study and the social network analysis together will allow for a better understanding of the phenomenon under study.

The second reason for using this research design is that relief operations take place in dynamic contexts, whereby the context has strong impact on the operation while at the same time, the operation plays a role in shaping the context. According to Maxwell (1998), two of the research purposes for which qualitative studies are especially useful are studies aimed at understanding "the particular *context* within which the participants act, and the influence this *context* has on their actions" and "the *processes* by which events and actions take place" (p. 77). Making the same point, Yin (1993) mentions that "A major rationale for using [case studies] is

when your investigation must cover both a particular *phenomenon* and the *context* within which the phenomenon is occurring either because (a) the context is hypothesized to contain important explanatory information about the phenomenon or (b) the boundaries between the phenomenon and the context are not clearly evident" (p. 31). In the case of a humanitarian relief operation, both of these situations apply. The context, which is the CHE, contains important information about the relief operation and the boundaries between the relief operation and its context are not clearly evident given the continuous interactions between the elements from both. The importance of context in studying social phenomena underscores the inadequacy of using a reductionist linear research design that separates part of the reality from its context to study and understand it (Creswell, 1998; Flyvbjerg, 2001; Stake, 2000; Yin 1994).

The third reason for using a qualitative exploratory case study is that the research aims at understanding change and evolution over time. Popping (2000) states that "a qualitative approach is very important when the investigator wants to describe a specific situation, change, or development in a case study" (p. 5). As this research explores the process of adaptation of relief operations by studying the operation at three points in time, the case study approach allows for providing a detailed description of the operation and its environment at these three points in time. Social Network Analysis allows for the mapping of the structure of the operation at the different points in time by quantifying the relationships and interactions between the actors.

The fourth reason is that the questions that this research aims to answer are 'how and why' questions that seek to explore and understand a certain phenomenon. According to Yin (1994), case study design is appropriate for studying how and why questions. Since the objective of this research is to understand and give a detailed account of the circumstances that led to the emergence of the relief operation as a multi-organizational network and its adaptation through

time, the qualitative case study with the wealth of details it provides is the appropriate design to achieve this objective.

One of the very important points to take into consideration in conducting case study research is that it must to be guided by a theoretical framework. De Vaus (2001) mentions that "the problem of any description is where to begin and where to end" (p. 224). The theoretical framework provides the boundaries within which the description is made. The importance of theory in guiding inquiry and in the collection and analysis of information from case studies has been emphasized by many scholars. (De Vaus 2001, p. 221; King, Keohane & Verba, 1994;Yin 1994).

Based on the conceptual framework developed in Chapter Two, the research will examine the relief operation at three points in time focusing both on the relief operation as a complex adaptive system and on its context and how the relief operation interacts with the context using the IAD framework and applying social network analysis methods.

Succinctly summarizing the importance of context and theory in case study research design, Yin points out that "… you would use the case study method because you deliberately wanted to cover contextual conditions – believing that they might be highly pertinent to your phenomenon of study" and that the case study "… benefits from the prior development of theoretical propositions to guide data collection and analysis" (Yin, 1994, 13). The findings of the study will either confirm or refute the propositions made earlier in the chapter.

The case study design focuses on the following: nature of the case, the case's historical background, the physical setting, and other contexts e.g. the political context (Stake, 2000; Yin, 1994). As Stake, (2000) mentions, "within its unique history, the case is a complex entity operating within a number of contexts" (p. 439) which are very important in understanding it.

The exploratory process 'will give a detailed description of the relief operation and its constituent members, how it came into being and how it evolved through time. It will also cover the contextual factors impacting on it. The case is a 'bounded system' (Flood in Fals Borda cited in Stake, 2000, p. 436); it is specific, it has working parts, it is purposive, and it is an integrated system. In case studies, "it is common to recognize that certain features are within the system, within the boundaries of the case, and other features are significant as context" (Stake p. 436).

### 3.4.4 Intrinsic or Instrumental Case Study

The case study design poses a number of issues that need to be examined. One of these questions is what type of case study is it – intrinsic or instrumental. As Stake (2000) puts it, the case can be studied because of its uniqueness, i.e. an intrinsic case study or because it illustrates a broader class of cases, i.e. an instrumental case study.

The case for this study falls within both categories – it is instrumental because it represents a phenomenon that has been in the increase since the 1980s in many parts of the world. Understanding this particular case will shed light on other cases of relief operations in complex emergencies. At the same time, although CHE share common characteristics, each CHE is unique within its own context. Accordingly the relief operation responding to it is unique as well – in terms of its composition, activities, relationships with authorities, structure and the broader political influences affecting it. Yet, there are some commonalties that can be examined, such as the complex environments in which relief operations take place, the relief operations are more or less constituted of the same set of international actors, and are non-hierarchal forms of organization. Stephenson describes international humanitarian assistance as follows, "while constructed anew in each emergency in its particulars, UN humanitarian aid network

interventions are always structurally without a single steersman with operative hierarchical control" (Stephenson, 2004, p. 6).

### 3.4.5 Generalizability (External Validity)

The other important issue related to case studies is their generalizability to other cases. Some scholars criticize the case study research design because it is not possible to generalize from the particular case to a population. Ragin and Becker (1992) stresses the significance of the question of "what is it a case of". His point is that studying a particular case is justified "… only if it serves an understanding of grand issues or explanations". On the other hand, Stake (2000) underscores that a case study design "… draws attention to the question of what specifically can be learned from the single case… [and] designing the study to optimize understanding of the case rather than generalizations beyond" (p. 435-6).

Most of the scholars who advocate the use of the case study make the point that it is possible to generalize from case studies and the most useful generalizations from case studies are analytic and theoretical, not as a sample to populations or universes (Firestone (1993) cited in Matthew & Huberman,1994; Flick et al., 2004; Yin 1994). The insights gained from studying a particular case helps in developing theoretical propositions that can be observed and tested in other cases.

## 3.5    METHODOLOGY

The methodology used in this research is a mixed methodology consisting of both a qualitative descriptive analysis and a quantitative empirical social network analysis. Using mixed methods will allow for a better understanding of the phenomenon under study.

### 3.5.1    Descriptive Analysis

The descriptive analysis will cover the nature of the case, the case's historical background, its setting and the wider context in which it is taking place (Stake, 2000; Yin, 1994). The descriptive analysis will particularly focus on how the relief operation emerged and evolved overtime to adapt to its changing context. In the descriptive analysis, ideas and concepts from the IAD Framework and Lewin's Force Field Theory will be used to untangle the context identifying the exogenous factors, both driving and restraining forces, the action situation and the participants. The analysis will also highlight the role played by rules in shaping the patterns of interactions of the participants leading to the emergence of certain institutions and how these complex interactions may result in changes in the rules that shaped them in the first place. In this analysis, the question of humanitarian space, which is of crucial importance in relief operations, and relations with military and political authorities, will be tackled.

This descriptive analysis is important to understand how the relief operation came into being and how it evolved.  As Flyvbjerg (2001) mentions "case studies often contain a substantial element of narrative. Good narratives typically approach the complexities and contradictions of real life" (p. 84). It is through narrative that the complexities of a relief operation and its context will become clear. The descriptive analysis will be guided by the

64

theoretical framework outlined in chapter 2, which will provide the boundaries of the case and gives direction to which aspects of the environment to focus on.

The descriptive analysis will cover the background to the relief operation including the relief efforts before the establishment of OLS. It will give a detailed account of the conditions that led to the emergence of this particular operation in the continuous relief effort in Southern Sudan which has been ongoing before the establishment of OLS and is continuing after it came to an end. It will cover the critical issues and critical actors in OLS, the environmental factors and the larger organizational setting of which OLS is just a subset. In this analysis, different documentary sources and publications, including UN documents, independent reviews, studies of the operation and news articles will be used.  Triangulating the sources will give as accurate an account of the case as possible, as Stake (2000) mentions "triangulation serves … to clarify meaning by identifying different ways the phenomenon is being seen" (p. 444).

The descriptive analysis will cover three stages of the operation represented by three distinct time periods. The first stage is the initial stage is during the year 1989 when the operation was created and at the time envisioned as a short term quick relief operation to avert the food shortages in Southern Sudan and to provide relief to war affected populations both on the government side and the rebel movement side. The second stage is represented by the year 1998, nine years into the operation when Southern Sudan faced a similar famine like the one it faced in 1989 and led to the establishment of the operation. What is significant about this second stage is that a famine reoccurred in Southern Sudan in the presence of an active relief operation. In addition, there was a de facto division of the country into government held territories and rebel held territories and the focus of the operation was on the rebel-held territories.  The third stage is represented by the year 2009 when OLS as a structure ceased to exist but all most of its

constituent members were still operating within the post conflict coordination structures and in many ways still undertaking the same activities as before, in addition to new activities created by the post-conflict situation.

### 3.5.2 Social Network Analysis

Social Network Analysis (SNA) techniques will be used to examine the interactions between the different organizations participating in the operation. SNA focuses on both the actors and their relationships as such it goes beyond the conventional analysis which focuses only on the actors and their attributes. Another advantage of SNA is that it allows the researcher to examine the data at several levels of analysis with the actors embedded at the lowest level. It allows the analyst to examine "how the individual [or organization] is embedded within a structure and how the structure emerges from the micro-relations between individual parts" (Hanneman, 2001, p. 5-7). The actors (nodes in the terminology of SNA) interact with each other and their relationships are known as links, ties or edges. Networks may be small or large with numerous actors and the actors may have more than one type of relationship with any other actor.

This research will examine the relief operation at three points in time and describe its size, density and structure. Through a network analysis of the interactions of organizations, the patterns of interconnectedness between the different organizations and their positions in the network will be identified. This will reveal who are the key actors in terms of their centrality and prominence which indicates their role in communication and coordination. It will also uncover the structure of the network and how strongly or loosely connected are its different members. Examining the network overtime will show how its structure has evolved over time and whether

key actors remained the same and retained their positions within the network or they have changed.

One of the important issues in conducting network analysis is to determine the boundaries of the network (Hanneman, 2001; Knoke & Kuklinksi, 1982; Scott, 2000; Wasserman and Faust, 1994). In many networks, boundaries are '… imposed or created by the actors themselves… so, in a sense, social network studies often draw boundaries around a population that is known, *a priori*, to be a network" (Hannenman, 2001, p. 5). The network under study has natural boundaries as the organizations participating in the relief organization are known a priori.

### 3.5.3   Network Measures

Different Network measures will be used, including density and measures of centrality whose definitions are given below. The definitions of other network measures used in this study are provided in Chapter Five.

**Density** is a characteristic of the whole network. It describes the overall level of connections among the different organizations in the network and as such it is a measure of 'group cohesion" (Wasserman and Faust, 1994, p. 181). It is a proportion whose value ranges from zero, a totally disconnected network to one, a totally connected network. It is calculated as the number of all ties actually occurring in a network divided by the number of all possible ties.

**Centralization** indicates the overall cohesion or integration of the network around certain organizations (Freeman, 1979; Scott, 2000). It is a measure of the power structure in the group as the more central organizations have more connections with other organizations and accordingly can play a significant role in communication and coordination. At the same time,

having more connections with other organizations give them access to information that less connected organizations will not have.

While centralization is a measure of cohesion of the whole network, centrality measures indicate the links that a specific organization has with other organizations in the network. Three of the centrality measures are:

**Degree centrality** is calculated as the total number of organizations to which a specific organization is connected. A high degree centrality indicates that the organization is well connected within the network. Degree centrality takes into consideration only the direct links between the organization and other organizations rather than the indirect links to all other organizations. It might be the case that an organization is very well connected but only locally since the other organizations to which it is linked are disconnected from the network as a whole (Hanneman, 2001; Scott; 2000). This is why it is important to look at degree centrality together with the other measures of centrality such as closeness centrality and betweenness centrality.

**Closeness centrality** focuses on the geodesic distance (shortest path) between an organization and all others in the network. It is calculated as the sum of the geodesic distances between the focal organization and all other organizations (Hanneman, 2001; Freeman, 1979; Scott, 2000b). An organization with a low sum distance is more central since it is 'close' to a large number of organizations in the network.

**Betweenness centrality** measures the extent to which an organization falls on the geodesic paths between other pairs of organizations in the network. The more times this is the case, the more favorable the position of the organization and the more power and control it has, as other organizations depend on it to reach others in the network (Freeman 1979; Hanneman, 2001; Scott 2000). Betweenness centrality is also referred to as structural holes by Burt (1992),

as both emphasize the importance of the role of intermediaries. A structural hole exists where two points are connected at distance 2, but not at distance one, i.e., through an intermediary (Scott, 2000, p. 87). As Hanneman (2001) puts it, "typically, some actors have lots of connections, others have fewer. Particularly, as populations become larger, not all possible connects are present – there are 'structural holes'" (p. 38). Actors with high betweenness centrality bridge the structural holes in the network.

**Eigenvector centrality** is a measure an organization's influence based on who its neighbors are. An organization is central to the extent that its neighbors are central. Eigenvector centrality is different from degree centrality because it takes into consideration the overall network including both direct and indirect links between the organization and other organizations and it "… weights contacts according to their centralities".   As such, it "… can be seen as a weighted sum of not only direct connections but indirect connections of every length" ((Bonacich, p. 2007, p. 555).

These measures will help me identify the structure of the operation. Calculating them at three points in time will reveal whether how the structure has changed over time. The measures will also allow me to see how connected the actors were, their position in the network, and the availability of pathways between them. This will shed light on how the different organizations interacted and coordinated their relief effort.

### 3.5.4   Data Collection and Analysis

### 3.5.4.1 Data Collection

The data for this research come from documentary sources and archival records covering the three periods at which the relief operation is studied. Documents and archival records are

important sources of data in studying organizations and multiorganizational networks where the focus is more on relationships between the different entities rather than the attributes of the individual entities. Ventresca & Mohr (2002) mention that the increasing importance of the use of archival records as sources of data to be analyzed accompanied the "… the shift away from analytic projects that emphasize organizations as independent objects towards the measurement of relations among objects and inherent connectivity of social organizations" (p. 811). The advantage of using documents and archival records is that they are rich repositories of information on organizational life as they capture events and "… represent forms of social discourse – literally, ways of communicating, producing, and enacting organizational life" (Riles, 2000; Smith (1984) cited in Ventresca & Mohr, 2002, p. 806).

Relational data extracted from documents and archival records are used to identify the structure of the operation, and the ties that link the different entities together, and to describe how the structure evolved through time. Compared to sociometric data used to define relationships, documents and archival records have several advantages. They are inexpensive and in most cases easily accessible, the data are not restricted to a physical respondent who many not be available to provide the information, the data obtained are unbiased by the interests of actors whom interactions are described, and most importantly, "… the data can be used to describe transformations in network structure over enormous periods of time" (Burt, 1983, p. 163).

It is worth noting that at the earlier stage of this research, several attempts have been made to collect network data from the staff members of the organizations involved in the relief operation through a survey questionnaire to capture any information that might be missing from the documentary and archival sources. Unfortunately, the response rate was very low in spite of repeated communications with the potential respondents. Out of 78 survey questionnaires sent

70

out and followed with several reminders, only four completed questionnaires were received. Since this number is too small and using the data from the four completed questionnaires in the analysis will give a very incomplete picture of the network, I decided not to use the survey questionnaire and to obtain the network data from documents and archival records.

Situation reports covering the three stages of the operation are the main source for network data. Situation reports covering the formative period of the operation in 1989 were obtained from the records of the Sudan Open Archive of the Rift Valley Institute. Situation reports covering the year 1998 were obtained from the Reliefweb website, while those covering the 2009 period up to August were obtained from UN OCHA Sudan website.

### 3.5.4.2 Data Analysis

Data Analysis for this research was conducted through several steps. The first step was a review of all the collected documents and archival records to gain general knowledge of the operation and to identify the distinct stages that are covered by this research. This first step of the analysis, guided by the IAD framework, provided the information that is used for the descriptive analysis of the operation presented in the next chapter.

The next step was to conduct content analysis coding to extract the relational data for network analysis from the situation reports covering the three stages of the operation. Three sets of data were created, each covering one of the stages of the operation. The purpose was to identify the actors, sectors and location of the operation at each stage in order to see how they changed or remained the same and how the network evolved over time and adapted to the changing conditions of the emergency. As Burt (1983) mentions in the content analysis of archival records, "the inference … [is] that actors embroiled in the same events are more likely to have relations with one another than actors involved in different events' (p. 163).

71

The content analysis coding of the situation reports aimed at identifying the following:

1. The organizations taking part in the operation as documented in the situation reports.

2. The interactions among these organizations.

3. The sectors in which they interacted (e.g. food provision, health, education, security, transportation … etc.).

4. The locations or geographic areas they covered.

5. The context in which these interactions occurred. The context provided the organizations with challenges and opportunities which impacted on their interactions.

The content analysis of the situation reports was carried out manually and was coded into Microsoft Office Excel 2007 spreadsheets. It went through three rounds of 'cleaning' to make sure that the coding is consistent among the three stages. Each organization was given a system number when it was first mentioned in the situation reports and it carried this number through in the three datasets. In conducting the content analysis, interactions were defined as joint actions in which two or more organizations are involved. If more than two organizations were involved, the interaction was coded more than once to take into account all the involved organizations. If two organizations were involved in an interaction in more than one sector or more than one geographic area, the interaction is coded more than once to take account all the sectors and all the geographic areas. In coding each interaction, there was a distinction between organizations on the basis of whether the organization initiated the action or responded to it, i.e. initiating organization vs. responding organization.

One of the challenges faced when coding the situation reports was that some actions were reported as carried out by NGOs collectively as one entity, without naming the NGOs involved individually. I coded the initiating or responding organization in these cases as "NGOs". At the

same time, other reported actions were carried out by individual NGOs, whose names were provided in the situation reports and in this case, I used the actual names of the NGOs in the coding. Accordingly, the list of organizations in the dataset used in the network analysis includes "NGOs" as on entity as well as the individual NGOs. The term, "NGOs," includes any number of the individual NGOs.

To conduct the network analysis, the coded data was imported into the Organizational Risk Analyzer (ORA) software which is a network analysis tool that detects an organization's structure (Carley et al., 2009). The network measures generated using the three datasets allowed me to identify the overall structure of the network, the positions of key actors, and how the structure and the positions changed and evolved overtime.

## 3.6    SUMMARY

The chapter presented the research design and research methodology. The research design is an exploratory case study while the methodology is a descriptive analysis based on the IAD Framework and Lewin's Force Field Theory and a Social Network Analysis of the relational data of the relief operation at three points in time. The overall research design and methodology is guided by the theoretical framework presented in Chapter Two.

## 4.0    DESCRIPTIVE ANALYSIS OF THE CASE

This chapter will give an overview of the civil war in Sudan and describe the humanitarian relief efforts, of which Operation Lifeline Sudan was the most significant, against the background of the Institutional Analysis and Development Framework and Kurt Lewin's Force-Field Theory and within the context of the international aid system. The first section will introduce the framework for the descriptive analysis. The second section is an overview of the civil war in Sudan and the environmental disasters which led to the CHE to which the international community responded by providing humanitarian assistance. The third section will cover the relief efforts in Sudan starting with the early relief efforts preceding the establishment of OLS, the creation and evolution of OLS, its eventual disappearance after the signing of the peace agreement in 2005, and the humanitarian situation and response as of 2009 in Southern Sudan. It will highlight the complex environment in which the relief operation came into existence and how the operation evolved and adapted to the changing conditions of the emergency. The fifth section will provide an overview of the humanitarian situation and the response as of 2009 in Southern Sudan. The chapter will be concluded in the fourth section.

## 4.1 FRAMEWORK FOR THE DESCRIPTIVE ANALYSIS

### 4.1.1 Institutional Analysis and Development (IAD) Framework

The descriptive analysis in this chapter is guided by the IAD framework as presented in Chapter Two. The IAD framework, which incorporates a number of institutional and organizational factors, enables me to describe the relief operation at different levels of analysis and to account for both factors endogenous to the operation and factors exogenous to it that impacted it. Based on the framework, I describe the relief operation as a nested set within a larger set of relief efforts taking place in Sudan since the mid-1980s and being continuously influenced by the local conditions of the emergency in addition to global developments. Even the larger set of relief efforts within Sudan is also a sub-set of an international aid system, which has been in existence for a long time, but has changed significantly with the end of the Cold War. Once of the manifestations of this change is the establishment of large relief operations in active war zones (Duffield, 2000, p. 112).

### 4.1.2 Lewin's Force Field Theory

The description is also based on Lewin's Force Field Theory whereby the driving forces and the restraining forces impacting the relief operation will be analyzed. As Kurt Lewin wrote "an issue is held in balance by the interaction of two opposing sets of forces - those seeking to promote change (driving forces) and those attempting to maintain the status quo (restraining forces)" (Accel-Team, 2009). For Operation Lifeline Sudan, the fact that it continued for such a long time beyond its early envisioned three months duration means that the restraining forces

which maintained the status quo (continuous relief effort) are much stronger than the driving factors, which attempted to change the situation by addressing the causes of the emergency that created the need for humanitarian assistance in the first place. The restraining forces can be summarized in the continuation of the state of emergency and the dire need for relief assistance, the interests of different stakeholders, including relief agencies attracting money from donors, donors avoiding political intervention through a continuous humanitarian effort, and different warring factions benefiting from the relief assistance and finding that the population is provided with basic needs while they can continue their fight. The driving forces can be summarized in efforts to find a political solution and end the conflict and the long-term interests of the beneficiaries which will be better served by peace and development instead of a continuous relief effort. The fact that Southern Sudan is still in need of humanitarian assistance, although it is in a post-conflict era after the signature of the Comprehensive Peace Agreement in 2005 attests to the strength of the restraining forces (IRIN, 2009).

### 4.1.3   Interaction between IAD Framework and Lewin's Force Field Theory

The combination of the IAD Framework and Lewin's Force Field Theory enables us to understand, within the wider international aid system and within the relief effort in Sudan, "… why and how some policies, rules, norms, practices, procedures, and processes at different levels of action are institutionalized and why others are not…" (Imperial, 2005, p. 207-8 quoted in Hardy & Koontz, 2009, p. 394). The fact that some policies, norms, and practices continue and become institutionalized while others demise means that there are different forces pushing towards the continuation and institutionalization of the first and working against the continuation and institutionalization of the second. The importance of rules, both formal and informal, in the

context of relief operations in general, stems from the fact that they dictate to organizations participating in the international relief system which emergencies to respond to, what actions to take, what types of resources will be made available, who can participate, what support they can get or what constraints they may face? (Imperial, 2005, p. 307-8 quoted in Hardy & Koontz, 2009, p. 395). Rules can be considered as driving and restraining forces, which, in interaction, can either maintain or change the status quo.

When a relief operation is viewed through the lens of the IAD framework and Lewin's Force-Field Theory, it is a collection of actors who take actions in an "action arena" and whose actions are governed by a set of rules which can drive the actors in opposing directions. Actors continue to interact and their actions either drive towards a certain situation or restrain away from it. This dynamic will continue until an equilibrium is reached, when either the driving forces or the restraining forces are powerful enough to overcome the other. In the case of the relief operation in Sudan, there are rules that led to the creation of Operation Lifeline Sudan in 1989, rules for joining it, rules on how the operation as a whole functions, rules that led to its continuation (against those that would have shortened its lifespan), rules that shaped its activities (types of sectors in which relief agencies work, the interactions of relief agencies with each other and with warring factions etc.) and rules that finally led to its eventual demise in 2005 and its replacement with alternative structures suitable for the post-conflict era. During the period of organized relief effort in Sudan in war time, from 1989 to 2005, the driving forces that looked beyond the relief efforts and attempt to find a long term solution to the conflict and to end the state of emergency were weaker than the restraining forces maintaining the status quo, continuation of the state of emergency and the relief operation. Although a peace agreement has been signed and the relief operation as it was known has come to an end with the focus on

77

recovery and post-conflict reconstruction, yet the emergency, caused by tribal conflicts and environmental factors, is still in place, requiring large scale relief effort.

### 4.1.4   The International Aid System

The International Aid System has both a supply side and a demand side. The supply side is represented by donor countries and the international aid organizations which provide both humanitarian aid and development aid. The demand side is represented by the developing countries whether those in conflict or battling with poverty and attempting to provide a better standard of living for their citizens. The origins of the aid system goes back to the establishment of the ICRC in 1876 (ICRC, 2009), and then the relief efforts in Europe after the First and Second World Wars where, with the Marshal Plan, huge sums of money were pumped from the US into the European Economies to recover from the impact of the War. During the early 1980s, with the open market economies and the policies of Reagan and Thatcher and the belief in small governments, aid, which used to be provided directly to governments, was increasingly channeled through NGOs and civil society organizations at the expense of governments. Accordingly, the role of non-state entities such as UN organizations and NGOs, both national and international, expanded significantly since the 1980s both in conflict situations where humanitarian assistance is provided and also in normal conditions where development aid is provided.

With regard to humanitarian assistance during conflict, and notwithstanding its long history, its nature and structure changed with the change of the international order at the end of the Cold War. As Duffield (2000) mentions many factors including the growth of NGOs, the largely deregulated aid market, attempts at greater coordination within the UN system, together

"have produced large integrated relief operations in situations of on-going conflicts" (p. 112). The integrated relief operations replaced the earlier scattered relief efforts by individual agencies. The different parts of these integrated operations are connected through layers of linkages at different levels, for example, between the suppliers of aid, there are linkages between donor countries, UN agencies, between the NGOs belonging to the same country, between the federations (confederations) of NGOs such as the OXFAM, CARE International, Save the Children and World Vision International (Webster & Walker, 2009). As such the structure of the international aid system is not a hierarchical or a linear structure, but more of a complex system composed of numerous actors, which form their own sub-structures connected with each other through a multiplicity of linkages and forming parts of the superstructure – which is the international aid system.  According to Duffield (2000), "due to the linkages, networks and cross-cutting ties within such structures, together with their strategic nature, they are a good example of the move from government to the networks of governance that characterize globalization" (p. 112). Since the international aid system is not a hierarchical system with a clear chain of command and governed by a clear set of rules, this creates room for different driving and restraining forces to impact on the system and the relief operations that form part of it.

The essence of the idea of a network is that it defies centralized decision making. Despite the fact that the different actors are part of a large superstructure, yet they are independent decision makers and they are accountable to different constituencies and accordingly are governed by different sets of rules and norms and different agendas and interests. Although they are independent entities when it comes to decision making, yet they are interdependent and need each other so that the international aid system can function. Describing the structure of the aid

system, Duffield (2000) mentions "the organizational structure of the present aid system contains a wide range of decision making networks, some of which are in competition. It is also characterized by entropy. That is, the increasing difficulty of reaching and enforcing collective decisions" (p. 112). Within the overall superstructure (the international aid system), some actors are more powerful than others because of the resources they possess, whether economic resources or political leverage. These actors are mainly donors from the rich industrialized countries and the large coordinating bodies such as the UN. Duffield (2000) describes these strong actors as the 'prime movers within the aid system' (p. 112). These prime movers are one of the powerful forces behind the creation and growth of relief operations. Although the dire situation of citizens suffering during CHE calls for a relief effort, if the prime movers are not interested, then the relief effort will not take place. Without donor resources, the good willing NGOs and relief workers will not have much to offer, especially in the context of large integrated relief operations.

An understanding of this international aid system is important to understand the response to any emergency. In addition to the humanitarian imperative which the drive behind relief operations, there are the different interests of the respondents to an emergency that have to be taken into account. These interests, in many situations, act as the restraining force against the change of the status quo and lead to the continuation of relief operations even at times when there are driving forces calling for moving beyond the mere provision of relief assistance and lifesaving aid and trying to find long term solutions to the emergencies.

The demand side for aid is represented by the developing countries and their citizens, particularly those suffering during emergencies. Although the demand side is significant, yet it is not the most powerful driving force. The is proven by the case of what is referred to as

"forgotten emergencies" where there is human suffering and a real need for humanitarian assistance, yet the situation is ignored or at least not given the same weight and importance as similar situations in other areas of the world. The statistics of aid to different emergencies in the world attest to this fact. The case of forgotten emergencies is where the interests of the powerful players, the prime movers of the system, and how these interests govern the system becomes very apparent (ILO, 2007, p. 19). As Brusset (2000) mentions describing the case of Sudan, but can be broadly applied, the research "… for different donors, at different times and for different reasons, aid has been used both to reduce and to intensify the conflict. This is despite the fact that the avowed objective of all actors in the conflict (whether aid donors or not) was to promote a lasting peace" (p. 131).

Within the international aid system – humanitarian assistance came to take central stage even at the expense of development aid. No one can argue with its noble objective of saving lives and reducing suffering, but as Loane (2000) mentions **"**one of the problems of humanitarian assistance is the failure to recognize and understand the relationship between humanitarian assistance, politics and aid. This failure leads to undermining either the humanitarian or the political response on their own right" (p. 18). Failure to understand this relationship or a conscious decision by the providers of aid to ignore it led in many situations to the prolonging of emergency situations and the negative impacts of aid widely documented in the literature, such as prolonging of conflict, aid dependency, and abuse of aid by warring factor.

## 4.2    THE ACTION ARENA – THE COMPLEX HUMANITARIAN EMERGENCY IN

## SUDAN

The complex humanitarian emergency is Sudan was caused by violent conflict that has been raging in Southern Sudan since the mid-1950s. In spite of the long duration of the war, the environmental disasters that hit the country such as the drought of 1984 and 1985 and the early relief efforts, it was only in 1989 that a major coordinated relief operation has taken place after an agreement was reached among the two warring factions and the UN to allow relief aid to reach the affected population on both sides of the conflict.

### 4.2.1    CONFLICT IN SUDAN

#### 4.2.1.1    Dynamics of Conflict in Sudan

Sudan, the largest country in Africa, was the first African country to gain its independence from British colonial rule after the Second World War and it was also the first to experience a civil war (Johnson, 2003, p. 21). Sudan is the home to nearly 600 ethnic groups, belonging to 50 major ethnic groups speaking more than 100 languages (Deng and Minear, 1992, p. 12; Metz (Ed), 1991). Sudan's ethnic diversity coupled with its history, especially under British colonial rule and its policy of closed areas in Southern Sudan in 1922, in addition to the differential developmental policies in the Northern and Southern parts of the country, led the creation of a rift in the North-South relationship. Broadly speaking, Sudan is viewed as being divided into a Muslim Arab North and a Christian African South, although in reality the division is not so clear cut, as neither is the North completely Arab and Muslim nor is the South completely Christian. This general dichotomy – which also reflects Sudan's unique location as

the 'gateway' between sub-Saharan Africa and the Arab World – coupled with Sudan's history came to reflect a clear divide between the North and the South. It also came to denote differential economic and political power (between a politically powerful and wealthy north and a politically underrepresented and underdeveloped South). This resulted in the marginalization of the South described by Tipo (2009) as "a process when certain communities are deprived of the basic rights in terms of development, economic and political power in their country."

This dichotomy, according to Sidahmed (2008) is "… an oversimplification of a very complex situation in historical, socio-economic, and political terms. Sudanese society is characterized by multiple regional disparities as well as multiple ethno-religious and cultural identities, at times converging, and at others diverging along these fault lines." (p. 73)   The dichotomy, which depicts the north as politically powerful and wealthy and the South are underrepresented and underdeveloped, is not completely true and it misrepresents the situation in Sudan.   As Sidahmed (2008) mentions, the current conflict in Darfur between the central government and the rebel groups defies this dichotomy and reflects "… the complexity of the Sudanese situation and its political dynamics." (p. 73)   To the conflict in Darfur, can be added the low-impact conflict that has been taking place in Eastern Sudan because of political marginalization and lack of economic and social development until 2006 when the Eastern Sudan Peace Agreement was signed. These conflicts in the East and West, which geographically, belong to the northern part of the country, clearly reveal that underdevelopment and underrepresentation are  not along ethnic and religious lines, as the East is predominantly Arab and both the East and West are predominantly Muslim. Accordingly, the North-South conflict is more a result of economic and political disparities between a powerful center and a marginalized periphery. Colonial powers played a significant role in creating the disparity in the first place and

the successive national governments that took over power after independence did not do enough to address the wealth and power disparities between the center and the different regions, and in particular the southern region.

### 4.2.1.2  Sudan First and Second Civil Wars

The violent conflict in Southern Sudan, which began with a mutiny of the military corps in the Southern town of Torit in August 1955, four months before Sudan's independence on 1st January 1956, has been going on intermittently until the Comprehensive Peace Agreement between the Sudan Government and the rebel Movement, Sudan People's Liberation Movement/Army (SPLM/A) was signed in 2005. Although the conflict began in the middle of the last century, yet its origins go back in history to the nineteenth century with the Turko-Egyptian conquest of Sudan. According to Johnson (2000), "it was during this time that patterns of economic exploitation were established, and a religious division was introduced, which interlocked with the distribution of political, economic and social rights and contributed to the evolution of civil conflict as a form of expression" (p. 45). It was in the 1920s, during British-Egyptian Condominium Rule of Sudan, that the British introduced the 'Closed Areas Act' which separated the North from the South and resulted in an uneven development between the two parts of the country. According to Deng and Minear (1993), the British separatist policy "… kept Arab-Islamic influence out of the South and preserved the people [of the South] in their indigenous state, without any development, except for the modest 'civilizing' influence of the Christian missions" (p. 16). It was only in the 1947 Juba Conference, that the Northern and Southern parts of the country were brought together again after more than 20 years of separate

84

administration and separate development (Johnson, 2003, p. 25). As such the seeds of conflict had already been sown.

The long armed conflict is divided into two main periods. The First Civil War from 1955 to 1973, when the Addis Ababa Agreement was signed and resulted in a ten-year period of peace and relative development in Southern Sudan (Johnson 2003, p. 39; Sidahmed, 2008, p. 79). The Agreement resolved the security and political questions and resulted in the formation of the Southern Regional Government (Johnson, 2003, p. 39). In spite of the fact that during the ten-year period of peace from 1973 – 1983, some developments took place in Southern Sudan, both politically and economically, yet issues of economic development, oil, and borders became very contentious and resulted in the eruption of fighting again in 1983, ushering Sudan into the Second Civil War from 1983 to 2005.

The Second Civil War between the Government of Sudan and the People's Liberation Movement/Army (SPLM/A) ended in 2005, but the South continues to be in a state of complex humanitarian emergency requiring humanitarian intervention because of inter-clan and inter-tribal conflicts and attacks by the Lord Resistance Army[2] which claim the lives of hundreds of people and destroy people's means of livelihoods. In August 14, 2009, the UN Deputy Resident Coordinator in Sudan reported that "since January of … [2009], more than two thousand people in Southern Sudan have been killed as a result of inter-tribal conflict and a quarter of a million people … have been displaced across the ten states [of Southern Sudan]" (Sudan Watch, 2009). In spite of the fact that Southern Sudan is considered to be in a post-conflict state where recovery

---

[2] Ugandan Group formed in 1987 and engaged in an armed rebellion against the Ugandan Government. The LRA operated in northern Uganda but also in Southern Sudan and the Democratic Republic of Congo.
http://en.wikipedia.org/wiki/Lord's_Resistance_Army and
http://www.globalsecurity.org/military/world/para/lra.htm

and rehabilitation efforts in addition to institution building initiatives are taking place, yet it is still in a complex humanitarian emergency situation where violence, hunger, disease and displacement still affect considerable numbers of the population (IRIN, 2009).

The root causes of the two conflicts are multi-faceted and complex. Although authors writing about Sudan civil wars agree on the complexity of the factors behind the wars, they focus on different factors as root causes of the conflict. Rolandsen (2005) mentions that "some stress the radically different cultures and identities of the North and the South, while others emphasize the long history of marginalization and exploitation of Southerners within successive Sudanese state structures. … Northern Sudanese scholars tend to present a somewhat similar version, but here the source of conflict is the colonial intervention which, through its separation policy, hindered the development of a unified state" (p. 15-16). Generally, it is agreed that the causes of conflict include historical, socio-economic and political aspects that go back to the British colonial policy in Sudan, development disparities between the North and the South, and mobilization of political support along ethnic lines (Ahmed, 2008; Johnson, 2003). In the early 1980s, additional factors such as "the discovery of oil in South Sudan; the division of the South into three smaller regions; and the incorporation of aspects of Islamic Shari'a laws in Sudan's criminal justice system" fueled the conflict which has been dormant for a period of 10 years (Verney, et al. cited in Sidahmed, 2008, p. 79).

The impact of the Second Civil War, which like the first civil war was fought in Southern Sudan, was huge in terms of the human toll, the destruction of infrastructure and the disruption of livelihood activities in addition to straining the country's economy. It led to massive internal displacement of the people of Southern Sudan to the Northern part of the country and large

numbers of people fleeing the war zones and settling in neighboring countries as refugees (Ahmed, 2008; Johnson, 2003; Verney, et al. cited in Sidahmed, 2008, p. 82).

### 4.2.2 The Actors

During the two civil wars, the two main actors were the Central Government in Khartoum and a number of rebel groups formed from different tribes in Southern Sudan. The rebel groups were not one homogenous or invariant group as they had come together and had split many times during the war along tribal lines or along different viewpoints and ideologies (Johnson, 2003; Rolandsen, 2005). The second civil war was complicated by what Johnson (2003) refers to as 'multiple civil wars' whereby "multiple local grievances have created numerous motives for armed confrontations, and shifting alliances within the wider conflict produced a pattern of interlocking civil wars, … being fought on different levels" (p. 127). In addition to these front-line actors, there were many other actors behind them supplying them with resources and arms. Although on the face of it, the war is between a disenfranchised and marginalized group against a dominant group, yet at the time, it was also a reflection of more broader and global issues such as The Cold War confrontations between the United States of America and the then USSR. Each of the two superpowers, in pursuit of their national interest and global dominance, supported warring parties in many internal conflicts around and world and Sudan was no exception. It is noteworthy that the civil wars in Sudan continued, except for the period of 1973-1983 following the signing of Addis Ababa Agreement, in spite of the several regime changes in Sudan from military to democratically elected government and vice versa. This testifies to the fact that the successive governments failed to address the root causes of the conflict. In addition, it also gives credence to the more global dimension of the war.

87

Another important group of actors, which played a significant role in the conflict, was the neighboring countries which gave refugee to the rebel groups and supported them with arms and resources. This can be seen clearly when neighboring Ethiopia with its communist regime provided support to southern rebel groups including the SPLM/A during the early years of the rebellion (Rolandsen, 2005, p. 26). With the end of the communist regime in Ethiopia and the improvement in the relationship between Ethiopia and the central government in Sudan, this support was reduced. In 1996, when the relationships between Ethiopia and Khartoum deteriorated, Ethiopia was again ready to provide military assistance to the SPLM/A (Rolandsen, 2005, p. 125). With the rise of an Islamist government in Sudan – antagonistic toward the US in the mid-1980s and with the demise of the Soviet Union, the rebel movement drew its support from the US. Although the war is an internal war fought within the boundaries of one country, it indirectly represents global and regional dynamics and national interests which had a strong impact on the course of the war.

As it can be seen, the conflict in Sudan cannot be understood in isolation of the regional and global dynamics affecting it. The conflict as an action–arena is a sub-set within a wider and more inclusive action-arena and the actors, who are part of the conflict either directly as warring parties or indirectly as supporters of the warring parties, belong to the wider action-arena – at the local, regional and global levels. The actors interact across the different levels, the local actors draw support from the regional and international actors while at the same time they serve the interests of international actors at the local level. The relationship between the actors is not linear or unidirectional as they are linked through numerous ties and their actions are mutually beneficial whereby they serve each other's interests while pursuing their own agendas.

### 4.2.3   Drought and Famine

In addition to the violent conflict in Southern Sudan, droughts and famines caused by both environmental factors such as insufficient and below average rainfall and manmade factors, such as unsustainable land use, food policies and grazing practices, played a significant role in creating the complex emergency in the country. Abdel Ati (1988), in discussing the process of famine in east Sudan in the 1980s, argues that "economic policies, rather than 'natural conditions' were to blame" (p. 270). Nevertheless, Sudan is a sub-Saharan African country prone to both droughts and floods. Droughts, in particular, have a strong negative impact on the livelihoods of the communities which depend on rain-fed agriculture. The 1980s witnessed such a drought when, "…, the annual rainfall in Sudan was far below the average for the twentieth century" (Burr & Collins, p.3). This resulted in serious food shortages for groups of population who depend primarily on rainfall for their livelihoods.  The drought occurred in Western Sudan in 1983 and resulted in the 1984-85 famine which spread to the Red Sea Coast and Eastern Sudan (Burr & Collins, 1995, p. 3; Johnson, 2003, p. 137), and later spread to Southern Sudan. Coupled with the on-going conflict and conflicts over grazing lands, the situation worsened and resulted in more deaths and displacement and people lost their cattle, the main source of livelihoods (Burr & Collins, 1995, p. 4; Johnson, 2003, p. 82).

The action-arena, the complex emergency where relief operations take place, has its two main defining features in the armed conflict and famine which feed into each other to make the crisis even worse. As Burr and Collins (1995) describe the situation "both the interminable conflict and social upheaval were made worse by repeated cycles of drought, accompanied by starvation and disease, all of which escalated the number of civilian deaths and contributed to the dissolution of the state" (p. 3)

The complex emergency is not only an armed conflict between a central government and a rebel movement but a reflection of much broader and more complex geo-political and economic aspects in which the interests of many actors are played out – and this undoubtedly has its impact on the relief effort. In addition, food politics, which is a significant contributing factor to famine, also impact relief operations whose primary aim is the provision of food aid to save lives. The beginnings of the emergency in Southern Sudan and specifically the famine were much earlier than the large scale response in 1989, but the broader context during the early 1980s and the dire need in Western Sudan made the focus of the international community and government more on Western Sudan than on the Southern part of the country.

Within this broad action arena, the action situation is the relief efforts that have been ongoing in Sudan since the early 1980s.

## 4.3    THE ACTION SITUATION – RELIEF EFFORTS

### 4.3.1   Pre-Operation Lifeline Sudan (OLS) Relief Effort

This subsection, which draws mainly from Burr & Collins 1995 book *Requiem for the Sudan: War, Drought & Disaster Relief on the Nile*, will cover the earlier attempts to provide relief aid by the different actors, including NGOs, and the failed coordinated relief operations, "South Sudan Relief Operation" and "Operation Rainbow" which preceded the establishment of OLS. The subsection depends heavily on the information contained in Burr and Collins book because this information is not readily available elsewhere, as it falls within what is known as Gray Literature defined as "… a body of materials that cannot be found easily through conventional

channels such as publishers, 'but which is frequently original and usually recent" (M.C. Debachere cited in Gray Literature, 2010). The authors acknowledge in the Preface to the book that the writing of the books was made possible only because of the access they had to documents which are unlikely to be public.

It should be noted that the provision of relief aid is not a neutral enterprise based on humanitarian needs only and in spite of the principles of humanitarianism, neutrality and impartiality, it is strongly connected to the causes of the emergency, the policies of the host country and those of the providers of relief. As Burr & Collins (1995) puts it "… war, drought, and relief must be seen as intimately connected to the policies of the government of Sudan, the United Nations, and the Western Donors" (p. 3).

Relief efforts in Sudan started as early as the 1970s when international NGOs such as World Vision partnered with organizations such as the African Committee for Rehabilitation of Southern Sudan (ACROSS) to provide emergency relief aid to war affected families in Southern Sudan following the first civil war. These early relief efforts in Southern Sudan focused on the reconstruction of community hospitals, provision of medicine and supplies, and education in preventive health (World Vision, 2009). The early relief efforts were localized and uncoordinated. With the period of relative peace during 1972-1982, the presence of NGOs in Southern Sudan continued but their role shifted from the provision of relief aid to that of being contracted by the new Regional Government in Southern Sudan to provide social services and re-build the infrastructure destroyed by the civil war (Johnson, 2003, p. 50).

### 4.3.1.1  Relief in Northern Sudan

The presence and activities of relief organizations, in areas other than Southern Sudan intensified in the 1980s in response to the 1984-85 famine in Western and Eastern Sudan. It has

to be noted that a number of NGOs have already been working with UN High Commissioner for Refugees (UNHCR) in Eastern Sudan providing relief aid to the refugees fleeing the Eritrean – Ethiopian conflict and entering East Sudan (Burr & Collins, 1995, p. 2; Deng & Minear, 1992, p. 50-52). At the beginning of the famine of 1984-85, the Sudanese Government was reluctant to allow humanitarian assistance into the country as it was refusing to open its doors to aid workers and international journalists. The influence of politics and the role that donor countries played became clear when, as Burr and Collins (1995) mention "Numayri [the President of the Republic of Sudan at the time] – whose government depended greatly on the West and the United Nations for financial and material assistance – was eventually forced to accept the subsequent proliferation of Western nongovernmental agencies (NGOs) and private voluntary organizations (PVOs), as well as personnel from the United Nations" (p. 3). A government dependent on financial and material assistance from the West could not afford to keep its doors closed as it was governed by rules outside its direct control. In spite of the weakening of the government resistance to the presence of relief aid workers in the country, the provision of relief in Sudan was not an easy undertaking. It was faced with many other challenges such as denial of access for reasons of security to bureaucratic inefficiencies, in addition to the lack of basic infrastructure, the inhospitable terrain and the geographic and natural isolation of the most needy areas (Deng & Minear, 1992, p. 66-67; Burr and Coolline, 1995, p. 4-5 & 27).

The mid 1980s was a period of expansion of relief work in Sudan, which continued until the present. In spite of the early government resistance to the presence of relief agencies, "by 1986 the Western humanitarian agencies in Sudan numbered over one hundred and represented all ideological and religious persuasions – many nondenominational, others nonnational, and some simply philanthropic." (Burr and Collins, 1995, p. 5). USAID was the first international

agency to respond to the news of the drought in Western Sudan (North Darfur) by sending a team to investigate the news of crop failures and eventually sending the first shipments of food aid in 1984. As the drought continued, food shortages became more acute and the crisis became known to the outside world, international PVOs such as CARE and OXFAM began working in West Sudan and reporting on the worsening situation of the population there (Burr & Collin, 1995, p. 20-21). CARE was contracted by USAID to supervise the distribution of its food aid in Western Sudan. During the same period, UNICEF and OXFAM were active in El Obeid (Kordofan) where they "… established a Drought Monitoring and Nutritional Surveillance Unit to direct food supplies to the neediest towns, villages, and congregations of displaced persons". Sudanese Red Crescent was active and the European Community funded Cargo helicopters to supply inaccessible areas along the Chadian boarder (Burr & Collins, 1995, p. 24–26). It is worth noting that this disaster relief effort, which was mainly funded by USAID, was operating in Northern Sudan only. Please see the pre-July 2011 map Sudan in Figure 4-1 below.

**Figure 4-1: Map of Sudan in 2007**

How the rules are set at different levels impacts the relief effort. The very presence of the PVOs and NGOs was very much dependent both on the policies of Sudan Government and the policies of foreign governments towards Sudan and in particular the policies of the USA, one of the biggest foreign aid providers to Sudan at the time. Foreign governments were driven by their own national interests and the pressure exerted by their citizens in response to crises around the

world. The Government of Sudan, dependent on the West for financial assistance, could not resist for long. The direct providers of relief, the NGOs and PVOs are not independent actors and in spite of being non-governmental, their activities depended on a large extent on governments which are the source of the relief aid they deliver to the people in need.

The multitude of actors playing a part in this early relief effort attests to the complexity of any relief operation, even if it was not as integrated as in the case of OLS. The actors are situated at different levels, the local, the national and the international, with varying degrees of power and with different amounts and types of resources and of course with different motives and agendas. They are governed by different set of rules, some over which they have control and others completely outside their control, as they are determined at different levels of the action situation.

### 4.3.1.2 Relief in Southern Sudan

During the mid-1980s and as the relief effort was concentrated in Western Sudan, the situation was worsening in Southern Sudan as a result of renewed fighting, drought and insecurity caused by the movement southward by cattle herders from Western Sudan because of drought and grazing land scarcity in their own territories (Burr & Collins, 1995, p. 31-32; Johnson, 2003, p. 81-82). The resulting food shortages led a number of relief agencies to take action. Two of the first organizations to respond were the UN Children's Fund (UNICEF) and the International Committee of the Red Cross (ICRC) which, in 1985, produced a report on the extent of the famine in Southern Sudan but "the NGOs, enmeshed in a complicated western relief program, were slow to respond to the … [report] recommendations and the need for famine relief in Southern Sudan" (Burr & Collins, 1995, p. 34).

Despite the focus of the government and donors, as well as many NGOs on Northern Sudan (Western and Eastern parts of the country), some international NGOs working together with small national NGOs had started relief efforts in Southern Sudan. The war had already erupted again in 1983 and the situation was negatively impacted by the drought and shortage of food that hit Western and Eastern Sudan and Ethiopia. Catholic Relief Services (CRS), a U.S. nonprofit NGO whose mission is to support Catholic Church charities abroad, was among the first NGOs to react to the famine in the South (Catholic Relief Services, 2010). It launched its operation from Kenya and worked closely with the Sudanese NGO Sudanaid, the relief agency of the Catholic Church in the Sudan (Burr & Collins, 1995, p. 34-36). The Norwegian Church Aid initiated a food-for-work program among some of the Southern tribes. During the same time, the UN World Food Program (WFP) was organizing a large relief effort aided by the Catholic Relief agencies (Burr and Collins, 1995, p. 36). All of these relief efforts were scattered and carried out by different NGOs working in different parts of the vast area of Southern Sudan with no coordination among them.

### 4.3.1.3 Combined Action Relief Team (CART)

In response to the magnitude of the need following the mid-1980s in Southern Sudan, "…. the NGOs met in Juba … to coordinate their efforts to meet the growing need for food assistance in 1985. Representatives from OXFAM, BAND AID, African Committee for the Relief of the Southern Sudanese (ACROSS), Norwegian Church Aid, Sudanaid, the indigenous Protestant-dominated Sudan Council of Churches (SCC) gathered in Juba to form the Combined Action Relief Team, or CART, which would solicit, receive, and distribute international food aid to the needy in Equatoria." (Burr and Collins, 1995, p. 37). Notwithstanding the fact that individual NGOs have been working together and with UN agencies, CART can be considered

96

as the first attempt at a coordinated relief effort in Southern Sudan. CART, as a consortium of relief-providing NGOs, drew its strength from its strong material basis as it was funded by the EC and the fact that its operations were based on joint logistical facilities possessed by its different members (Burr & Collins, 1995, p. 52-53).

In spite of its strength and the legitimacy of its mandate, CART operations faced a number of obstacles,  chief among them are insecurity in the areas of operations caused by the continuous attacks by the Sudan People's Liberation Army (SPLA), closure of the roads to Juba where  large numbers of internally displaced people had taken refuge, and political hindrance caused by the refusal of the Government of Sudan to allow relief aid to reach the affected population in the areas controlled by the rebel movement (Burr & Collins, 1995, p. 52-53).

Using Lewin's Fore Field analysis, the formation of CART can be considered as a driving force towards ensuring that relief is delivered to the people in need, but the actions of both the SPLM/A and the Government of Sudan constitute a restraining force to the delivery of aid. While CART consortium members were driven by the humanitarian imperative and the neutrality of relief aid, both the SPLA/M and the Government of Sudan were motivated by their political and military agendas which focused on weakening the other in order to achieve a military victory. The rules governing the provision of relief aid were set by the warring factions, each trying to stop relief from reaching the other faction's areas. The relief agencies, as actors within the action situation, did not have control over the rules but were governed by them.  In spite of their good intentions and their concerted effort, their operation failed to achieve its objective because of limitations on the humanitarian space caused by imposition of rules by the warring factions.

**4.3.1.4 Southern Sudan Relief Operation (SSRO) and Operation Rainbow**

     Pre-OLS attempts at coordinating relief efforts, in addition to CART, include also the Southern Sudan Relief Operation (SSRO) and Operation Rainbow. These attempts coincided with the fall of Numeri's regime in Khartoum and the change of Government in 1985. The new ruling body, the Transitional Military Council (TMC), took over power and gave more freedom to international humanitarian agencies to provide relief aid (Medley, 2000, p. 167). The rules of the game have changed, resulting in a widening of the humanitarian space and better access by the relief providers to people in need. Following the change of Government, both the UN and Government of Sudan took the task of coordination of humanitarian assistance more seriously. The UN established the Office of Emergency Operation in Sudan (UNEOS) and the Government of Sudan set up the Relief and Rehabilitation Commission (RRC), the coordinating body of humanitarian assistance within the Government of Sudan (Medley, 2000, p. 175). At the same time that these coordination bodies were established in Khartoum, the NGOs in Southern Sudan joined their efforts. By asserting the principles of humanitarianism and neutrality of aid and through advocating for a "food truce", the NGOs tried to gain greater access to the South in the face of SPLA threats of blockade. A constellation of different factors and actors and changing rules of the game gave momentum to these earlier attempts at coordinated relief efforts.

     The first of these attempts, Southern Sudan Relief Operation (SSRO), was initiated based on a request by the national NGOs, Sudanaid and the Sudan Council of Churches when they requested the Government Relief and Rehabilitation Commission (RRC) to support a "food aid truce" in Southern Sudan. UN agencies, UNICEF and WFP and a number of International NGOs including Oxfam and Doctors without Boarder (MSF-France) in addition to a number of donors responded to the request and together with the RRC representatives formed a Technical

Coordination Committee (TCC) to discuss food aid and relief issues. The South Sudan Relief Operation which was based on the principle of neutrality came under the leadership of the UN Office of Emergency Operations. Notwithstanding the noble idea and good initiative, SSRO failed shortly after its establishment. Again the resisting forces leading to its failure were the high cost of transporting food to Juba as it had to be airlifted, the huge of amounts of food aid required, and the unwillingness of donors to commit to the operation, and the fact that SPLA, which was not part of the operation, was completely against it and threatened to attack airplanes using airfields in Southern Sudan (Burr & Collins, 1995, p. 55 – 56; Medley, 2000, 175). Since the operation was orchestrated by the central government in the North and although its focus was the provision of relief aid in the South, the SPLA saw that the humanitarian food aid has only helped the government (Burr & Collins, 1995, p. 58).

The second attempt at coordinated relief effort was Operation Rainbow, which was a "food aid program" initiated in late 1986.  It was led by WFP representative in Sudan, Head of UNEOS and the director of RRC. Its significance stems from the fact that it attempted to give equal importance to the problem of disaster relief in both the North *and* the South, contrary to the SSRO focus on Southern Sudan only. It also attempted to work with both sides of the conflict which gave it its international significance as "… each side appeared ready to accept the principle of the neutrality of food aid – something unheard of in the history of warfare" (Burr & Collins, 1995, p. 59).  Operation Rainbow introduced the idea of 'neutral corridors'  through which food aid can be transported and distributed and it was based on the idea of food aid parity where food will be lifted to towns controlled by government and by the SPLA at the same time (Burr & Collins, 1995, p. 59 – 60).

Like the Southern Sudan Relief Operation, Operation Rainbow failed because of insecurity and political blockade by both SPLA and the Government of Sudan. The SPLA threatened that it will attack airplanes flying without its permission and "… the government announced that it could not guarantee the security of the airports in Southern Sudan." (Burr & Collins, 1995, p. 62). The Government had also rejected the Principle of Parity and was against any donor arrangement that included the SPLA and any discussions between UN officials and aid agencies on one side and the SPLA on the other side about food aid (Burr & Collins, 1995, p. 64). At the same time, recognizing that food aid was delivered to the government controlled areas only, an SPLA commander announced that if "the relief planes carry supplies, food, and medicine to only one side, we shall consider them hostile to us" (Burr & Collins, 1995, p. 67).

Medley (2000) summarizes the obstacles facing relief efforts as technical problems, open obstruction, and hidden obstruction. The technical problems include the difficulty of transportation through difficult terrain while the open obstruction includes policies and tactics of both the Government and the SPLA/M which led to the obstruction of the delivery of relief aid. The hidden obstruction which can be disguised as either technical problems or open obstruction included lack of cooperation from military officials, transport workers or government officials, for example, denial of security clearance (p. 171-72). All these obstacles led to the failure of Operation Rainbow.

The restraining forces to Operation Rainbow were much stronger than the driving forces. The driving forces were the plight of the populations affected by war and food shortages and the humanitarian imperative and readiness of the relief agencies to join their efforts to reach affected populations on both sides. The restraining force were the refusal of the Government of Sudan to reach an agreement with the SPLM/A and the SPLM/A threats that without such an agreement, it

will attack relief planes. With this threat and with the lack of guaranteed safe passage for relief, insurance companies refused to insure the planes carrying the food aid; without insurance, the UN was unwilling to fly. The situation can be described, in the words of Medley (2000), as a weakness in the mandate of humanitarian agencies (p. 171). According to Medley (2000), "A mandate is – in principle – an order given by an authority to an implementer. The concept contains elements of both a duty and a right. It is simultaneously an obligation to serve and a license to act" (p. 161). When the mandate is weak, although the obligation to serve and the license to act are there, the implementers are faced by many obstacles which hinder their action and which they were not able to overcome.

The lack of agreement between the two sides of the conflict on a set of rules to govern the operation led to its early failure. The perception of either side that relief aid is provided to the other side led to a negative reaction towards relief. A former SPLA soldier commented "The SPLA thought that if people were not contributing to liberation, why should they benefit from relief? If assistance is about relief, peace or development, then the question of whose relief, peace or development leaves room for interpretation" (Zoe, 2006, p. 6). Although this comment is made in reference to the early 1990s period, it is equally applicable to the earlier relief efforts and the actions taken by both the Government of Sudan and the SPLM/A at the time.

The significant role of political will of both sides of the conflict in the success or failure of any relief effort, in addition to the weakness of the humanitarian imperative if not supported by a strong political will is clear in the case of Operation Rainbow. In spite of its failure, one of the advantages of Operation Rainbow was that it "had placed the plight of the Southern Sudanese on the world map and had highlighted a civil war of which few in the West had been aware and few governments had noticed" (Burr and Collins, 1995, p. 65). Also, apparent in these early

relief efforts is the failure of donor governments to exert enough pressure on the Government of Sudan to get humanitarian aid delivered to different parts of Southern Sudan because of the strategic ties they had with the Government of Sudan and their need to protect their interests in the area (Medley, 2000, p. 173).

### 4.3.1.5    Conclusion

In conclusion, the action arena in which humanitarian relief was taking place was very complex – not just as a result of the multiplicity of actors but also as a result of their different allegiances and political agendas. These different allegiances and political agendas resulted in the rules that governed the course of the relief operations and determined their success or failure. At the time of these early relief efforts, the main donors were USAID and the EC. The USAID came to play a major role in the response to the food crisis through Public Law 480 – Food For Peace Program (PL480) and the provision of food aid, which as a policy tool used to support their allies in developing countries. The EC's role was mainly in the provision of planes and air lifts of food aid in areas where access through roads was very difficult.

Since the early relief efforts were a response to the food shortages and the famine that hit Western and Eastern Sudan when there was no war or violence, access was mainly hindered by administrative obstacles, the geographic and natural barriers, and the debilitated infrastructure – unlike in Southern Sudan where violence, the denial of access to relief agencies by the warring factions and the use of relief aid as a warring strategy were major obstacles. The change in the nature of the crisis itself, where a famine was now coupled by armed conflict resulted in more stringent rules being set and enacted. The change of government in 1985 led to a change in these rules as the then new government became more accepting to the presence of foreign aid agencies

and established the Relief and Rehabilitation Commission (RRC) in May 1985 to coordinate disaster relief in Sudan (Burr and Collins, 1995, p. 40).

Looking at the actors in the action arena, we find that different UN agencies and the ICRC have been present throughout the time when relief effort was taking place, yet their presence intensified and their role became more significant during later stages. By far, some of the most important actors in any relief effort are the NGOs, both national and international. In the case of Sudan, they were the forerunners and spearheads of relief efforts before the formation of the UN coordinated relief operations. Because of the way they operate and their relative independence from politics and governments, they are able to access areas which might be inaccessible to other actors. They have a strong impact on the action arena and action situation. Summarizing the pivotal role played by NGOs in relief efforts in Sudan Burr and Collins (1995) state:

> Certainly, the NGOs played a crucial part in the development of disaster relief assistance in Sudan as they did elsewhere in the world. They were occasionally threatened by irate villagers who wanted them to do more and by government officials who wanted them to see, speak, and do less…. Some were expelled for fatuous reasons, usually because they took their work very seriously. PVOs were occasionally threatened by Muslim fundamentalists, who labeled them "Neo-Crusaders" who had no rightful place. Nevertheless, they pioneered disaster relief throughout the Sudan at a time when nothing was forthcoming from the Sudan government and the international donors were preoccupied with the drought and famine in the North. Finally, in every disaster relief program initiated from 1984 through 993 in Southern Sudan, the NGOs were to play a pivotal role (p. 37-38).

It is noteworthy that the NGO's pivotal role in throughout Sudan has continued even after the war has come to an end.

The many interactions between the different actors impacted the course of the relief effort, the action situation – on occasions strengthening it and on other occasions, leading to its failure. Donors were governed by their foreign policy agendas. This can be clearly seen in how

USAID was active in North Sudan (mainly the Western and Eastern parts of the country) because of the good relationship between the US Government and the Government of Sudan at the time, but it was very reluctant to provide relief in the South. Providing relief assistance in the South would entail negotiations with SPLA, which were not encouraged by the US Government. Also noteworthy are the interactions of the different relief agencies with both the Government and SPLM/A. The Government was in need of the relief aid provided by the relief agencies, but it was reluctant to give them access to areas where need was acute because these same areas were the sites of fighting and violence. The Government was afraid that the relief agencies would expose the existing violence to the outside world. The change in regime in 1985 led to change in the rules that governed the provision of relief effort leading to a widening of the humanitarian space and more access given to relief agencies. Politics in general had its impact on the humanitarian space – sometimes widening and sometimes shrinking it. The two political/military powers, the Government of Sudan and the SPLM/A, were not cooperative most of the time. Active humanitarian diplomacy has to come into play at a time when the concept of humanitarian diplomacy was not yet properly articulated (Minear & Smith, 2007).

During these early relief efforts, the role of the media, which later became a very important player in any disaster or humanitarian crisis situation in the world, was limited, but the more publicity was created, the more NGOs moved in.

### 4.3.2   Operation Lifeline Sudan

This section will describe the establishment and evolution of OLS using the IAD framework, explaining what OLS is, describing the broader environment and the specific conditions that led to its emergence as a specific structure for the provision of relief aid to the

affected population. It will illustrate the institutional, organizational and political factors interacting together to influence the course of the relief operation through its history. The section will give an account of the multiple actors taking part in the operation and key agencies responsible for coordination, their different roles and their interactions which impacted on the course of the operation.

**4.3.2.1 What is OLS?**

The inauguration of Operation Lifeline Sudan in April 1989 was a watershed event in the history of emergency relief assistance in Sudan and worldwide. Before going into the details of the establishment of OLS – it is worth discussing what exactly Operation Lifeline Sudan is. Reading through the literature on OLS, it has been defined differently by different authors. Some refer to it as a negotiated access agreement while others consider it as some sort of organization, institution, arrangement, coordination mechanism, or coordinated relief effort (Burr and Collins, 1995; Deng and Minear, 1992; Johnson, 2003; Karim et al., 1996, Prendergast, 1996). In an interesting characterization of and a multi-faceted definition of OLS, Omaar and de Waal (1995) describe it as "an agreement brokered by the UN", as "a banner under which UNICEF and WFP get funding from governments; as "operational units inside UNICEF, Khartoum and Nairobi" and as "a system through which UNICEF buys a degree of co-operation, regulation and control of NGOs" (p. 8).

Although OLS is a negotiated access agreement, it is also an emergent multiorganizational network. It is emergent because it did not exist before in this particular form, shape and content. As Drabek (1987) explains, emergence implies a temporal dimension

"… some 'thing' is present at time two that was not present at an earlier point" (p. 261).  It is also emergent because it was created for a specific purpose, i.e. to respond to a certain event.  In the original plan, it was supposed to come to an end once the response to the particular event is complete, yet actions and interactions at different levels led to its extension beyond its original duration and also to its extension in areas and fields beyond what was originally planned.  The interactions of the different actors among themselves and with their environment resulted in a situation different from what was originally envisioned, in other words, "individual, localized behavior aggregates into global behavior that is, in some sense, disconnected from its origins" (Page & Miller, 2007, p. 44). As Drabek puts it, "when such new behavior patterns do emerge, they are regarded as having properties that are different from their constituent parts" (p. 261). It can be seen that emergence has been a characteristic of OLS since its establishment and until its dissolution.

OLS, as a multiorganizational network, is made up of many sub-networks. These sub-networks include different UN agencies, International NGOs, National NGOs, Government institutions and rebel movement bodies. For example, one of the sub-networks is that formed by several NGOs and governed by a network administrative body such as a Steering Committee (Sowinska & Fenton, 2005, p. 27). The members of each of the sub-networks interact among themselves as well as with members of other sub-networks. In other words, there are intra- and inter-network linkages between the different actors. In addition, the sub-networks as entities interact among themselves.

Although OLS was initiated in 1989 under the leadership of the UN, represented by James Grant, the Reprehensive of UNICEF in Sudan at the time (Loane, 2000, p.18), yet it cannot be considered as a hierarchical organization as its establishment depended on negotiations

and acceptance by both the Government and the Rebel Movement. In addition, its development

and course of action depended not on a centralized decision making mechanism, but more on the

interactions of its different members among themselves and with their wider environment.

Granted there were aspects of the operation where all the humanitarian agencies agreed to

centralize their decision making and negotiating voice – such as negotiation for access -- but in

general, their actions and interactions were not controlled, but dependent on each other as in any

complex adaptive system (CAS). In areas where decisions were centralized, OLS was led by a

lead agency – UNICEF in Southern Sudan.


### 4.3.2.2   Creation of OLS


The Second Civil War in Sudan is a typical example of a CHE that called for an

international response. In 1988-1989, in response to a specific event within the conflict - the

famine in Bahr El Ghazal province in Southern Sudan which killed roughly 250,000 people, the

UN established Operation Lifeline Sudan (OLS) (Rhodes, 2002; Salinas, 1998; Sidahmed, 2008).

In describing the conditions that led to an international humanitarian response to the famine in

Southern Sudan, Sid Ahmed (2008) mentions that

> Due to the collapse of the rural economy, the disruption of the ordinary livelihoods of
> the southern population (in urban as well as in rural areas), and the breakdown of road
> and river transportation networks that linked the south to other parts of the country,
> the situation regarding food supplies and other essentials became very desperate; in
> fact, the whole region came under the shadow of famines and starvation. It was in this
> context that in April 1989 "Operation Lifeline Sudan" (OLS) was conceived by the
> United Nations and other international donors (p. 82).

A constellation of factors at different levels led to the establishment of OLS.  Famine and

violent conflict are not new to Sudan and OLS can be considered as a new stage in a continuous

relief effort that has been ongoing in Sudan since the early 1970s. In addition to the humanitarian imperative which is a strong motive for the provision of emergency relief aid, there were other factors at the local, national and international level that led to the establishment of OLS at that particular time. At the national level, one important factor was the failure of previous relief efforts whereby the international community did not manage to convince both sides of the conflict to allow access so that relief supplies reach the people in need. Another factor at the national level was that, by allowing the provision of aid to the target populations in areas where they are currently located, the government was trying to deal with the problem of displacement and its destabilizing effect on the capital and the major cities (Background of OLS 1989-1992). A third factor was the sense of optimism at the time since the peace process was underway (Deng & Minear, 1992, p. 98). At the International level, the donors and the international community realized the utility served by such an operation in terms of playing out their foreign policies and national interests, saving them from the more difficult task of trying to find a political solution to the conflict. (Deng & Minear, 1992, p. 36; Emery, 2000, p. 131)

From an IAD framework perspective, the establishment of OLS and its operations can be viewed through the three levels of analysis of collaborative action, constitutional choice level, collective choice level and operational choice level (Hardy and Koontz, 2009, p. 296; Ostrom, 2005, p. 58-60). The initial establishment of OLS is a 'constitutional choice level activity', as in the words of Hardy and Koontz (2009), "… the process of forming new collaborative organizations is a constitutional choice-level activity" (p. 298). It is an activity taken at the highest level of decision making and it involves "… establishing who will participate in collective-choice decision making and how it will be carried out" (Hardy and Koontz, 2009, p 298). In the case of OLS, the operation was established through negotiations among the highest

level of the UN, the Government of Sudan and the SPLM/A. Once it was formed, OLS was able to operate at the collective choice level, that is, it could modify its institutions, set its own rules on who can participate in the next level of decision making, and establish the rights and duties of its members (Hardy and Koontz, 2009, p. 298). OLS has also evolved in ways different from what it was envisioned and this can be attributed to its emergent character described above.

OLS, as a emergent collaborative network, is an agreement of negotiated access among the UN, the Government of Sudan, and the opposition movement - Sudan's People Liberation Movement/Army (SPLM/A).  OLS is "the first case in which warring factions have agreed over a long period of time to allow humanitarian supplies to cross lines of battle" (Prendergast, J., 1996) and it is also the first humanitarian program that endeavored to assist "internally displaced and war-affected civilians during ongoing conflict within a sovereign state" (Karim et al., 1996, p. 1). As such, it is the oldest negotiated access agreement, longest as it operated from 1989 to 2005 and has been described by some observers as one of history's largest relief operations in an active war zone (Africa's Famine is Big Business, 1998).

From an institutional perspective, OLS is very significant in the history of emergency relief assistance since it brought into existence and consolidated certain norms and rules that were not there before. As mentioned by Emery (2000), "… OLS has come the closest to establishing a regime of international emergency assistance." By 'regime' here is meant "sets of implicit and explicit principles and decision making procedures around which actors' expectations converge in a given area" (p. 152). Although the principles of neutrality, impartiality and independence has always been part and parcel of the provision of emergency relief assistance,  OLS as a negotiated access agreement and as an emergent multiorganizational network introduced new ways of adhering to these principles. As Minear, (2002) states

The Sudan experience demonstrated a contribution by humanitarian actors in promoting legal norms. OLS imposed a certain discipline on both sets of belligerents. The initiative served as a means, at least in 1989, for bringing the practice of the Sudan government, a signatory of the Geneva conventions and protocols, more nearly into conformity with international humanitarian law. While not a party to those agreements, the SPLA expressed its willingness to respect them, although the insurgents too, fell short of agreed international standards (p. 91).

Promotion of legal norms and the establishment of an international emergency assistance regime is a clear example of how an emergency relief operation as an action situation, through the interactions of its different actors and the interaction of the actors with their broader environment, changed that environment and led to the establishment of norms (and institutions) that have not been there before.

### 4.3.2.3 Actors

The main actors within OLS are the government of Sudan, SPLM/A, and the UN which took decisions at the constitutional-choice level that led to the establishment of the operation. The Government was represented by the High Ministerial Committee (HMC) and the Relief and Rehabilitation Commission (RRC) while the SPLA/M was represented by its leadership at the beginning and until 1990 when the "…, Sudan Relief and Rehabilitation Association (SRRA) [the humanitarian wing of the SPLM/A] had established a presence in many areas in the Sudan; both coordinating relief operations and taking on functions as local governments" (Rolandsen, 2005, p. 30). Other important actors are the donors, without whose support the operation could have not taken off and without whose power to leverage decisions, access to the people in need would not have been granted. Duffield (2000) writing about the role of donors in OLS mentioned that "the history of humanitarian access within OLS operation can largely be written in terms of how donor pressure [on the warring parties] has fluctuated," (p. 112-113) and how

the warring parties responded to this pressure. The donors which supported OLS during its early stages included most of the OECD countries.

Under the terms of the OLS agreement, a number of UN agencies and around 40 NGOs, both national and international, provided emergency relief and rehabilitation assistance in Sudan. Besides the organizations working under the umbrella of OLS, there were more than ten international NGOs in addition to the International Committee of the Red Cross (ICRC) providing humanitarian assistance to the war-affected population both in Northern and Southern Sudan, but mainly in Southern Sudan (USAID, 2004). NGOs, in particular national NGOs such as Sudanaid and the Sudanese Council of Churches, have been instrumental in providing information about the situation and in spearheading relief in Southern Sudan even before the emergency situation became so widely known and called for a high profile international response. As Burr & Collins (1995) mention "historically, most of the valuable information concerning the South's food requirements had been supplied by Sudanaid and Sudan Council of Churches" (p. 42).

Many of the NGOs that later moved to Southern Sudan and became part of OLS had a long history of working together, which can be considered as an already established network. This experience has facilitated their cooperation and joint efforts later on. It is also worth noting that a number of both relief and development agencies such as ICRC, UNICEF, Norwegian People's Aid and some faith based organizations such as Mennonite Central Committee have been working in Southern Sudan before the establishment of OLS, but their efforts were scattered and their access to the affected populations became very restricted, as the fighting between the warring parties intensified. As already mentioned, OLS is not the first attempt by the international community to negotiate access to the war affected population with parties to the

111

conflict, but it is the first successful attempt in securing the agreement of both parties to the provision of relief aid to the affected population (Burr & Collins 1995; Deng & Minear, 1992).

### 4.3.2.4   Maintenance and Institutionalization of OLS

When OLS was first initiated in 1989, it was conceived as a short-term response to a famine in the war zone of Southern Sudan, but the continuation of the war and emergency conditions led to its extension first in 1990 and again in 1991. This second extension continued until the signing of the Comprehensive Peace Agreement (CPA) in 2005, when OLS as an institution disappeared although the humanitarian relief effort is still ongoing in Southern Sudan (Akol, 2005). As such the relief effort in Southern Sudan precedes OLS by many years and continues beyond it; but OLS stands out as an 'institution' that emerged, at a certain point in time and under specific conditions, to mobilize the international community to provide assistance to Sudan, to secure access to the affected population, and to bring together the efforts of the many relief agencies active in Southern Sudan (Emergency Relief Needs, 1989). OLS has managed to stay, to adapt to the changing conditions of the emergency, and to evolve over a period of 16 years when it finally came to an end with the signing of the Peace Agreement.

The principles governing OLS are neutrality and impartiality of humanitarian assistance and free access to war-affected populations wherever they happened to be (Karim, et al., 1996; Minear, et al., 1991). According to these principles, OLS was supposed to operate as a unified body in all parts of the country where there are war-affected populations.  This has been the case during its early period, but eventually OLS came to operate under "two markedly different contractual and operational regimes," one for Southern Sudan and one for Northern Sudan (Karim, et al, 1996). The Northern Sector of the operation managed from Khartoum was very much under the control of the government and in many ways ceased to be an active part of OLS,

while the Southern Sector managed from Nairobi continued until 2005. Karim et al. (1996), in their comprehensive review of the operation, mention that "an implicit UN understanding developed that, in effect, OLS is confined to the Southern Sector" (p. 26).

The maintenance and institutionalization of OLS entailed decisions at multiple levels – at the constitutional choice level, at the collective choice level and at the operational level. The constitutional choice level decisions, which were made at the highest policy level had implications both politically and operationally as some of these decisions constitute the rules of who was doing what and how the operation was managed. The establishment of OLS and its maintenance and institutionalization was premised on the UN taking charge of the provision of humanitarian assistance to affected populations on both sides. As Karim et al. (1996) states, "in negotiating a conditional transfer of part of government of Sudan sovereignty to the UN for humanitarian purposes, an operational division of Sudan into government and non-government controlled areas was created".

### 4.3.2.5    Separation into Northern and Southern Sectors

One aspect of the institutionalization of OLS was that it "… changed from an annually negotiated agreement among Khartoum, SPLM/A and the UN to a permanent administration" (Rolandsen, 2005, p. 46). This can be considered as a form of adaptation by OLS as an institution to the changing environment in which it existed. What was previously envisioned as a short term crisis was becoming an extended emergency for which the continued provision of relief aid was required. OLS adapted by becoming an established 'permanent administration' instead of an agreement that was negotiated and renewed annually.

Another aspect of the institutionalization of OLS was the separation of what was a unified operation covering the affected populations in all parts of the country into a Northern

113

Sector operating out of Khartoum and a Southern Sector operating out of Nairobi. This separation can be considered as yet another form of adaption by the different actors in the operation. Since the Government of Sudan did not have the same control over the South that it had over the North, OLS evolved differently in the North and the South. In the former, it was very much under the control of the Government while in the South, it enjoyed a degree of independence and had to work closely with the local authorities and the SRRA there. This separation was caused by many factors acting at different levels. The majority of donors and international aid providers believed in 'humanitarian aid' per se and were hostile to negotiating with the government, which was part of the conflict (Emery, 2000, p. 142). They preferred to provide assistance to the people in need in the South without having to interact much with the government in Khartoum. The Government, on the other side, accepted this division, in an attempt to gain international good will after its support of the Iraqi invasion of Kuwait in 1991 and in fear of an international intervention similar to that in Somalia in 1992 (Rolandsen, 2005, p. 46). This led not only to the split of OLS into a Northern and Southern Sector, but also to a split among the aid agencies between those who preferred to work as part of OLS and those who preferred to work independently of it.

OLS is a complex adaptive system and it is clear how the broader context in which the operation existed impacted on its development and evolution. It is interesting to note that international events such as the Iraqi invasion of Kuwait and the international intervention in Somalia, which may seem irrelevant to an emergency relief operation in Sudan, had their strong influence on how the operation evolved. The interactions of the different actors, in response to these events and their attempts to serve their agendas, led to changes and adjustments within OLS which would have not have happened had the operation existed in isolation from its broader

114

environment. It is noteworthy that the impact goes both ways, as much as the environment influenced the evolution of the relief operation, the relief operation as a complex system had also impacted its environment and led to changes in that environment. This influence of the operation on its environment was captured by Rolandsen's (2005) description of how the presence of the relief operation encouraged the establishment of some form of an administration in the South. Rolandsen (2005) mentions, "While the … [Khartoum] government in the North maintained a hostile approach towards the relief operations, it was in OLS's and foreign NGOs' best interest to encourage the SPLM/A to establish a more explicit claim for the right to administer the areas under their control. A quasi-autonomous region in the South would make the humanitarian apparatus less dependent on approvals from Khartoum" (p. 46). As in any complex adaptive system, the interactions among the different actors and their environment led to the emergence of structures quite different than those that initially existed.

### 4.3.2.6  Extension into Different Sectors

Another aspect of the institutionalization of OLS is its shift in orientation from a predominantly food relief operation to an operation covering different sectors and its change from an emergency approach to a chronic disaster that marginalized the local community into projects that mobilized the communities.  Some NGOs in Southern Sudan, such as the German NGO, Aktion Afria Hilfe (AAH), shifted their focus from the provision of emergency assistance to building community-based projects in primary education, primary health care and food security (Erasmus, 2001, p. 253). The shift in orientation is also a manifestation of the emergence characteristic and adaptive feature of the operation.

OLS, which began in 1989 as a food relief program in response to a nutritional disaster exacerbated by war, broadened its programs extensively as a result of the changing perception of

the emergency by aid agencies. As the emergency situation continued, the concern of aid agencies shifted from emergency assistance to developmental relief (Duffield, 2000, p. 118). By 1996, OLS programming covered areas such as "household food security, including rehabilitation of agricultural production and livestock, roads, water and sanitation, primary education, capacity building, and promotion of humanitarian principles (Karim et al., 1996, p. 75). This is in response to a change in the conceptualization of the situation from "a war related nutritional emergency" to a situation "defined institutionally in terms of problems of household food security and lack of local organizational capacity" (Duffield, 2000, p. 118). Different NGOs covered different sectors in different areas throughout Southern Sudan. The Southern Sector became very complex with a very large number of actors. Part of this complexity can be explained as the adaptation by the Operation to the changing political situation in Southern Sudan. Karim et al. (1996) attributes the increase in the number of actors implementing programs in the different sectors to the "rise of factionalization within opposition movements, and the simultaneous rise of potential new counterparts to OLS" (p. 78).

### 4.3.2.7  Humanitarian Space and Agreement on Ground Rules

A third aspect of the institutionalization and maintenance of OLS was the endeavors to secure humanitarian space through the "Agreement on Ground Rules". The Agreement on Ground Rules was signed in 1995 between the Head of OLS Southern Sector and the different Southern factions including SPLM/A, the Southern Sudan Independence Movement/Army (SSIM/A) and in 1996 with SPLM-United (Bradbury et al., 2000, p. 6). When OLS was created, the humanitarian principles constituted its foundations but they were not explicitly mentioned as part of the agreement itself.  But as the operation was taking place, there were violations of

116

human rights and misuse of humanitarian assistance by the rebel armed groups, this led OLS to

negotiate and agree with the rebel groups on a framework of collaboration which integrates

humanitarian principles and the protection of civilians in OLS mandate and actual operations.

The opening paragraph of the agreement states:

> This agreement is intended to lay out the basic principles upon with Operation Lifeline Sudan (OLS) works and to lay out the rules and regulations resulting from such principles. It seeks to define the minimum acceptable standards of conduct for the activities of OLS Agencies and the Sudan Relief and Rehabilitation Association, as the official counterpart in the areas controlled by the Sudan Peoples' Liberation Movement/Army (SPLM/A) (SPLM/OLS Agreement on Ground rules, 1995, p. 1).

The overarching purpose of the signature of the agreement is to improve the delivery of

humanitarian assistance and the protection of civilians in need as such it reinforces the idea of

establishing a regime or norms of humanitarian assistance and it goes beyond just norms to

formalize them. Although SPLM was a rebel movement and did not represent a sovereign

government, yet through this agreement it expressed its support to the Geneva Convention of

1949 and the 1977 Protocols additional to the Geneva Conventions in addition to the Convention

on the Rights of the Child 1989 (Bradbury et al., 2000).

The idea of Ground Rules was a step towards the institutionalization of OLS because it

was not only an attempt to organize the interaction between the relief operation and its

environment but also an attempt to influence that environment by making it more principled and

by imposing the respect of international principles and conventions on the rebel groups. It

reflects the attempt of the UN and the NGOs to "change the warring factions' attitude towards

the civilian population and the relief aid activity" (Rolandsen, 2005, p. 47). The idea of Ground

Rules can be considered as a driving factor towards ensuring proper and quality delivery of

humanitarian assistance against the restraining forces of violence, unruliness, obstruction to

access and divergence of relief assistance practiced by the different warring factions and rebel

groups. By agreeing on the rules, the objective was to commit all parties and to ensure that they are mutually responsible first and foremost for securing 'humanitarian space' which is "the sphere of action of humanitarian agencies [both in a geographic and political sense]" without which humanitarian action will be very difficult (Bradbury et al., 2000, p. 9).

The need for securing access, ensuring the safety of aid personnel and non-interference from warring parties led the aid agencies to be in a state of continuous negotiation with the warring factions. Although relief operations usually claim their independence of the political sphere, yet to achieve their goal of successfully delivering aid, they have to negotiate with warring factions to gain access to the people in need, to ensure the safety of aid providers and the security of the operation. As Rolandsen (2005) mentions, "The need to improve … [the insecure and unsafe] situation became one of the main reasons that humanitarian organizations deemed necessary to influence political developments in the Southern Sudan" (p. 47).

### 4.3.2.8    1998 Famine

One of the major events in the history of OLS was the famine of 1998. Nine years into the life of OLS and after it became an established and institutionalized entity, another famine struck Bahr el-Ghazal province in Southern Sudan, whereby up to 2 million people were "… at risk, i.e. dependent on some form of external assistance to survive" (Murphy & Salama, 1998; Rhodes, 2002, p. 1). In addition, an estimated 100,000 people died in spite of the presence of the Operation (Rhodes, 2002, p. 2). The reasons for this crisis are not very different from those that created the crisis in 1989. They include the armed conflict and natural disasters which continue to negatively impact and stress the fragile livelihoods systems of people living in Southern Sudan. Added to these factors, the years leading to the 1998 famine were characterized by

"looting and deliberate crop destruction, in combination with three consecutive years of poor crop harvest …"; "curtailment of trade routes and exchange relationships"; and "military attacks on areas of population concentration" (Murphy & Salama, 1998). Added to these factors, Rhodes (2002), mentions the political vacuum in Southern Sudan as a factor that made the efforts to prevent famine almost non-existent (p. 8).

The fact that this crisis happened exposed many weaknesses within OLS in addition to factors outside the control of OLS. Obstructions by warring factions, including the flight bans by the Government of Sudan in the first quarter of 1998 in addition to the intensification of fighting among the different warring parties and their continuous attacks on relief sites were two of the problems faced by the operation and over which it had little control. Other problems internal to OLS include scarcity of steady funding by donors, logistical problems and lack of coordination between the different agencies. The response to the emergency has been described as an uncooperative and poorly planned relief response (The Humanitarian Crisis in Sudan, 1998, p. 5; Murphy & Salama, 1998; Rhodes, 2002, p. 1).

The 1998 famine brought into question the 'norms' and 'rules' that have been established through the OLS agreement itself and the Agreement on Ground Rules with the different rebel movements. The 'denial' of access through flight bans by the Government of Sudan and the continuous looting of relief supplies by the rebel movements amount to a break in the 'rules' agreed upon among the parties and to the vulnerability of humanitarian space. It also testifies to the challenges of providing relief aid in a war zone. It reveals that the political and military agendas take precedence over the humanitarian considerations and in serving their interests the warring parties did not have any inhibitions against inflicting harm on citizens. It also brings into

focus the role played by donors, as a major actor, in the success or failure of any relief operation as funding was a major constraint to the relief effort in 1998.

### 4.3.2.9    Dissolution of OLS and the Post-OLS Relief Effort as of 2009

OLS continued post the 1998 famine to operate in Southern Sudan until the signing of the Comprehensive Peace Agreement in January 2005. Since OLS was an agreement of negotiated access in a war zone, the end of the war has automatically brought it to an end since, theoretically, in the post-conflict era access is no more a problem.  Although OLS as a specific emergent multiorganizational network ceased to exist, it is noteworthy that the end of active fighting did not signal the end of the emergency and the dissolution of OLS did not mean the end of the relief effort which, in 2009, was still continuing in Southern Sudan. The situation is still precarious and the need for relief aid continues.  An IRIN report in July 2009 states "Southern Sudan could face a food crisis this year because of erratic rainfall in several states, insecurity disrupting framing patterns, and poor infrastructure affecting aid delivery…" (IRIN, July 2009).

Examining this situation through the lens of Lewin's Force Field Theory, we find that the driving forces leading the continuation of the emergency are much stronger than the restraining forces that could lead to its end. Although the war between the central Government in Khartoum and the SPLM/A came to an end in 2005, tribal conflicts continued leading to insecurity which negatively affects people's livelihoods.  The failure of the long term relief effort, although in its long history it moved from being only emergency relief to developmental relief,  to address the causes of the emergency leads to its reoccurrence. It is worth noting that the factors that led to the emergency in 1989 and 1998 are the same factors that lead to the emergency in 2009.

Humanitarian agencies continue to operate in Southern Sudan but in a different context. During the six-year, post-conflict interim period in Sudan, tribal and ethnic conflicts continue to

inflict Southern Sudan "… putting tens of thousands of vulnerable people at risk of being cut off for help…" (IRIN, June 2009). The post conflict period  witnessed some economic recovery and the revival of markets and trade activity, in addition to substantial population movement resulting from the return of Internally Displaced Persons (IDPs) and refugees" (Maxwell and Burns, 2008, p. 7; Sharp, 2007, p. 104).  The focus of humanitarian agencies in the post conflict period is on "assisting return, continuing to protect the most vulnerable, and promoting the transition away from emergency to livelihoods recovery" (WFP 2008a – EMOP cited in Maxwell and Burns, 2008, p. 7). Yet, given the security situation and food shortages, the need for emergency food relief remained acute.

In addition to the old actors, new actors came to the scene. Most significant among them in the United Nations Mission in Sudan, the UN peacekeeping force deployed to Sudan in 2005, in addition to UN agencies UNHCR and International Governmental Organizations such as the International Organization of Migration (IOM). UNMIS is a "multidimensional peace support operation, consisting of up to 10,000 military personnel and an appropriate civilian component, including more than 700police officers".  The mandate of UNMIS includes among other things the facilitation and coordination of the voluntary return of internally displaced persons and refugees and humanitarian assistance (UNMIS, 2010).  The UNHCR and IOM, which were not active during the earlier periods, are playing a significant role in Southern Sudan because of the large number of returnees both from within Sudan and across the borders. The role of some actors has changed; SPLM is no more a rebel movement but a partner in the Government of National Unity and the leading party governing Southern Sudan.

NGOs continue to operate in Southern Sudan but they are now facing more pressures from the local governments and local communities to do more. Odhiambo (2006) cited a field operations director with one of the big international NGOs, saying "NGOs represent the only organized systems the people know and the people have begun expecting NGOs to provide services that only governments can provide". Brauman (2006) mentions that the NGOs have been invited to contribute the rebuilding of Southern Sudan but they '… have neither the mandate nor the means …" to carry out these tasks. This is quite a challenge for NGOs as it reflects the dependency of the post-conflict government and local communities on international relief assistance to undertake tasks that are the responsibility of the government to provide.

This reflects a change in the rules of the game as a result of a change in the context in which the NGOs are operating.

## 4.4    SUMMARY

The chapter provided a description of the case study using the IAD framework and Kurt Lewin's Force Field Theory within the context of the international aid system. It gave an overview of the civil war in Sudan and described the humanitarian relief effort which continues since the 1970s to the present day. The chapter answers the research question of why and how certain institutional arrangements or multiorganizational networks emerge and evolve. The main argument the chapter is making is that a relief operation is a complex adaptive system whereby its constituent parts are continuously interacting with each other and with their broader environment. As a complex adaptive system, a relief operation is an action situation existing within broader and interacting action arenas. It is continuously impacted by these action arenas

and at the same time it influences what is happening within them. The repeated interactions of the different actors among themselves and with their environment define the structure of the operation and its adaptation over time. The chapter also reveals how, through the actions and interactions of the participants in the action arena, the relief operation, as an emergent multiorganizational network, adapts to the frequently changing conditions of the emergency. OLS had begun as a three-month emergency food assistance program, continued for 16 years and covered broad sectors and large geographic areas. After OLS came to an end in 2005, the relief operation continued in Southern Sudan because of the continuation of the state of CHE.

Operation Lifeline Sudan is a nested set, not only within a larger organizational set of humanitarian agencies, but also within a broader context of national and international politics. Regime changes in Sudan, events in neighboring countries and other seemingly irrelevant events such as the Iraqi invasion of Kuwait and the American intervention in Somalia all have their impact on the operation. Donor countries and their foreign policy agendas played a strong role not only through the funds they provide but also through pressure they exert on the Government of Sudan and the rebel movements to allow humanitarian agencies access to the people in need. The broadening or shrinking of humanitarian space, depended on donors leverage as much as it depended on humanitarian diplomacy practiced by the providers of relief aid in their direct negotiations with the warring factions.

With regards to humanitarian relief effort in Sudan, certain common features characterize it throughout its long history. It can been clearly seen that the same set of challenges such as administrative obstacles, geographic and natural barriers as well as debilitated infrastructure continued to hinder the provision of relief aid throughout the years. Insecurity and intensification of fighting between different factions led to the shrinking of humanitarian space. The

123

humanitarian agencies were no longer dealing with two warring factions, but with a large number of warring factions controlling different parts of Southern Sudan. This required a state of continuous negotiations between the humanitarian agencies and the political and military authorities in order to gain access to the people in need. In spite of humanitarian aid's claim of its independence from politics, the humanitarian agencies find themselves involved in politics in order to be able to carry out their relief effort.

Against this descriptive analysis of the case, the next chapter will present the findings of the Social Network Analysis.

# 5.0    STRUCTURE OF THE RELIEF OPERATION IN 1989, 1998 AND 2009

## 5.1    INTRODUCTION

Chapter Four explained the historical background to the case study and provided a descriptive analysis of the provision of relief assistance in Sudan since the early 1970s. The descriptive analysis of the case was based on the IAD framework and Lewin's Force Field Theory looking at the multiple levels of analysis, the interaction of actors across these levels and the driving and restraining forces impacting the relief operation in the context of a complex humanitarian emergency caused by war and famine. Although the complex humanitarian emergency was at the local level and relief assistance was provided in specific regions within the country, yet the dynamics of the emergency and the policies impacting the provision of relief assistance span different levels and reflect much broader international and regional dynamics.

This chapter presents the findings of the Social Network Analysis (SNA) generated from relational data using the Organizational Risk Analyzer (ORA) computer program. The findings represent a modeling of the structure the relief operation as a network during the three points in time identified in Chapter Four - 1989, 1998 and 2009. The relief operation is described using the following network measures - Size, Density, Centrality, Krackhardt's Hierarchy measures, Measures of Fragmentation and Cohesion as defined in section 5.5.1 of this chapter. The SNA will enhance our understanding of both the specific characteristics of the different actors and the

overall structure of the relief operation as a complex adaptive system. It will provide answers to the following questions "what is the system in question, what are the entities composing it and how do the entities combine and organize to produce the system itself?" (Smith, 1997). Based on the results of the network analysis, I will be able to report on the different actors and identify which actors are more central and accordingly occupy positions of power in terms of controlling the flow of information and interaction among other actors; which actors work together and describe the patterns of their interaction and how these interaction patterns changed or remained the same at the three points of time. The importance of understanding the interaction patterns among actors in a network is underscored by Stephenson (2006) when he stated that developing "… a context-sensitive description of humanitarian network action" required charting "… the range and character of continuing significant patterns of communication and ties among network stakeholders" (p. 49).

The next sections will present a description of the data used in the analysis, a description of the network in 1989, 1998 ad 2009, the Social Network Analysis Program used and subsequently the findings of the analysis.

## 5.2     DATA USED

Social Network Analysis uses relational data which takes into consideration both the actors and their interactions in contrast to the data used in conventional statistical analysis which focuses on the actors only (Hanneman, 2001, p. 3). The source of the relational data used for the SNA is the situation reports (sitreps) produced by OLS in 1989 and 1998 and by UN OCHA in 2009. OLS was the main coordination mechanism of the relief operation in 1989 and 1998. UN OCHA took

over the coordination of humanitarian relief in Southern Sudan after the signing of the Comprehensive Peace Agreement and the eventual demise of OLS as a specific structure. The data from the situation reports was manually coded as described in Chapter Three.

The numbers of sitreps coded for the three periods are as follows: for 1989, 14 sitreps were coded covering the period 11 April 1989 to 20 September 1989; for 1998, 17 sitreps were coded covering the period 7 June 1998 to 22 December 1998; and for 2009, 26 sitreps were coded covering the period 11 January 2009 to 30 August 2009. It is worth noting that for the first two periods; these are all the available reports that could be located.

The 1989 sitreps cover the formative period and the initial weeks of the operation when it was established and then extended beyond the initially envisioned three months' period. The 1998 sitreps cover the period at the height of the famine crisis in that year, which was the second major famine in Sudan since the 1989 crisis which led to the establishment of OLS in the first place. The 2009 sitreps signal the beginning of another serious food crisis in Southern Sudan four years after the peace agreement was signed. The common characteristic between the three periods is that they are periods when serious food shortages and widespread hunger were threatening large numbers of the population in Southern Sudan. In addition to the food shortages, the three periods are also characterized by violence as even after the peace agreement was signed, the year 2009 witnessed violent tribal clashes and increased activity by the LRA in Southern Sudan. Although, the 1989 period signals the beginning of the large scale, integrated and internationally-coordinated relief effort in an active war zone in Sudan, it is by no means the first time that relief assistance was provided in Sudan. The significance of the 1998 and 2009 periods is that in spite of the well-established and long-standing relief operation, yet again famine was striking the very same areas as before.

The content analysis enabled me to identify the organizations that participated in the relief operation, the interactions among them and between them, and the political/military authorities on both sides of the conflict. Also through content analysis, I was able to map the locations and sectors in which the relief operation was taking place, how the significance/importance of the sectors changed over the three periods of time reflecting the changing needs on the ground and how the operation adapted to these changing needs. From a network perspective, the interactions between the different entities are not considered as properties of the entities themselves, but rather as characteristics defining the system (or the action situation) and connecting it into the larger action arena in which it exists (Knoke and Yang, 2008; Ostrom ,2005; Scott 2000). The interactions define the system as a complex adaptive system operating at multiple levels and continuously changing in response to changes in the action arena. The interactions themselves are not independent of the broader environment as they are very much affected by what rules govern the operation at the time and what forces push towards or against more interactions.

The coding of the data took place in Microsoft Excel. For each transaction, the coding of the data  listed the date of the transaction, the article (sitrep) title, the initiating organization, its type and source of funding, the transaction itself, the responding organization, its type and source of funding, the location of the transaction, and the sector to which the transaction is contributing. When the coding was completed, the total number of transactions coded and the total number of organizations participating in the relief operation during the three periods are as follows:

128

Table 5-1: Total Number of Transactions and Organizations

| Item | Number | | | | | | Total |
|------|--------|--------|--------|--------|--------|--------|-------|
| | 1989 | | 1998 | | 2009 | | |
| | N | % | N | % | N | % | |
| Transactions (All) | 1480 | 32.6 | 842 | 18.6 | 2212 | 48.8 | 4534 |
| Total no. of organizations | 93 | 29.9 | 138 | 43.4 | 228 | 71.7 | 318 |

The total number of organizations is generated using the list of organizations in Excel where data were coded. It is not the sum of the actors in 1989, 1998 and 2009 because many of the actors were parts of the operation during the three periods.

The next step, before running the SNA, was to remove all transactions that have only an initiating organization and no responding organization, i.e. all transactions involving a single actor were removed from the excel sheet. The resulting total number of transactions and organizations is as follows:

Table 5-2: Number of Transactions Involving More Than One Organization

| Item | Number | | | | | | Total |
|------|--------|--------|--------|--------|--------|--------|-------|
| | 1989 | | 1998 | | 2009 | | |
| | N | % | N | % | N | % | |
| Transaction (involving two actors) | 962 | 30.8 | 579 | 18.5 | 1586 | 50.7 | 3127 |
| Total no. of organizations | 93 | 29.2 | 71 | 22.3 | 228 | 71.7 | 318 |

The total number of organizations is generated using the list of organizations in Excel Sheet where data were coded. It is not the sum of the actors in 1989, 1998 and 2009 since many of the actors were parts of the operation during the three periods.

## 5.3     Description of the Network in 1989, 1998 and 2009

Different actors participated in the relief operation or formed part of the environment in which the relief operation existed during its long history. Table 5-3 provides a list of the types of actors and their numbers during the three points in time and their total for the three periods. It should be

pointed out that the types of actors and their numbers reflect both individual actors and groups of actors working together and reporting their action as one entity. This is what is referred to in the table below as "Mixed".

**Table 5-3: The Actors**

| Item | Number & Percentage | | | | | | |
| | 1989 | | 1998 | | 2009 | | |
| | N | % | N | % | N | % | Total (3 periods)* |
|---|---|---|---|---|---|---|---|
| Transactions (or Interaction involving two actors) | 962 | 30.8 | 579 | 18.5 | 1586 | 50.7 | 3127 |
| Total No. of Actors | 93 | 29.2 | 71 | 22.3 | 228 | 71.7 | 318 |
| Type of Actor | | | | | | | |
| Armed Group | 1 | 50 | 1 | 50 | 2 | 100 | 2 |
| Civil Society Organization | 1 | 9.1 | 3 | 27.3 | 8 | 72.7 | 11 |
| Community Authority | 0 | 0 | 1 | 100 | 1 | 100 | 1 |
| Community based Organizations | 0 | 0 | 0 | 0 | 11 | 100 | 11 |
| Consortium of INGOs and NNGOs | 1 | 50 | 0 | 0 | 1 | 50 | 2 |
| County Government | 0 | 0 | 0 | 0 | 7 | 100 | 7 |
| Diplomatic Representation | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| Donor | 27 | 79.4 | 4 | 11.8 | 11 | 32.4 | 34 |
| Donor coordinating mechanism | 0 | 0 | 0 | 0 | 1 | 100 | 1 |
| International Media | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| International NGO | 25 | 34.7 | 30 | 41.7 | 48 | 66.7 | 72 |
| International Organization (ICRC) | 1 | 50 | 1 | 50 | 2 | 100 | 2 |
| International Organization (UN) | 9 | 32.1 | 7 | 25 | 27 | 96.4 | 28 |
| Militias | 0 | 0 | 0 | 0 | 1 | 100 | 1 |
| Mixed (different types of actors) | 6 | 23.1 | 12 | 46.2 | 12 | 46.2 | 26 |
| National Government Body | 3 | 100 | 1 | 33.3 | 1 | 33.3 | 3 |
| National Humanitarian Agency | 1 | 100 | 0 | 0 | 1 | 100 | 1 |
| National NGO | 4 | 21.1 | 3 | 15.8 | 13 | 68.4 | 19 |
| Neighboring Government | 4 | 66.6 | 0 | 0 | 3 | 50 | 6 |
| NGO (group of NGOs e.g. by sector) | 1 | 25.0 | 3 | 75 | 2 | 50 | 4 |
| Opposition Army | 1 | 100.0 | 1 | 100 | 1 | 100 | 1 |
| Opposition Movement | 1 | 100.0 | 1 | 100 | 1 | 100 | 1 |
| Peace Keeping Mission | 0 | 0 | 0 | 0 | 8 | 100 | 8 |
| Political & Military Authorities | 0 | 0 | 1 | 100 | 1 | 100 | 1 |
| Political Party | 0 | 0 | 0 | 0 | 1 | 100 | 1 |
| Private Sector | 4 | 80 | 1 | 20 | 2 | 40 | 5 |
| Rebel Humanitarian Agency | 1 | 100 | 1 | 100 | 0 | 0 | 1 |
| Regional Government | 0 | 0 | 0 | 0 | 22 | 100 | 22 |
| Regional Organization | 0 | 0 | 0 | 0 | 1 | 100 | 1 |
| State Government | 0 | 0 | 0 | 0 | 39 | 100 | 39 |

| UN Common Service Facility | 0 | 0 | 0 | 0 | 1 | 100 | 1 |
| UN Team | 0 | 0 | 0 | 0 | 2 | 100 | 2 |

*Except for the total number of transactions, column 5 of totals for the three periods is not the result of the addition of columns 2, 3 and 4. This is because many of the actors remained part of the operation during the three periods. Summing up the number of the actors over the three periods will result in double counting. The total number of actors is generated using the list of organizations in Excel Sheet where data were coded.

The total number of actors, of all types, that participated in the relief operation at the three points in time is 318. The actors listed above are only the actors covered by the situation reports. It should be noted that some actors operated independently of the coordinated relief operation and did not report regularly and hence they are not included in the situation reports. Accordingly, this number might not be covering all actors working in Southern Sudan during the three periods of time. Nevertheless, it covers the majority of actors and all those participating in the coordinated relief effort.

With regards to the total number of actors, some organizations remained as part of the network during the three periods while others dropped from the network. By looking at these basic statistics, a number of facts emerge. The two main types of respondents are UN agencies and NGOs, both national and international, who were on the ground providing relief assistance during the three periods. The minimal, almost non-existent, role played by government authorities during the 1989 and 1998 periods in directly providing relief is very noticeable. This can be explained by the fact that relief assistance was provided in an active war zone in which the government was one side of the conflict. Hence, it was not conceivable that it would provide relief to affected populations on both sides of the conflict. Another noticeable fact is the large number of international NGOs, and the fact that their number has been increasing from one point in time to the other. It is also notable that the number of national NGOs increased from 3 in 1998 to 13 in 2009, and the number of community based organizations which were non-existent during the two earlier periods was 11 in 2009.

Table 5-3 also shows that the network in 2009 has the largest number of actors as compared to 1989 and 1998. In 2009, the network was operating in a post-conflict situation as compared to 1989 and 1998. With the signing of the Comprehensive Peace Agreement in 2005, government institutions at the local level were established and became active in responding to the needs of the population. The large number of actors in 2009 is, to a large extent, attributable to the presence and active role of the government and local administration whereby state governments and county authorities started playing an increasingly important role in the relief effort. In 1989 and 1998 such local administration units did not exist, and most of the relief effort was carried out by international relief organizations. In addition, in 2009 and with the end of fighting many national organizations, both NGOs and CBOs, became active in the relief and recovery effort. The number of local organizations (CSOs in general and CBOs in particular) increased considerably as many people returned to Southern Sudan from other parts of the country as well as from abroad and started organizing themselves to assist in the relief and recovery effort.

Another significant group of actors is donors. It can be seen that in 1989, their number was much higher than in 1998 and in 2009. This can be explained by the fact that 1989 was the beginning of a large, internationally-organized relief operation and much of the effort then depended on donors, their willingness to support the relief effort both financially and diplomatically by exerting pressures on the two sides of the conflict to allow assistance to reach the affected populations. In 1998, with the relief operation well established, the focus was more on the question of humanitarian space and access to the people in need as access was a major constraint in 1998. As such, the major activities were more on negotiating the humanitarian space and securing access to affected populations. In 2009 and after the signature of the peace

agreement, donor resources became available on a large scale to fund the relief and reconstruction effort.

The analysis of the situation reports reveals that some of the new actors that became part of the network after 2005 became very prominent. These new actors include the United Nations Mission in Sudan (UNMIS), the peace keeping mission established by UN Security Council Resolution 1547 of 11 June 2004 (UNMIS, 2010). UNMIS, with its many sections and units, in addition to some UN agencies which were not active in Southern Sudan before, such as UNHCR, became major actors in the relief operation in 2009. UNHCR played a prominent role in resettling refugees who returned from neighboring countries to Southern Sudan. International organizations, such as the International Organization of Migration (IOM), played a prominent role in resettling the IDPs returning from different parts of Sudan to the South. While some actors remained constant during the three periods, the changing situation after 2005 and the changing nature of the needs to which the relief operation responded brought in additional actors with different mandates and skills. This is part of the evolution of the relief operation and adaptation in responding to a changing environment.

## 5.4    ORGANIZATIONAL RISK ANALYZER (ORA)

To conduct the network analysis, the data coded in Microsoft Excel was imported into the Organizational Risk Analyzer (ORA) software which is a network analysis tool that detects an organization's structure (Carley et al., 2009). In ORA, entities and their relationships are represented by the 'Meta-Matrix' which is a collection of networks including actors, tasks, locations, resources... etc. the Meta-Matrix is the main input used in analyzing the structure of

the overall network. Analysis is based on graph theory, matrix algebra, formal logic and discrete and continuous equations to calculate measures of connections among the actors and different other entities in an organization (Carley & Reminga, 2004). ORA generate graphical representation of the network structure and yields reports on the different network and actor measures. These network and actors measures taken at three points in time will allow me to identify the overall structure of the network, the positions of key actors and how these changed and evolved overtime.

Appendix A provides the names of the organizations and the acronyms used in the network analysis.

## 5.5     SOCIAL NETWORK ANALYSIS

Social Network Analysis (SNA) is used to study the patterns of interactions between entities such as individuals, organizations and computers and to help understand their relationship to each other. The basic assumption on which SNA is based is that the relationships among interacting units are as important as the units themselves (Gretzel, 2001).  A network may be of any size with a small or a large number of actors and the basic idea of SNA is to understand the patterns of interactions between the entities through an analysis of their relationships and the frequency of their interactions. The defining feature of network analysis compared to conventional statistical analysis is that it describes actors by their relations instead of their intrinsic attributes and views them as interdependent rather than independent, autonomous entities (Gretzel, 2001; Knoke & Yang, 2008, p. 4).

Studying the relationships between actors reveals the structure of the network, how actors are located, or "embedded," within that structure as well as how the network structure itself emerges from the individual choices made by the actors and their numerous interactions (Hanneman, 2001, p. 3). Network measures that shed light on the location of the actors and the overall structure of the network include the number and lengths of pathways among the actors in a network. These measures show the patterns of connections among the actors. Networks in which the actors are strongly connected are better coordinated and information flows faster among them. This means that they are able to respond faster to any change in their environment than networks that are weakly connected (Hanneman, 2001).

### 5.5.1 Network Measures

This section will present the results of the SNA which was conducted using ORA. The network measures used are both macro and micro level measures. The macro level measures, which are measures of the overall network, include Size and Density, Fragmentation and cohesion and Krackhardt's Hierarchy Measures. The micro level measures, which pertain to actors, include measures of centrality and power. Network measures are calculated for the Meta-Matrix which includes organizations, locations and sectors covered by the relief operation at the three points in time.

The **Size** of a network, which is determined by the number of actors (nodes) and the potential number of ties among the actors, is an important measure to consider since the larger the size of a network, the more resources are required to keep it connected. As Hanneman (2005) puts it, "size is critical for the structure of social relations because of the limited resources and capacities that each actor has for building and maintaining ties. As a group gets bigger, the

proportion of all of the ties that could (logically) be present, which is the **density** of the network, will fall, and the more likely it is that differentiated and partitioned groups will emerge" (p. 41). **Fragmentation** of a network will show up when two or more subgroups of the network do not share members (Wasserman and Faust, 1994, p. 284).

In relief operations in complex humanitarian emergencies, where actors are responding to unpredictable crisis situations in a continuously and rapidly changing environment, the size and density of the network are important factors. Density, in particular, which describes how connected the actors are, indicates how quickly organizations can exchange information and resources to be able to respond to the changing situation.

The micro level measures describe how each actor is connected to the other actors in the network. An actor with many connections is an actor who has a 'central' advantageous position as it has more access to information and resources which will enable it to respond to changes in its environment more rapidly. Fewer connections indicate an isolated actor with reduced access to information and resources and hence slower response to changes in its environment. This is the **degree centrality** of the actors.

Other measures of centrality of the actors which are also important are **closeness and betweenness centrality** which give an indication of the power wielded by an actor. More central actors have structural advantage either because of their closeness to others enabling them to have a strong influence on other actors or because of their intermediary position between other actors which will enable them to control the flow of information and resources.

Table 5-4 lists the different macro and micro level measures calculated for the network and the actors and their definitions.

**Table 5-4: Network Macro and Micro Measures and Their Definitions**

| Type | Measure | Definition |
|---|---|---|
| **Macro** | Size | Number of nodes and potential ties in the network. |
| | Density | Proportion calculated by dividing the number of observed ties in a network by the number of all possible ties. It is an indication to how close a network is to a fully connected network where all the possible connections between the nodes exist. |
| | Network Fragmentation | Is a count of the number of components. The maximum fragmentation in a network occurs when every node is an isolate, that is, when there are as many components as nodes in the network. |
| | Krackhardt's graph theoretical dimensions of hierarchy | Four individually necessary and jointly sufficient conditions for the pure ideal type of hierarchy defined as an 'out-tree' graph in which all points are connected and all but one node (the boss) has an in-degree of one. |
| | Krackhardt connectedness | If all actors are connected in the same component and embedded in the same unitary structure, the graph is more hierarchical and is an out-tree graph which is a pure, ideal typical hierarchy. |
| | Krackhardt efficiency | This dimension measures the extent to which actors have a single boss. |
| | Krackhardt hierarchy | To be a pure hierarchy there should not be any reciprocated ties. Reciprocal relations between two actors imply equal status which denies pure hierarchy. |
| | Krackhardt upperboundedness | Is the extent to which all actors have a boss in common. |
| | Reciprocity | How strong is the tendency for one actor to "choose" another, if the second actor chooses the first? It is an important property of the social structure because it relates to both the balance and to the degree and form of hierarchy in a network. Percentage of nodes in a graph that are bi-directional. |
| | Centralization | Centralization measures express the degree of inequality or variance in the network as a percentage of a perfect star network of the same size. The larger the centralization index, the more likely that a single actor (or group of actors) is quite central, with the remaining actors considerably less central. |

| | | |
|---|---|---|
| | | Lower scores indicate that communication is more distributed. If all nodes were linked to only once central node (star graph), the score would be one. If all nodes were linked to each other (a complete graph), the score would be zero. |
| | Average tie length (characteristic path length) | Mean distance between nodes in the network. A lower average tie length indicates that information is communicated faster as it is transmitted through fewer intermediaries in the network. |
| | Clustering coefficients | Clustering is the tendency towards dense local networks. It is a measure used to determine whether or not the graph is a small-world network, i.e. networks that will have sub-networks that are characterized by the presence of connection between almost any two nodes within them. It is the average of the densities of the neighborhood of all the actors. |
| | | |
| **Micro** | Centrality | The nearness of a node to all other nodes in a network. It displays the ability to access information through links connecting to other nodes. |
| | In-degree centrality | Is the normalized in-degree of a node. It indicates the in-links which are the connections that a particular node receives from other nodes. |
| | Out-degree centrality | Is the normalized out-degree of a node. It indicates the connections that a particular node sends to other nodes. It is a measure of how influential the node may be. |
| | Total Degree centrality | Number of direct ties that a node has. It indicates how likely a node is to receive what information/material flows through the network. It is the normalized sum of a node's in- and out-degrees. |
| | Eigenvector centrality | It is a type of degree centrality which shows connections to centrally located nodes. It indicates that a node is central to the extent that its neighbors are central. It helps in identifying those who can mobilize others (or play an interlocutor role). A node that is connected to many well connected nodes will have a high score, while a node connected to many isolates will have a low score, even if it has a high total degree centrality. |
| | Closeness centrality | It is the average closeness of a node to the other nodes in a network. Loosely, closeness is the inverse of the average |

| | | distance in the network between the node and all other nodes. |
|---|---|---|
| | Betweenness centrality | It is the degree to which a node lies between other nodes in the network which are not directly connected to each other (i.e. a node acting as an intermediary or broker located on the shortest paths between other nodes). It indicates the number of times that nodes must pass through a certain node in order to be connected. A high betweenness centrality indicates an influential position. |
| | Hub-centrality measures | A node is hub-central to the extent that its out-links are to nodes that have many in-links. An organization is hub-central when it is sending information to a wide range of others, each of whom has many others reporting (sending links) to them. It is a generalization of Eigenvector centrality. |
| | Authority centrality | A node is authority-central to the extent that its in-links are from nodes that have many out-links. It is another generalization of Eigenvector centrality. Organizations that are authority-central receive information from a wide range of others each of whom sends information to a large number of others, i.e. its in-links are from agents that are sending links to many others. |
| | Information centrality | A network measure that takes into consideration both indirect paths as well as shortest (geodesic) paths among entities. It goes a step beyond betweenness centrality, which considers only the shortest paths, and takes into consideration the indirect paths. Entities high in information centrality are more likely to get more information and to get it faster. |
| | Clique membership count | A clique is a sub-structure that is defined as an identifiable set of nodes where every node is connected to every other node with relatively fewer connections to those in other groups. The clique count is the number of distinct cliques to which each node belongs. Organizations which are high in the number of cliques are those that belong to a large number of distinct groups. |
| | Simmelian Ties | These are ties embedded in cliques and are often associated with brokers inside such cliques. Two nodes are Simmelian-Tied to one another if they are reciprocally and strongly tied to each other and strongly tied to at least one third party in common. |

Source: compiled from the following sources: Borgatti (2006), Carley et al. (2011), Faust and Wasserman (1994), Hanneman (2005), Knoke and Yang (2008), Scott (2000).

These measures will help me to identify the structure of the operation and the locations of the actors within that structure. Calculating the measures at three points in time will reveal how the structure has changed over time and which actors retained their central positions and which became more peripheral.

## 5.5.2 Overall structure of the Network in 1989



Note: The full names of organizations and the acronyms are provided in Annex A.

**Figure 5-1: 1989 Relief Operation - Organizations Network**

The structure of the relief operation is revealed by the pattern of interconnections between the actors. The visual image of the 1989 relief operation presented in Figure 5-1 and the network measures presented in Table 5-5 show the relief operation as a complex system with a web of

interconnections among the different actors. The Network resembles the 'star network' with a number of key core actors having many ties to the other actors who are not necessarily connected to each other. These core actors, by virtue of their central location in the network, tend to play a significant role in communication and coordination among the other actors. The graph shows many peripheral actors who are not tightly connected and who are not part of the dense core of connections at the center of the network but yet, they are not completely isolated. It can be seen that there is no fragmentation in this network and component count is one – i.e. only one network exists. Even the peripheral actors are still loosely connected to the other actors.

**Table 5-5: Network Level Measures of the 1989 Network**

| Measure | Value | Measure | Value |
|---|---|---|---|
| Row count | 86 | Network fragmentation | 0.0 |
| Column count | 86 | Krackhardt connectedness | 1.00 |
| Link count | 382 | Krackhardt efficiency | 0.932 |
| Density | 0.052 | Krackhardt hierarchy | 0.678 |
| Isolate count | 0.000 | Krackhardt upperboundedness | 0.894 |
| Component count | 1.000 | Degree centralization | 0.903 |
| Reciprocity | 0.210 | Betweenness centralization | 0.258 |
| Characteristic path length | 3.837 | Closeness centralization | 0.002 |
| Clustering coefficient | 0.685 | Reciprocal | 20% of the links are reciprocal |
| Network levels (diameter) | 22.00 | | |

Looking at the network level measures of the 1989 Network, we find that the clustering coefficient of 0.685 is quite high compared to the density of 0.052 which indicates that local networks are much more densely connected than the global network, i.e. the relief operation is a

small-world network whereby although most nodes are not directly connected, yet they can be reached from every other node by a small number of steps (Watts and Strogatz, 1998). The low global density indicates limited interdependencies in the sense that the actors are still largely independent from each other.

Krackhardt measures of hierarchy are generally high with a Krackhardt efficiency score is 0.93. Although the relief operation is not a formally (or officially) established hierarchical structure, yet all actors are embedded in the same unitary structure and are mostly connected to a central group of actors which act as the 'boss'. What makes the network deviate from a pure hierarchy is the Krackhardt hierarchy and upperboundedness scores of 0.678 and 0.894 respectively. The former measure indicates that many actors have reciprocal ties which imply equal status between the actors denying pure hierarchy. This is to be expected, given that the actors are quite diverse and do not report to the same central authority.

The measures of centralization (degree, betweenness and closeness) are 0.903, 0.269 and 0.01 respectively. Degree centralization in particular is very high approaching a value of 1 while betweenness centralization is also significant. This indicates that there is significant variation in the power of individual actors given their positions in the network. It is very clear, even from the visual representation of the network, that the positional advantages in the network are unevenly distributed, with some actors occupying very central positions and others in the periphery of the network.

Moving from the measures of the overall structure of the operation to the micro-level measures of individual actors, the bar diagram in Figure 5-2 below shows the Top Ranked Organizations in 1989, which are the organization at the center (hub) of the above graph. The diagram shows the nodes that are repeatedly top-ranked in a number of centrality measures, as

defined in Table 5-4, including total degree centrality, In-degree centrality, out-degree centrality, Eigenvector centrality, closeness centrality, betweenness centrality, hub-centrality measures, authority centrality, information centrality, clique membership count, Simmelian Ties, and clustering coefficients. The value shown is the percentage of measures for which the nodes are ranked in the top three.
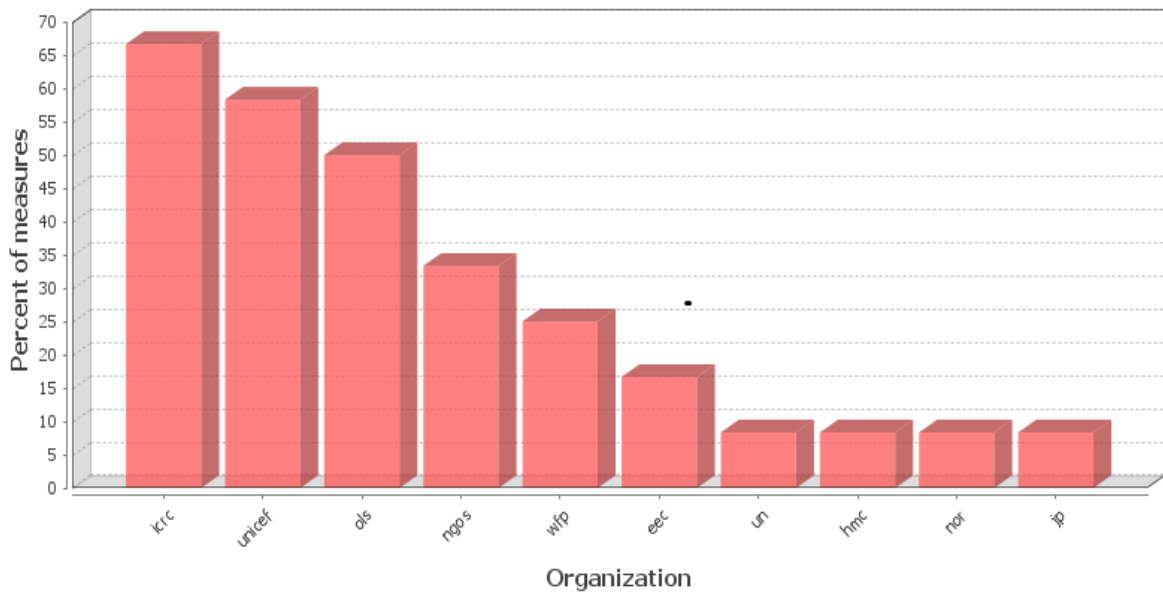


**Figure 5-2: Recurring Top-Ranked Organizations in 1989**

**Legend to Figure 5-2**

| Acronym | Organization's Name | Acronym | Organization's Name |
|---------|--------------------|---------|--------------------|
| hmc | High Ministerial Committee | ols | Operation Lifeline Sudan |
| icrc | International Committee for the Red Cross | un | United Nations |
| jp | Government of Japan | unicef | United Nations Children's Fund |
| ngos | Non-Governmental Organizations | wfp | World Food Programme |

ICRC is the top ranking organization, followed by UNICEF, OLS, NGOs, WFP, EEC, UN (which refers to the UN at the constitutional choice level of Analysis in terms of negotiations with the Government and the Rebel Movement/Army), then HMC (High Ministerial Committee,

Governments of Norway and Japan. This result falls in line with what is expected, as both ICRC and UNICEF played the main role in establishing the coordinated relief effort.  ICRC, with its mandate to work in war zones, played a significant role during the early period of the operation and UNICEF has been instrumental in establishing the relief operation and acted as its lead agency.  OLS is the coordination mechanism of the relief operation. NGOs collectively were among the top ranking actors followed by WFP, given its mandate and the prominent role it plays in food crises, then donors such as EEC, Norway and Japan. The High Ministerial Committee was a Committee established by the Government of Sudan to deal with the crisis in the South and was the Government of Sudan's interface in coordinating with the international community in organizing the relief effort in Southern Sudan.


### 5.5.2.1  Key Organizations

Table 5-6 shows the top scoring nodes side-by-side for selected measures. These are critical actors in the operation. Among the top 5 ranking actors are UN agencies, OLS, ICRC, different donors, such as the EEC, Japan, Italy, Canada, USA, Finland, and NGOs, collectively, as one actor and some individual NGOs such as the International Rescue Committee (IRC) and the Catholic Relief Services (CRS) and the Sudan Relief and Rehabilitation Association (SRRA). Looking at the actors below the top 5 ranking ones, we find other NGOs such as Norwegian Church Aid, Lutheran World Federation, Norwegian People Aid, World Vision, and the Sudan's People's Liberation Army.

**Table 5-6: Key Organizations in 1989**

| Rank | Betweenness centrality | Closeness centrality | Eigenvector centrality | In-degree centrality | Out-degree centrality | Total degree centrality |
|------|----------------------|---------------------|----------------------|---------------------|----------------------|------------------------|
| 1 | ols | eec | icrc | icrc | ols | icrc |
| 2 | wfp | irc | ngos | ngos | icrc | ols |
| 3 | unicef | jp | unicef | wfp | unicef | ngos |
| 4 | srra | It | ols | ols | usaid | wfp |
| 5 | crs | ca | srra | srra | ngos | unicef |
| 6 | un | fin | eec | unicef | wfp | srra |
| 7 | nca | finc | un | lwf | un | lwf |
| 8 | spla | frc | wfp | npa | srra | npa |
| 9 | icrc | grc | spla | spla | lwf | un |
| 10 | fr | gnc | dc | wv | spla | spla |
| 11 | usaid | jpnc | npa | un | wv | gos |
| 12 | ngos | nlc | it | nca | nca | wv |

**Legend to Table 5-6**

| Acronym | Organization's Name | Acronym | Organization's Name |
|---------|--------------------|---------|--------------------|
| ca | Government of Canada | jpnc | Japan National Committee |
| crs | Catholic Relief Services | lwf | Lutheran World Federation |
| dc | Donor Community | nca | Norwegian Church Aid |
| eec | European Economic Commission | ngos | Non-Governmental Organizations |
| fin | Government of Finland | nlc | Netherlands Committee |
| finc | Finland Committee | npa | Norwegian People Aid |
| fr | Government of France | ols | Operation Lifeline Sudan |
| frc | France Committee | spla | Sudan People Liberation Army |
| gnc | Greek National Committee | srra | Sudan Relief and Rehabilitation Association |
| gos | Government of Sudan | un | United Nations |
| grc | Germany Committee | unicef | United Nations Children's Fund |
| icrc | International Committee for the Red Cross | usaid | United States Agency for International Development |
| irc | International Rescue Committee | wfp | World Food Programme |
| it | Government of Italy | wv | World Vision |
| jp | Government of Japan | | |

Table 5-7 presents the number of cliques to which actors belonged, the clique membership count, for the 1989 Network.

**Table 5-7: Clique Membership Count in 1989**

| Rank | Actor | Value |
|---|---|---|
| 1 | ols | 38 |
| 2 | unicef | 34 |
| 3 | wfp | 33 |
| 4 | icrc | 26 |
| 5 | ngos | 24 |
| 6 | un | 20 |
| 7 | nca | 17 |
| 8 | srra | 15 |
| 9 | spla | 11 |
| 10 | usaid | 11 |
| 11 | across | 10 |
| 12 | crs | 8 |

Actors full names are provided in legend to Table 5-6.

The clique membership count shows the number of cliques or sub-groups to which each of the central actors listed in Table 5-6 belong. The larger number of cliques an actor belongs to, the more connected it is and the bigger the role it plays in communication and coordination.

As mentioned earlier, the main input into ORA is the meta-network which includes the actors, sectors and locations network. When the two later networks are added to the actors' network, the resulting overall relief operation network is provided in Figure 5-3.
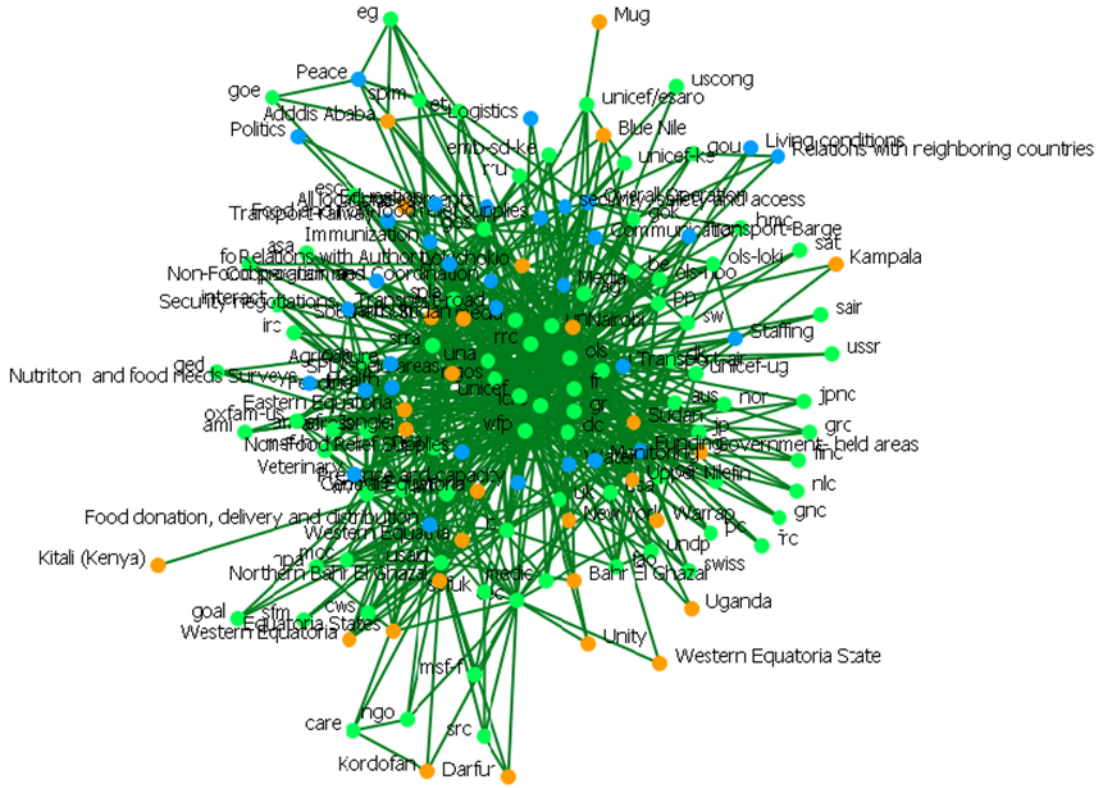
Note: The full names of organizations and the acronyms are provided in Annex A.

**Figure 5-3: 1989 Relief Operation - Network of Organizations, Sectors and Locations**

- Location : size 29
- Organization : size 86
- Task : size 33
- Organization x Location
- Organization x Organization
- Organization x Task

When the locations and sectors are added to the actors' network, the result is a more densely connected overall network. This implies that actors who were not directly connected in the actor x actor, in the overall network they become connected by virtue of working in the same location or in the same sector or both. Figure 5-3 provides a graphical representation of the overall complexity, which is the density of the meta-matrix as opposed to density, which a measure of the connectedness of the actor x actor network only**.**

147

### 5.5.2.2 Main Sectors (Tasks) in 1989

The main sectors (tasks) in which the different organizations working in Southern Sudan in 1989 focused are provided in Table 5-8 below in the order of importance of the different sectors. The table shows the centrality column degree whereby the Input network(s) are the Organization x Task (Sector) Networks.

Table 5-8:  Main Sectors (Tasks) in 1989

| Rank | Task (Sector) | Value |
|------|---------------|-------|
| 1 | Food donation, delivery and distribution | 1.00 |
| 2 | Funding | 0.516 |
| 3 | Transport-air | 0.150 |
| 4 | Cooperation and Coordination | 0.131 |
| 5 | Agriculture | 0.128 |
| 6 | security, safety and access | 0.103 |
| 7 | Immunization | 0.103 |
| 8 | Health | 0.094 |
| 9 | Relations with Authorities (military and political) | 0.081 |
| 10 | Media | 0.059 |
| 11 | Non-Food Programs | 0.056 |
| 12 | Overall Operation | 0.053 |

The table shows that the food sector, including food donations from different donor countries, delivery and distribution was the most important sector in which the organizations worked. This is followed by funding. It is worth noting that during the early days of the operation, funding and the pledges made by different donors were very important and were a determining factor in the success of the operation. Air transportation of food and the other items required was also an important sector, given the dire situation on the ground and the importance

of moving food and other items fast enough to meet the needs. In addition, the inaccessibility of some areas by road made air transportation the main means of transporting food to these areas. Cooperation and coordination was also an important sector, given the large number of organizations working together and the fact that the different processes have to be coordinated at different levels and in different geographical locations such as in the UN headquarters in New York, in Khartoum, in neighboring countries such as Kenya, Ethiopia and Uganda. Sectors such as security, safety and access, and relations with authorities were also important given that relief was provided in an active war zone where there were serious concerns about access to the affected populations and about the safety and security of the providers of relief assistance. These conditions led to continuous negotiations with the authorities on both sides of the conflicts.

Health and Immunization were also important sectors as well as agriculture and non-food programs. The distribution of agricultural inputs was viewed as an important activity to try to encourage the local populations to produce their own food to avoid similar food shortages in the future.

**5.5.2.3 Main Locations for Relief Assistance in 1989**

The main locations in which the actors focused their effort in 1989 are provided in Table 5-9 below in the order of importance of the different locations. The table shows the centrality column degree whereby the Input network(s) are the Actor x Location Networks.

149

**Table 5-9: Main Locations in 1989**

| Rank | Location | Value |
|------|----------|-------|
| 1 | Southern Sudan | 1.000 |
| 2 | Sudan | 0.896 |
| 3 | Eastern Equatoria | 0.738 |
| 4 | Central Equatoria | 0.650 |
| 5 | Jonglei | 0.383 |
| 6 | Western Equatoria | 0.295 |
| 7 | Nairobi | 0.290 |
| 8 | SPLA-held areas | 0.153 |
| 9 | Khartoum | 0.137 |
| 10 | Warrap | 0.093 |
| 11 | Adddis Ababa | 0.087 |
| 12 | New York | 0.077 |

Southern Sudan as a location includes many of the other locations mentioned in the table such as the Equatoria States, SPLA-held areas, Jonglei and Warrap States as shown in the map in figure 5.4. Many of the activities carried out by the different organizations were located throughout Southern Sudan. Some organizations worked in specific areas such as Jonglei or one of the Equatoria States. Sudan as a location refers to the overall operation taking place at different levels, the constitutional choice level where policy decisions were made, collective choice level and operational level. Nairobi and Addis Ababa were important locations as capitals of neighboring countries that took part in the relief effort since its early days. New York as the headquarters of the UN was also an important location at the constitutional choice level, where early negotiations about the establishment of the relief operation took place.
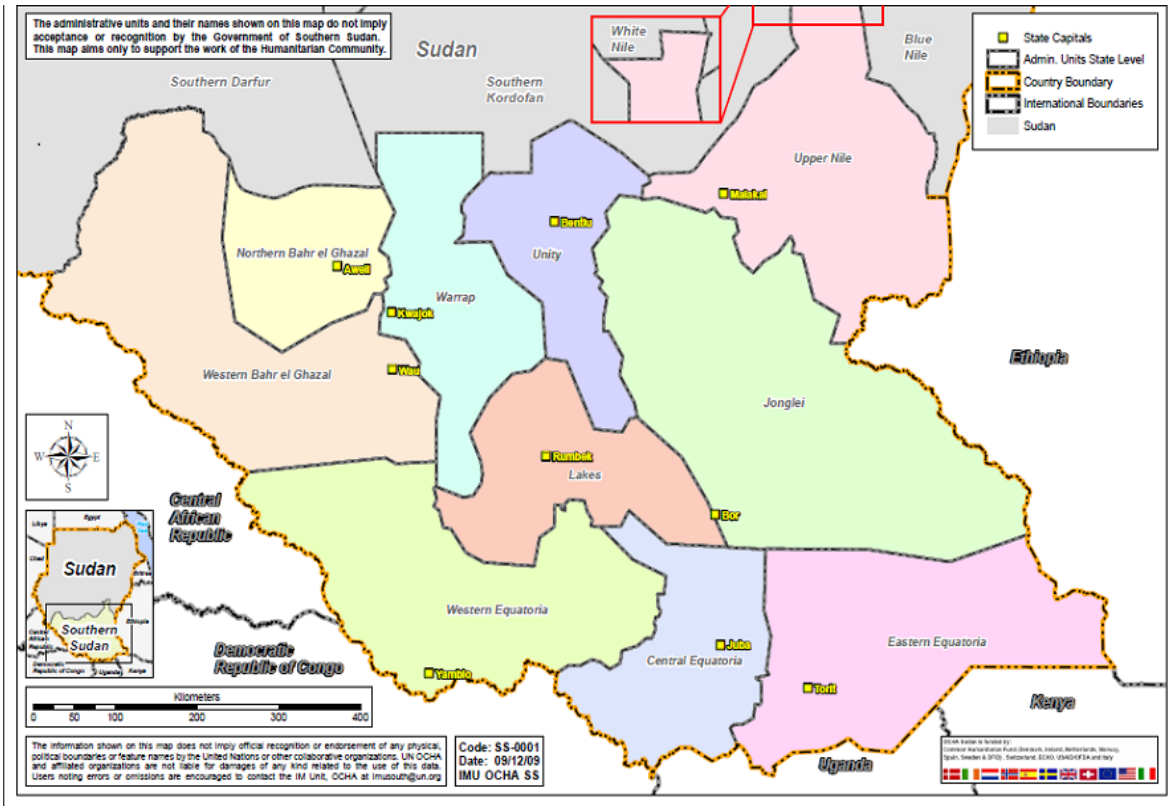
Source: OCHA (2009). Sudan Map Centre

**Figure 5-4: Map of Southern Sudan**

### 5.5.3  Overall structure of the Network in 1998
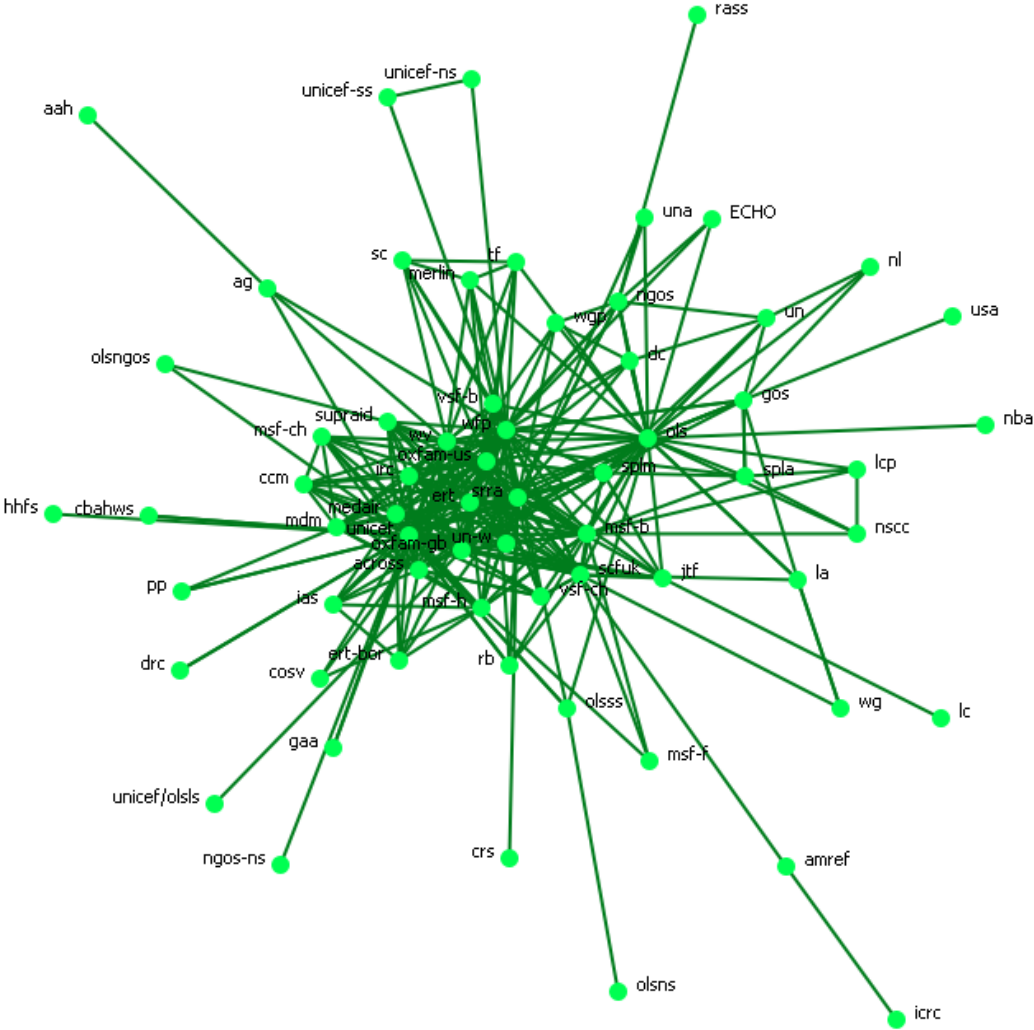


Note: The full names of organizations and the acronyms are provided in Annex A.

**Figure 5-5: 1998 Relief Operation - Organizations Network**

In 1998, the structure of the relief operation, as revealed by the actors' network in Figure 5-5 and the network measures in Table 5-10, is still characterized by a densely connected center and a number of peripheral organizations. The resemblance to the star network remains, but with

a number of core actors at the center instead of the sole actor in the ideal star network. The relief operation continues to be a cohesive one with no fragmentation as all actors are connected together.

Table 5-10: Network Level Measures of the 1998 Network

| Measure | Value | Measure | Value |
|---|---|---|---|
| Row count | 65 | Network fragmentation | 0.000 |
| Column count | 65 | Krackhardt connectedness | 1.000 |
| Link count | 350 | Krackhardt efficiency | 0.891 |
| Density | 0.083 | Krackhardt hierarchy | 0.543 |
| Isolate count | 0.000 | Krackhardt upperboundedness | 0.938 |
| Component count | 1.000 | Degree centralization | 0.901 |
| Reciprocity | 0.238 | Betweenness centralization | 0.150 |
| Characteristic path length | 2.925 | Closeness centralization | 0.027 |
| Clustering coefficient | 0.384 | Reciprocal | 23% of the links are reciprocal |
| Network levels (diameter) | 9.000 | | |

The number of actors in 1998 is 65 with a link account of 350. The clustering coefficient is high compared to the density (0.384 compared to 0.083) which reveals that the pattern of more densely connected local neighborhoods compared to the global network still remains.

Krackhardt's measures of hierarchy remain high revealing that the network is generally hierarchical with all actors embedded in the same structure and connected to a central group of nodes. 23% of the ties among the nodes are reciprocal revealing an equal status among many of the actors and negating the existence of a pure hierarchy where the relationships are unidirectional. Reciprocal ties reflect an exchange relationship whereby actors send and receive information as equals. The measure shows that almost one quarter of the links in the network are reciprocal.

153

The measures of centralization (degree, betweenness and closeness) are 0.901, 0.150 and 0.027 respectively revealing that the variation in the positional advantage and power of individual actors continues.

Moving from the measures of the overall structure of the operation to the micro-level measures of individual actors, the bar diagram in Figure 5-6 below shows the Top Ranked Organizations in 1998, which are the organization at the center (hub) of the graph in Figure 5-5.
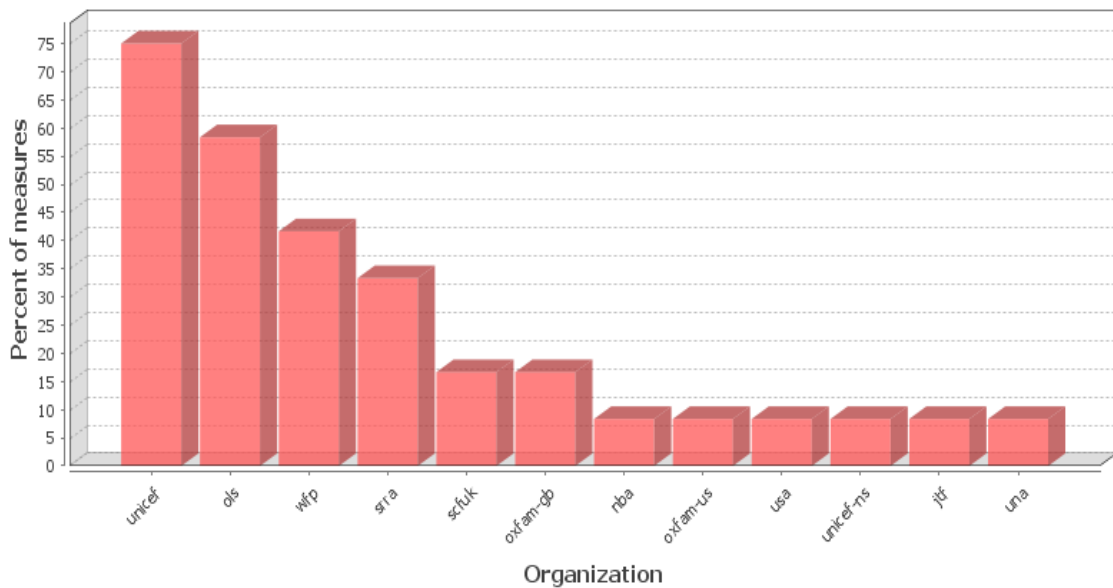


**Figure 5-6: Recurring Top-Ranked Organizations in 1998**

**Legend to Figure 5-6**

| Acronym | Organization's Name | Acronym | Organization's Name |
|---------|--------------------|---------|--------------------|
| ols | Operation Lifeline Sudan | una | United Nations Agencies |
| oxfam-gb | Oxfam-GB | unicef | United Nations Children's Fund |
| oxfam-us | OXFAM-US | unicef-ns | UNICEF Northern sector |
| nba | Nairobi-based agencies | usa | Government of United States of America |
| scfuk | Save the Children Fund - UK | wfp | World Food Programme |

UNICEF is the top ranking organization, followed by OLS and WFP. The Sudan Relief and Rehabilitation Association (SRRA), which is the humanitarian wing of the Sudan People's Liberation Movement, is ranked fourth which reveals that in 1998 it was playing a more

154

substantial role in the relief effort than before.  Individual International NGOs such as Save the Children UK, Oxfam Great Britain and Oxfam USA also ranked among the top actors in 1998. The role of organizations working across the border such as a number of UN agencies and NGOs working from Nairobi (Nairobi-based Agencies – nba) is becoming more prominent in 1998 as compared to 1989.

It is worth noting that the ICRC was not among the top ranking organizations in 1998. This can be attributed to the fact that, after the initial stage of the operation during which ICRC had been working closely within OLS, ICRC was working more independently from OLS and as such it was absent from situation reports covering the activities of OLS and the different organizations working within it.  More information on this point is provided in the "Limitations Section" of the last chapter.

### 5.5.3.1    Key Organizations in 1998

Table 5-11 below shows the top scoring nodes side-by-side for selected measures. These are critical actors occupying central in the operation. OLS, UNICEF and WFP remain among the top ranking actors joined by international NGOs such as Save the Children UK, Oxfam Great Britain, Oxfam USA, International Rescue Committee, Catholic Relief Services, World Vision and MSF-Belgium. SRRA appears as a prominent actor in 1998; it ranked second in in-degree centrality, third in total degree centrality, and fourth in betweenness centrality. This is an indication of the important role SRRA, as the humanitarian wing of the SPLM/A, came to play in the coordination of the relief operation. The role of actors other than the providers of aid is also apparent in 1998 whereby one Armed Group (AG) is ranked second in closeness centrality.  This shows the impact of the different warring factions and armed groups on the cooperation. In 1998, they became an important actor with which the providers of relief have to deal.  Also the role of

155

teams formed from different organizations to support the relief effort such as the Joint Task Force which includes members of the OLS (UN and NGOs), the SRRA and the SPLM and the Emergency Response Team which includes members from UN agencies and NGOs became more prominent. These joints teams carried out different activities such as assessments, logistics and the distribution of relief supplies. They also ensured that the distribution targeted the neediest and most vulnerable people.

**Table 5-11: Key Organizations in 1998**

| Rank | Betweenness centrality | Closeness centrality | Eigenvector centrality | In-degree centrality | Out-degree centrality | Total degree centrality |
|------|------------------------|----------------------|------------------------|----------------------|-----------------------|-------------------------|
| 1 | ols | jtf | unicef | unicef | unicef | unicef |
| 2 | unicef | ag | ols | srra | ols | Ols |
| 3 | wfp | unicef-ns | scfuk | oxfam-gb | wfp | srra |
| 4 | srra | wgp | oxfam-gb | wfp | scfuk | wfp |
| 5 | wv | ert-bor | oxfam-us | oxfam-us | oxfam-us | oxfam-us |
| 6 | splm | unicef-ss | srra | scfuk | srra | oxfam-gb |
| 7 | irc | usa | wfp | ols | wv | scfuk |
| 8 | msf-b | crs | ngos | ngos | oxfam-gb | Wv |
| 9 | msf-h | unicef/olsls | wv | wv | msf-h | gos |
| 10 | oxfam-us | wfp | medair | msf-b | medair | medair |
| 11 | scfuk | splm | jtf | gos | jtf | ngos |
| 12 | oxfam-gb | across | msf-h | splm | gos | msf-b |

**Legend to Table 5-11**

| Acronym | Organization's Name | Acronym | Organization's Name |
|---------|---------------------|---------|---------------------|
| across | Association of  Christian Resource | oxfam-us | OXFAM-US |
| ag | Armed group | scfuk | Save the Children Fund - UK |
| crs | Catholic Relief Services | splm | Sudan People Liberation Movement |
| ert-bor | Emergency Reponse Team-Bor | srra | Sudan Relief and Rehabilitation Association |
| gos | Government of Sudan | unicef | United Nations Children's Fund |
| irc | International Rescue Committee | unicef/olsls | UNICEF/OLS Livestock section |
| jtf | Joint Task Force | unicef-ns | UNICEF Northern sector |
| medair | MEDAIR | unicef-ss | UNICEF Southern Sector |
| msf-b | Medicins sans Frontiers-Belgium | usa | Government of USA |
| msf-h | medicins sans frontiers-Holland | wfp | World Food Program |
| ngos | Non-Governmental Organizations | wgp | Working Group |
| ols | Operation Lifeline Sudan | wv | World Vision |
| oxfam-gb | Oxfam-GB | | |

Table 5-12 presents the number of cliques to which actors belonged, the clique membership count, for the 1998 Network.

**Table 5-12: Clique Membership Count in 1998**

| Rank | Actor | Value |
|------|----------|-------|
| 1 | unicef | 29 |
| 2 | wfp | 26 |
| 3 | ols | 24 |
| 4 | srra | 16 |
| 5 | wv | 14 |
| 6 | oxfam-us | 14 |
| 7 | msf-b | 13 |
| 8 | scfuk | 12 |
| 9 | oxfam-gb | 12 |
| 10 | msf-h | 10 |

The clique membership count shows the number of cliques or sub-groups to which each of the central actors belong. The larger number of cliques an actor belongs to, the more connected it is and the bigger the role it plays in communication and coordination. UNICEF, WFP, OLS remained among the organizations with the largest number of clique counts indicating their central position.

The graphical representation of the network in Figure 5-7 below shows the overall network, including actors, sectors in which the different actors work and locations in 1998.
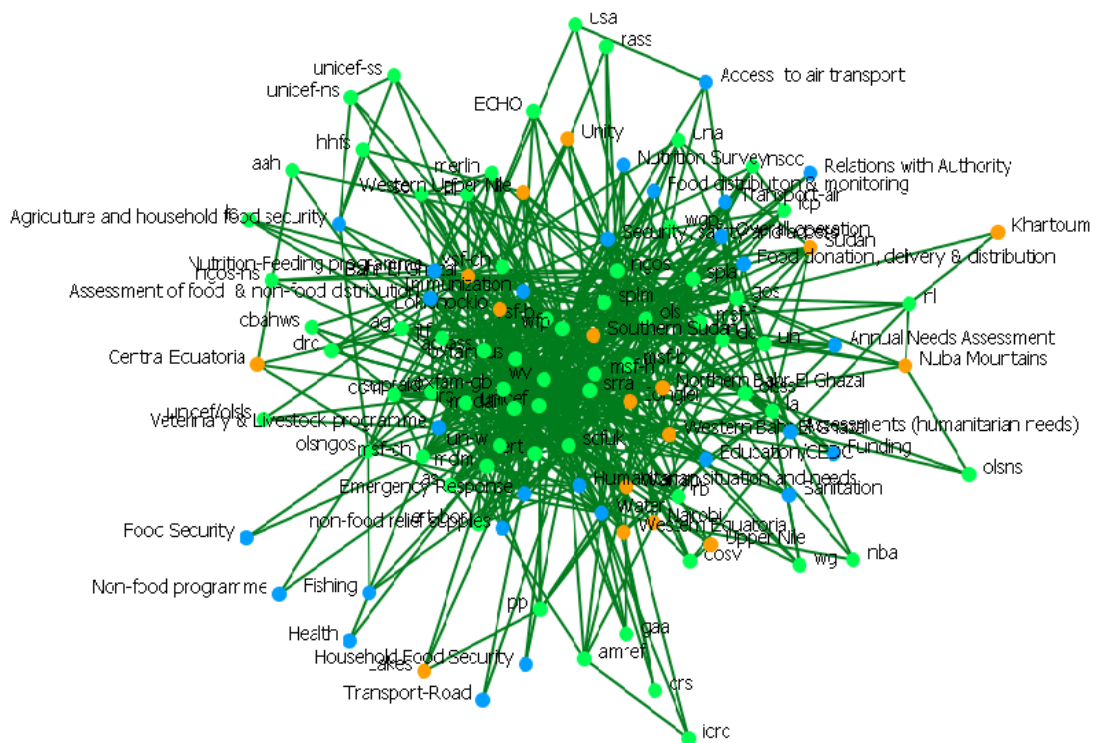
Note: The full names of organizations and the acronyms are provided in Annex A.

**Figure 5-7: 1998 Relief Operation - Network of Organizations, Sectors and Locations**

| | |
|---|---|
| ☑ 🟠 | Location : size 17 |
| ☑ 🟢 | Organization : size 65 |
| ☑ 🔵 | Task : size 28 |
| ☑ ── | Organization x Location |
| ☑ ── | Organization x Organization |
| ☑ ── | Organization x Task |

When the locations and sectors networks are added to the actors' network, a more densely connected overall network results. This implies that even if actors are not directly connected in the actor x actor network, yet they can still be connected by virtue of working in the same location or in the same sector or both. Figure 5-7 provides a graphical representation of the overall complexity, which is the density of the meta-matrix as opposed to density, which a

158

measure of the connectedness of the actor x actor network only sectors and locations) as opposed to density, which a measure of the connectedness of the actor x actor network only.

### 5.5.3.2 Main Sectors (Tasks) in 1998

Table 5-13 below ranks the main sectors (tasks) in which the different organizations working in Southern Sudan in 1998 focused. The table shows the centrality column degree whereby the Input network(s) are the Organization x Sector (Task) Networks.

**Table 5-13: Main Sectors (Tasks) in 1998**

| Rank | Sectors (Tasks) | Value |
|------|-----------------|-------|
| 1 | Assessment of food & non-food distribution | 1.000 |
| 2 | Emergency Response | 0.905 |
| 3 | Immunization | 0.851 |
| 4 | Water | 0.743 |
| 5 | Veterinary & Livestock program | 0.703 |
| 6 | Nutrition-Feeding program | 0.608 |
| 7 | Humanitarian situation and needs | 0.581 |
| 8 | Security, safety and access | 0.459 |
| 9 | Education/CEDC | 0.365 |
| 10 | Food distribution & monitoring | 0.311 |
| 11 | Assessments (humanitarian needs) | 0.270 |
| 12 | Overall operation | 0.135 |

The food sector remains important, but the focus in 1998 is more on assessments of both food and non-food items distribution as in 1998; access and distribution were more of a problem than the availability of food itself. The response to the emergency, which included activities such as assessments, logistics, and distribution of relief supplies undertaken by different agencies is ranked second in importance. New sectors that were not covered in 1989 include water,

Veterinary & Livestock program, Nutrition and Feeding program and Education and Children in Especially Difficult Circumstances (CEDC). The inclusion of these new sectors reveals how, after nine years in existence, the relief operation diversified its programs and expanded from the mere provision of relief assistance towards programs that aim at fostering livelihood activities and creating longer-term benefits.

### 5.5.3.3    Main Locations for Relief Assistance in 1998

In 1998, the focus of the relief operation was Bahr El Ghazal State which is the state most severely affected by famine and where the humanitarian space was very restricted because of government bans on flights to the area. Southern Sudan as a whole is ranked second, although the focus was on Bahr El Ghazal, the operation continued in other parts of Southern Sudan as well. Lokichoggio, which is a town in northwest Kenya and only 30 kilometers from the border with Sudan, became the host of OLS and a hub and a strategic airbase for its activities especially the airdrops of food aid (WFP 2011). Jonglei and Warrap states remained among the main locations covered by the operation.  In addition, the States of Western and Northern Bahr El Ghazal and Upper Nile and the Nuba Mountains were also covered by the relief operation. Nairobi remained a key location significant to the operation.

Table 5-14 shows the centrality column degree whereby the Input network(s) are the Actor x Location Networks

**Table 5-14: Main Locations in 1998**

| Rank | Location | Value |
|------|----------|-------|
| 1 | Bahr El Ghazal | 1.000 |
| 2 | Southern Sudan | 0.388 |
| 3 | Lokichockio | 0.369 |
| 4 | Jonglei | 0.224 |
| 5 | Western Bahr El Ghazal | 0.182 |
| 6 | Warrap | 0.126 |
| 7 | Northern Bahr El Ghazal | 0.126 |
| 8 | Sudan | 0.065 |
| 9 | Western Upper Nile | 0.065 |
| 10 | Nairobi | 0.033 |
| 11 | Upper Nile | 0.033 |
| 12 | Nuba Mountains | 0.028 |

## 5.5.4 Overall structure of the Network in 2009

In 2009, the relief operation had a significantly higher number of actors resulting in a higher number of links counted. The tendency of having a very densely connected center with a large number of organizations loosely connected to the center still remains and seems to be a defining characteristic of the relief operation throughout its history.
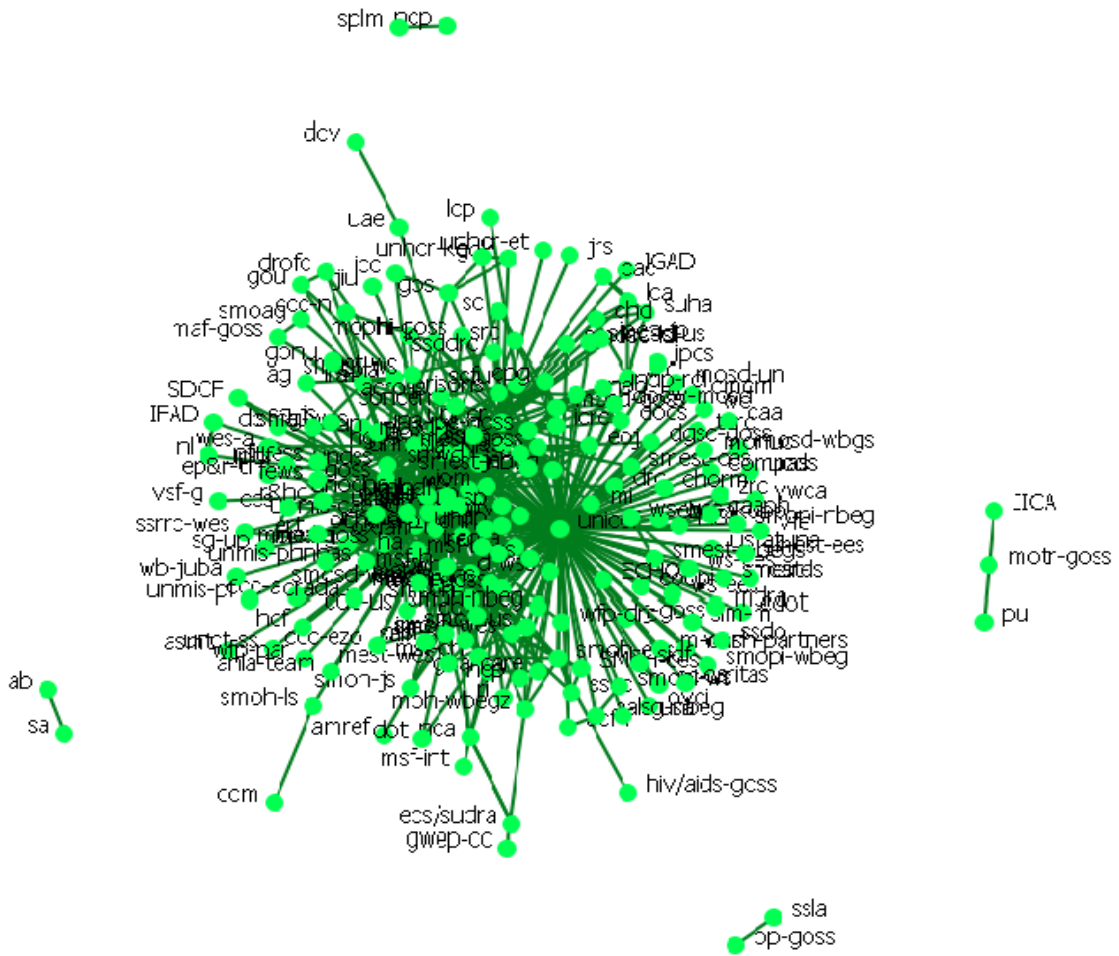
Note: The full names of organizations and the acronyms are provided in Annex A.

**Figure 5-8: 2009 Relief Operation – Organizations Network**

As shows in Figure 5-8, the 2009 relief network is more fragmented with a component count of 5 and a Krackhardt connectedness score of less than one. The nodes isolated from the main network but connected together are the Sudan People's Liberation Movement and the National Congress Party, which are the two parties that signed the peace agreement and are operating at a higher level, the constitutional choice level. A second component includes the Office of the President – the Government of South Sudan and the South Sudan Legislative Assembly. A third component includes Arrow Boys, which is an armed group, and State

Authorities, while the fourth component includes the Japanese International Cooperation Agency (JICA), the Ministry of Transport and Roads – Government of Southern Sudan and the Porter's Union, which is a civil society organization. The fifth component is the main network.

**Table 5-15: Network Level Measures 2009**

| Measure | Value | Measure | Value |
|---|---|---|---|
| Row count | 215 | Network fragmentation | 0.082 |
| Column count | 215 | Krackhardt connectedness | 0.918 |
| Link count | 816 | Krackhardt efficiency | 0.977 |
| Density | 0.018 | Krackhardt hierarchy | 0.665 |
| Isolate count | 0.000 | Krackhardt upperboundedness | 0.960 |
| Component count | 5.000 | Degree centralization | 0.961 |
| Reciprocity | 0.190 | Betweenness centralization | 0.268 |
| Characteristic path length | 3.794 | Closeness centralization | 0.007 |
| Clustering coefficient | 0.276 | Reciprocal | 19% of the links are reciprocal |
| Network levels (diameter) | 27.000 | | |

The network level measures presented in Table 5-15 show that the clustering coefficient of 0.276  is almost 15 times the density of the network of 0.018; showing that the dense local neighborhoods compared to global networks continue as a feature of the relief operation, where organizations work together; are interdependent in some aspects but still operate largely independently.

Although the Krackhardt Connectedness measure is less than one (0.918) in the 2009 network, indicating deviation from the ideal type hierarchy, yet the efficiency and upperboundedness measures (0.977 and 0.960 respectively) are quite high indicating that a single organization or a core group of organizations is playing the lead role in the coordination of the operation.   Although these three Krackhardt measures point towards a more hierarchical

structure, yet Krackhardt's hierarchy measure (0.665) is relatively low because of the reciprocated ties among the actors. 19% of the ties among the actors are reciprocal indicating their equal status which contradicts the ideal type hierarchy where there is only one boss or 'leading actor'.

The Degree centralization measure is of 0.961 is very high reflecting that power and positional advantages are unequally distributed in the network.

The bar diagrams in Figure 5-9 below shows the top Ranked Organizations in 2009. UNICEF and WFP remain top ranked and are joined by UNHCR, which in 2009 was playing a significant role in the settlement of refugees returning to Southern Sudan. The South Sudan Relief and Rehabilitation Commission (SSRRC), which replaced the SSRA, UN OCHA and the UN Resident Coordinator Support Office (UNRCSO) are among the top ranking organization. The three play coordination roles among the different actors. The SSRRC is the Southern Sudan Government body responsible for coordinating relief and rehabilitation throughout Southern Sudan. UNOCHA is responsible for"... bringing together humanitarian actors to ensure a coherent response to emergencies" (OCHA, 2010) while UNRCSO is mandated by the UN Country Team in Sudan "… to coordinate recovery and development activities within the Framework of the Comprehensive Peace Agreement (CPA), the Eastern Sudan Peace Agreement (ESPA), and the Darfur Peace Agreement (DPA)" (RCSO, 2009). IFAD, the International Fund for Agricultural Development is another key player in 2009 as well as the State Ministry of Health – Lake State. It is noteworthy that this is the first time that a State Ministry is among the top ranked actors. The National Congress Party, the ruling party in Northern Sudan, and one of the signatories of the Peace Agreement is also among the top ranking organizations as well as the Sudan's People Liberation Movement, the ruling party in Southern Sudan and the other signatory

of the Peace Agreement. IGAD, the Inter-Governmental Authority on Development in East Africa was another key organization in the network.
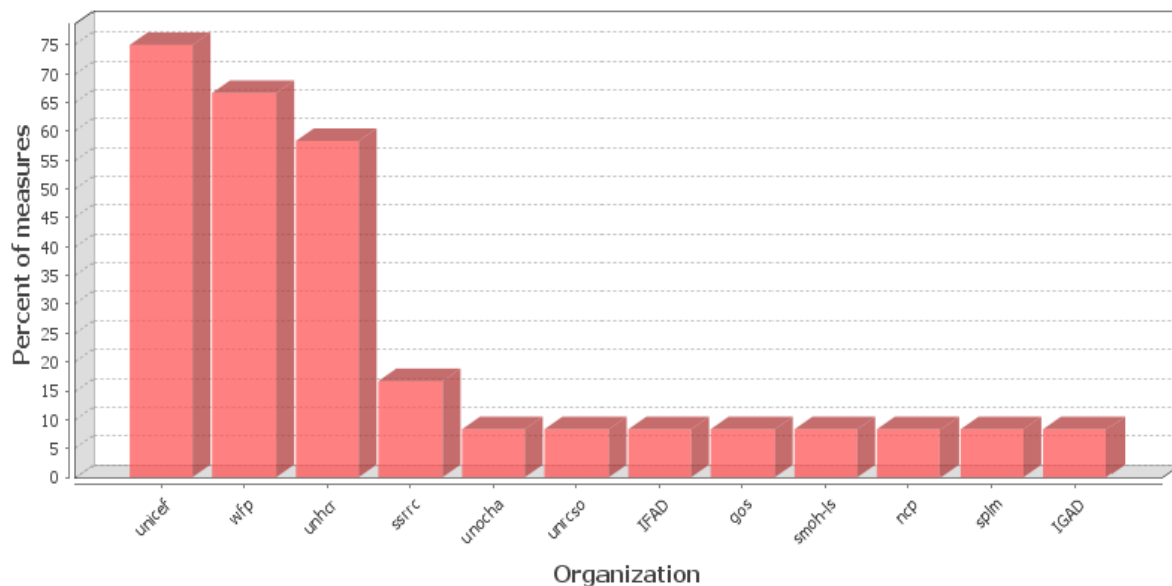


**Figure 5-9: Recurring Top-Ranked Organizations in 2009**

**Legend to Figure 5-9**

| Acronym | Organization's Name | Acronym | Organization's Name |
|---------|---------------------|---------|---------------------|
| ifad | UN International Fund for Agricultural Development | unhcr | UN High Commission for Refugees |
| igad | Inter-Governmental Authority on Development | unicef | United Nations Children's Fund |
| ncp | National Congress Party | unocha | UN Office of the Coordination of Humanitarian Affairs |
| smoh-ls | State Ministry of Health-Lakes | unrcso | UN Resident Coordinator Support Office |
| splm | Sudan People Liberation Movement | wfp | World Food Programme |

### 5.5.4.1  Key Organizations in 2009

Table 5-16 below shows the top scoring organizations side-by-side for selected measures. In addition to the UN agencies, both which have been operating since 1989 and those joining the operation in 2009, the table shows that a large number of government entities at different levels are now among the key actors in the operation. These include the Government of Sudan (gos), the State Ministry of Health – Lakes State (smoh-ls), the Office of the President – Government

of South Sudan (op-goss), Ministry of Transport and Roads – Government of South Sudan (motr-goss), and different State Authorities (sa). The National Congress Party (ncp) and the Sudan People's Liberation Movement (splm), the two signatories of the peace agreement are also among the top ranked actors. In addition, and the South Sudan Relief and Rehabilitation Commission (ssrrc) and the Child Protection Group (cpg), which is group composed of Government, UN and ICRC representatives are among the key actors in 2009. Also among the top ranked actors, we find UNMIS and IOM in addition to the NGOs such as Medair, Danish Refugee Council (drc) and World Vision (wv).

**Table 5-16: Key Organizations in 2009**

| Rank | Betweenness centrality | Closeness centrality | Eigenvector centrality | In-degree centrality | Out-degree centrality | Total degree centrality |
|------|------------------------|----------------------|------------------------|----------------------|-----------------------|-------------------------|
| 1 | unicef | gos | unicef | unicef | unicef | unicef |
| 2 | unhcr | smoh-ls | ncp | wfp | unhcr | wfp |
| 3 | unocha | ifad | splm | ssrrc | wfp | unhcr |
| 4 | wfp | cpg | sa | unrcso | ssrrc | ssrrc |
| 5 | unmis | drc | ab | unocha | unocha | unrcso |
| 6 | ssrrc | ucdc | ssla | unhcr | who | unocha |
| 7 | fao | mosd-wbgs | op-goss | iom | iom | iom |
| 8 | unjlc | card | motr-goss | ngos | unrcso | who |
| 9 | medair | ywca | wfp | unmis | unmis-rrr | unmis-rrr |
| 10 | unmis-rrr | smest-ls | unhcr | wv | unjlc | unmis |
| 11 | goss | smosd-us | ssrrc | medair | goss | unjlc |
| 12 | unrcso | monuc | iom | unmis-rrr | unmis | ngos |

**Legend to Table 5-16**

| Acronym | Organization's Name | Acronym | Organization's Name |
|---------|---------------------|---------|---------------------|
| ab | Arrow Boys | smoh-ls | State Ministry of Health-Lakes |
| card | Community Agency for Research and Development | smosd-us | State Ministry of Social Development-Unity State |
| cpg | Child Protection Group | splm | Sudan People Liberation Movement |
| drc | Danish Refugee Council | ssla | South Sudan Legislative Assembly |
| fao | Food and Agriculture Organization | ssrrc | South Sudan Relief and Rehabilitation Commission |
| gos | Government of Sudan | ucdc | Unity Cultural Development Center |
| goss | Government of Southern Sudan | unhcr | UN High Commission for Refugees |
| IFAD | UN International Fund for Agricultural Development | unicef | United Nations Children's Fund |
| iom | International Organization of Migration | unjlc | UN Joint Logistics Centre |
| medair | MEDAIR | unmis | United Nations Mission in Sudan |
| monuc | UN Mission DR Congo | unmis-rrr | UNMIS Return, Reintegration and Recovery Section |
| mosd-wbgs | State Ministry of Social Development-Western Bahr El Ghazal | unocha | UN Office of the Coordination of Humanitarian Affairs |
| motr-goss | Ministry of Transport and Roads-Government of Southern Sudan | unrcso | UN Resident Coordinator Support Office |
| ncp | National Congress Party | wfp | World Food Program |
| ngos | Non-Governmental Organizations | who | World Health Organization |
| op-goss | Office of the President-Goss | wv | World Vision |
| sa | State Authorities | ywca | Young Women Christian Association |
| smest-ls | State Ministry of Education, Science and Technology -Lakes | | |

Table 5-17 presents the number of cliques to which the actors belonged, the clique membership count, for the 2009 Network.

**Table 5-17: Clique Membership Count in 2009**

| Rank | Organization | Value |
|------|-------------|-------|
| 1 | unicef | 113 |
| 2 | wfp | 60 |
| 3 | unhcr | 52 |
| 4 | ssrrc | 52 |
| 5 | unocha | 45 |
| 6 | unjlc | 41 |
| 7 | unrcso | 34 |

| 8 | who | 34 |
| 9 | unmis | 30 |
| 10 | medair | 26 |

The central role played by UNCIEF in the relief operation throughout the three periods is further revealed by the number of cliques to which it belongs throughout the three periods. Although in 2009, there are two UN bodies mandated with coordination, UNOCHA and UNRCSO, yet UNICEF continued to play a central role in the relief operation and had a clique membership count of 113 while the next organization WFP has a clique membership count of 60.

Moving from a focus on the actors' network only to the overall network, the graphical representation of the network in Figure 5-10 below shows the overall network, including organizations, sectors and locations in which the different actors worked in 2009.
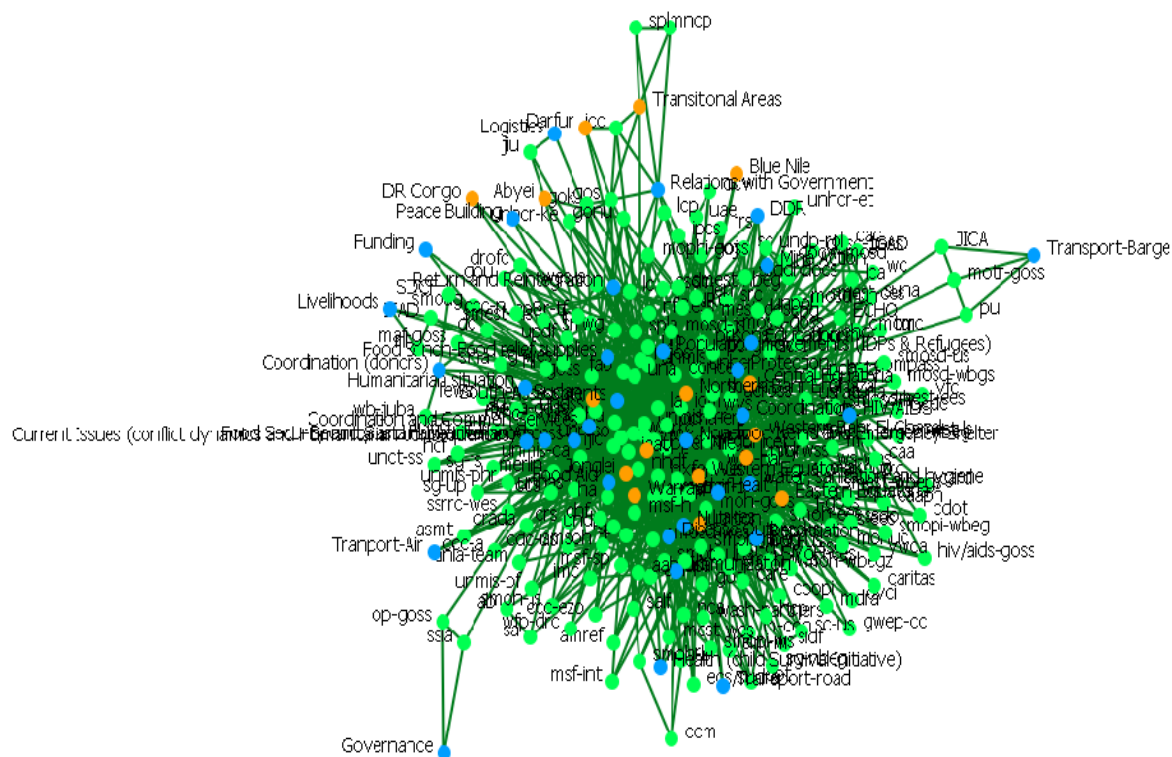


Note: The full names of organizations and the acronyms are provided in Annex A.

168

**Figure 5-10: 2009 Relief Oepration - Network of Organizations, Sectors and Locations**
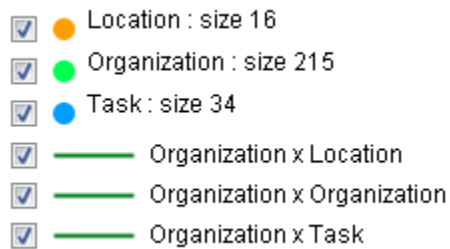


Adding the sectors and locations resulted in a very densely connected network with 265 nodes and 1857 links among them.  Unlike the actor x actor network, the complete network has a component count of 1 which indicates that actors who are not directly connected to each other are connected through the sectors or the locations in which they work.

### 5.5.4.2  Main Sectors (Tasks) in 2009

The main sectors in which the different organizations in Southern Sudan were working in 2009, as shows in Table 5-18, are security and humanitarian access, food aid, protection, population movements, non-food items and emergency shelter, diseases, assessments, nutrition, water, sanitation and hygiene, coordination and common service and immunization.  The extension of activities to sectors such as protection and population movement is a noticeable addition to the sectors in which the relief operation traditionally focused. It is noteworthy that although in 2009, the relief operation was taking place in a post-conflict environment, yet, security and humanitarian access remained a concern and an important task in which the organizations are involved. One would expect that with the signing of the peace agreement, that access should become less of an issue than during the time of active fighting. But given that tribal conflicts still continue, humanitarian access remained an issue (you can use one of IRIN 2009 issues)

**Table 5-18: Main Sectors (Tasks) in 2009**

| Rank | Task | Value |
|---|---|---|
| 1 | Security and Humanitarian Access | 1.000 |
| 2 | Food Aid | 0.856 |
| 3 | Protection | 0.723 |
| 4 | Population movements (IDPs & Refugees) | 0.612 |
| 5 | Non-food Items and Emergency Shelter | 0.596 |
| 6 | Disease Outbreaks | 0.511 |
| 7 | Assessments | 0.463 |
| 8 | Nutrition | 0.431 |
| 9 | water, sanitation and hygiene | 0.420 |
| 10 | Coordination and Common Services | 0.420 |
| 11 | Education | 0.383 |
| 12 | Immunization | 0.372 |

## 5.5.4.3 Main Locations in 2009

The main locations in which the different organizations focused their effort in 2009 are provided in Table 5-19 below, in the order of importance of the different locations. The table shows the centrality column degree whereby the Input network(s) are the Actor x Location Networks.

**Table 5-19: Main Locations in 2009**

| Rank | Location | Value |
|---|---|---|
| 1 | Southern Sudan | 1.000 |
| 2 | Western Equatoria | 0.928 |
| 3 | Central Equatoria | 0.609 |
| 4 | Jonglei | 0.583 |
| 5 | Upper Nile | 0.339 |
| 6 | Lakes | 0.261 |
| 7 | Eastern Equatoria | 0.230 |
| 8 | Northern Bahr El Ghazal | 0.227 |
| 9 | Unity | 0.132 |

| 10 | Western Bahr El Ghazal | 0.112 |
|----|------------------------|-------|
| 11 | Warrap | 0.103 |
| 12 | Transitional Areas | 0.011 |

In 2009, it is noted that Southern Sudan as a whole was a focus of the operation. A number of States in Southern Sudan were also the locations of activities by the different agencies. The Transitional Areas, the three states of Abyei, South Kordofan and Blue Nile, which are the border areas between North and South Sudan, were among the important locations whereby relief activities has been taking place.

## 5.6    CONCLUSION

The chapter presented the results of the Network Analysis of the Operation at 3 points in time.  Generally, the network displayed more or less the same structure reflected by dense connections among a core group of actors and relatively loose connections among the remaining actors. This corresponds to O'Toole's (1997) statement that networks exhibit some structural stability (p. 45). The network also showed a high clustering coefficient compared to a low overall density indicating that local connections are much stronger than network global connections.

With regards to the sectors, we find that some new sectors were added to the operation in 1998 and 2009 reflecting its evolution and adaptation to the changing conditions of the emergency. As for the locations, the relief operation continued to cover the whole of Southern

Sudan with some states, where the food crisis was worse, getting additional attention at different points in time.

The findings presented in this chapter will be discussed in detail in Chapter 6.

## 6.0    DISCUSSION

This chapter discusses the results of the descriptive analysis of Chapter Four and the social network analysis (SNA) presented in Chapter Five against the background of complex emergencies and in the context of the theoretical framework of the study as explicated in Chapter Two. The theoretical framework allows us to study the relief operation as an open, complex adaptive system made up of a network of interrelated and interdependent actors.  The descriptive analysis and the social network analysis together form the basis for understanding the relief operation as an action situation within a broader action arena and for answering the research questions of this study, which are: 1. How do agencies involved in a relief operation coordinate their work as revealed by their interactions? 2. What is the underlying structure of the relief operation? 3. How does a relief operation evolve over time to adapt to the changing conditions of the emergency? And 4. How and why do certain institutions emerge and then disappear?

## 6.1    COMPARISION OF THE RELIEF OPERATION AT THE THREE POINTS IN TIME

Table 6-1 below reproduces the network measures of the actors's network as presented in Chapter Five side by side for the network in 1989, 1998 and 2009 for the sake of comparison.

**Table 6-1: Network Measures in 1989, 1998 and 2009**

| Network | 1989 | 1998 | 2009 |
|---|---|---|---|
| Row count | 86 | 65 | 215 |
| Column count | 86 | 65 | 215 |
| Link count | 382 | 350 | 816 |
| Density | 0.052 | 0.083 | 0.018 |
| Isolate count | 0.000 | 0.000 | 0.000 |
| Component count | 1.000 | 1.000 | 5.000 |
| Reciprocity | 0.210 | 0.238 | 0.190 |
| Characteristic path length | 3.837 | 2.925 | 3.794 |
| Clustering coefficient | 0.685 | 0.384 | 0.276 |
| Network levels (diameter) | 22.000 | 9.000 | 27.000 |
| Network fragmentation | 0.000 | 0.000 | 0.082 |
| Krackhardt connectedness | 1.000 | 1.000 | 0.918 |
| Krackhardt efficiency | 0.932 | 0.891 | 0.977 |
| Krackhardt hierarchy | 0.678 | 0.543 | 0.665 |
| Krackhardt upperboundedness | 0.894 | 0.938 | 0.960 |
| Degree centralization | 0.903 | 0.901 | 0.961 |
| Betweenness centralization | 0.258 | 0.150 | 0.268 |
| Closeness centralization | 0.002 | 0.027 | 0.007 |
| Reciprocal | 20% of the links are reciprocal | 23% of the links are reciprocal | 19% of the links are reciprocal |

*produced from the Actors Network using ORA

### 6.1.1   Structure of the Actors Network

To answer the research questions on coordination and the structure of the relief operation, the results of the social network analysis at the three points in time presented above are discussed below.

### 6.1.1.1   Size and Adaptation

The number of organizations participating in the relief operation during 1989, 1998 and 2009 was 86, 65 and 215 respectively. As noted earlier, these numbers do not reflect all the

actors, but only those reported in the sitreps and those who have interacted with other actors. The apparent decrease in the number of actors in 1998 should not be interpreted as a decrease in the size of the operation. It is attributed to the fact that the focus of reporting during this period was directly on the famine in Bahr El Ghazal State. As such, other areas of the operation and the actors working in those areas were not covered extensively by the reports during this time.

With the signing of the Peace Agreement in 2005, the establishment of government and local administration in the different states in Southern Sudan and the presence of the Peace Keeping Mission (UNMIS), the number of actors increased dramatically from 86 in 1989 to 215 in 2009. In 2009, Government institutions which were almost non-existent in the earlier two periods became an integral part of the network playing a significant role in the relief effort, hand in hand with the other providers of relief.

One would expect that with the signing of the peace agreement, the end of active fighting and the establishment of government institutions, the importance and role of organized relief would decline and the number of actors would decrease. On the contrary, since the signing of the peace agreement, the relief operation grew in size as some aspects of the humanitarian emergency still persisted, in particular, the acute food shortages and as well as violence and fighting among different ethnic groups. In addition, the relief effort was extended to post conflict recovery and rehabilitation to support the rebuilding of government institutions and social infrastructure in a region emerging from decades of conflicts. This extended role of the UN and NGOs, which traditionally provided relief in Southern Sudan during the war time, has been questioned by some from within the aid community. In the words of the former president of Doctors without Borders (MSF – France), "…. NGOs and the United Nations cannot serve as subcontractors for the enormous reconstruction project facing the South Sudanese" (Brauman,

2006). While acknowledging that humanitarian needs are still acute and that aid agencies need to supplement government activities in meeting the needs of the population, the concern was that the aid agencies do not have the mandate nor the means to serve this function and get involved in the provision of public services that should be carried out by the government. (Brauman, 2006). This expectation from the side of the Government reflects dependency, which is one of the issues resulting from the receiving humanitarian assistance for long periods of time.

The evolving role of the organizations comprising the relief effort reflects their adaptation to the changing situation on the ground. Given the broader environment and the specific mandates and specializations of these organizations, this adaptation has its critics who questioned the limits of the relief effort in relation to the role of the state. In the presence of a state and government institutions, the UN and NGOs may need to step out of the role that they have been playing during the conflict when there was no functioning state apparatus and to re-define their role in supporting the Government in meetings the needs of the citizens.

Operating as an open system in a continuous exchange with their environment, the organizations making up the relief operation, individually and collectively changed their activities and programs to adapt to the changing conditions on the ground. The organizations expanded their activities and added new ones as the need arose. The relief network, being a complex adaptive system, did not adhere to pre-determined goals, which are a characteristic of a closed system, but continuously adjusted its programs and activities to meet the changing needs and to fit with its environment.

### 6.1.1.2 Cohesion

In SNA in general, the concept of cohesion "… is closely related to ideas of dense, intimate relations among members embedded in a social group or closed social circle" (Knoke

176

and Yang, 2008, p. 72). Cohesion reveals the extent to which the organizations in a network are interconnected which has an implication on how well they share information, coordinate their efforts and work together. A cohesive group is characterized by the mutuality and frequency of ties among its members and their closeness and reachability" (Wasserman and Faust, 1994, p. 251-2). This is particularly important in relief operations given the continuously changing context of the emergency, the need to share information and to be able to respond quickly. Measures of network cohesion used in this research are density, centralization, clustering coefficient and characteristic path length.

Throughout the three periods, the overall density of the network was low, 0.052 in 1989, 0.083 in 1998 and 0.018 in 2009 which indicates that only about 5%, 8% and 2% of all the possible ties that could exist between pairs of actors during the three periods had actually existed. This reveals that most of the actors in the networks were not directly and immediately connected to the other actors. Nevertheless, this does not automatically imply that the network was disconnected or not cohesive. The actors in the relief operation were linked through a few core, highly connected actors, who had connections to many of the actors who were otherwise disconnected. These 'central' actors were vital in holding the network together, played a crucial role in communication and dissemination of information and generally undertook the coordination role, which in emergency situations in highly volatile environments is even more important than in normal circumstances.

Given the organizations' different mandates, expertise and declared principles, many organizations did not find it easy to accept the coordination role of some of the central actors. As shown by the results of the social network analysis of the 1998 network, the Sudan Relief and Rehabilitation Association (SRRA), the humanitarian wing of the SPLM/A was a central actor

177

during this period as it was the official coordinating body for agencies operating in the areas controlled by SPLM/A. All agencies providing relief in the SPLM/A held areas had to work closely with the SRRA, but some of the NGOs preferred to disassociate themselves from the SRRA so as not compromise their neutrality and be seen as cooperating with one side of the conflict (Murphy and Salama, 1998). The heterogeneity of the actors and the complexity of the environment whereby relief providers such as UN agencies and NGOs, who are governed by the humanitarian principles of neutrality and impartiality, had to interact with warring factions and military and political authorities who have an interest in manipulating relief assistance made the coordination function even more challenging.

The cohesiveness of the network is better understood when we consider, together with the density, both the characteristic path length and the clustering coefficients of the network as density, on its own, does not reflect the full picture. The characteristic path length, which is "the median of the average shortest distance (number of links) connecting each…" actor to all other actors (Carley et al., 2011), of the three networks was 3.84 in 1989, 2.93 in 1998 and 3.79 in 2009 showing that although actors are not directly connected, yet they are fairly close and it is easy for them to reach each other. The characteristic path length gives insight into how the network as a whole communicated and how information spreads among the actors in a network. The smaller the path length, the faster the network is able to communicate and exchange information.

The third aspect of the cohesiveness of the network is the clustering coefficient, which is the density of the local neighborhoods. For the three networks, the clustering coefficient is significantly much higher than the overall density of the network, 0.69 in 1989, 0.38 in 1998 and 0.79 in 2009. The small characteristic path length, together with the high clustering coefficients,

178

in addition to the component count of one during 1989 and 1998, show that the network, during the three points in time, was cohesive and well connected. Despite the fact that many of the members of the network were not directly linked, yet they were able to reach each other through a small number of steps. Although the members of the network are independent actors, and may not be connected through any formal organizational structure, yet they communicated and coordinated their work closely. To be able to deal with the constraints of the complex humanitarian emergency in which they operated and to rapidly respond to the changing situation, the actors had to communicate and coordinate their effort while at the same time retain their flexibility to act individually. Even though coordination did not take place by design, yet each of the individual organizations, in its attempt to respond to the changing conditions of the emergency, interacted with the other organizations in a way that resulted in a global pattern of communication and coordination.

With reference to the component count, it was 1 in both 1989 and 1998 indicating that there were no isolates. In 2009 it was 5 indicating that some actors were isolated and not part of the main network. the 2009 isolated components represented small sub-groups of actors working together in isolation  from the overall network containing all the other actors. As noted in Chapter Five, once the sectors' and locations' networks were added to the actors' network, the four isolated components became part of the overall network by virtue of their involvement in the same sectors and locations as other actors.

**6.1.1.3 Structure (Centralization and Power Structure)**

The structure of the relief operation is revealed by analyzing the centralization measures and the Krackhardt's measures of hierarchy. Centralization, as a group measure of cohesion,

allows us to easily compare different networks  as it examines the disparity between actors in terms of their individual centrality scores (Wasserman and Faust, 1994, p. 176). A group level index of centralization "has the property that the larger it is, the more likely it is that a single actor is quite central, while the remaining actors considerably less central. It measures how variable or heterogeneous the actor centralities are. It can also be viewed as a measure of how unequal the individual actor values are." (Wasserman and Faust, 1994, p. 176).  Network centralization, in the context of an inter-organizational network sheds light on coordination (Turk 1977 cited in Hagen et al. 1997) and on how relationships in the network are dominated by a few actors (Irwin and Huges 1992 cited in Hagen et al. 1997).

Comparing the network at three points in time, we find that the degree centralization measure is very high 0.903 in 1989, 0.901 in 1998 and 0.961 in 2009 which reveals a very high differentiation between the actors in terms of the number of direct ties they have with other actors, some of them being quite central with high centrality measures while the others are more peripheral. Betweenness centralization is low compared to degree centralization with values of 0.258 in 1989, 0.150 in 1998 and 0.268 in 2009. This shows less differentiation between the actors in terms of those who lie on the shortest path between two other actors implying the presence of a few 'gatekeepers' or 'brokers' but still the measure shows considerable differentiation between the actors. Closeness centralization of the three networks is low compared to the other two measures of centralization, 0.002 in 1989, 0.027 in 1998 and 0.007 in 2009, indicating less disparity between the actors in the three networks in terms of how close they are to other actors.

The centralization measures show that differentiation between the actors existed in the network at the three points in time with the presence of a highly central group of actors coordinating the network. This conclusion is further confirmed by Krackhardt's four measures of hierarchy, which are another set of measures that contributes towards answering questions 2 and 3 of the research and allows us to compare the structure of the overall network overtime. According to Leblebici and Whetten (1984), "the concept of hierarchy both as a conceptual tool and as an empirical measurement can reveal the systemic properties of an interorganizational organization" (p. 32). The high values of the measures of hierarchy during the three periods of time reveal that a core group of actors has been taking the lead in the network. Although, theoretically the relief operation did not have a formally established command center, yet this group of central actors played the role of the 'boss' and made the structure of the relief operation approach that of a hierarchy. The concept of hierarchy referred to in this context is what Leblebici and Whetten (1984) refer to as 'horizontal hierarchy' as opposed to 'vertical hierarchy'. Horizontal hierarchy refers to the interdependence between actors and the strong local density of the sub-systems compared to the global density (p. 34).

It should be noted that Krackhardt's hierarchy measure was relatively low, 0.678 in 1989, 0.543 in 1998 and 0.665 in 2009 and that reciprocity existed between the actors, 21% in 1989, 24% in 1998 and 19% in 2009, revealing that almost a quarter or fifth of all ties between the actors are bi-directional. This means that the structure of the network was not a pure hierarchy in the vertical sense of the term.

This horizontal hierarchical structure, despite the lack of a formal command and control organizational structure can be explained by two of the theories of inter-organizational relationships, Exchange (Resource Dependence) Theory and Organizational Ecology Theory

181

(Benson 1975 in Alexander, 1995, p. 7 & 9; Marion 1999). The results of the SNA, reproduced in Table 6-2, reveal that UNICEF, which has been the second top ranked organization in 1989 and the first top ranked in 1998 and 2009, has been a central actor during the three periods with a large number of clique counts and a very prominent and central position. In 1989 and 1998, UNICEF was the lead organization in charge of OLS. One of the main reasons for this privileged position among the other organizations, especially among NGOs, is that the NGOs needed the resources that UNICEF, because of its position as the lead agency within OLS, had under its command such as air transport, security and an evacuation system in addition to the "legitimate cover to work cross-border into non-government areas of South Sudan, … this was especially important to NGOs that simultaneously run programs in government areas." (Karim et al., 1996, p. 68). According to Pfeffer and Salancik (1978), "… [Resource] dependence exists when a needed resource is dominated by relatively few suppliers… " (cited in Marion 1999, p. 116). The fact that UNICEF has these scarce resources under its command resulted in its central position as many actors have to interact with it to have access to these resources without which they will not be able to work. In contrast to the reluctance of many NGOs to accept the coordination role of the SRRA, they more readily accepted the role of UNICEF in coordination, given the similarity of principles and mandates. This highlights the differentiation between the different actors, in particular between the providers of relief assistance and the other actors in the network. This differentiation can act as an obstacle to effective coordination.

As revealed by the structure of the network, the relationship between the different actors is that of interdependence. UNICEF, although not resource dependent on the other actors, yet it still required their cooperation in order for it to carry out its mission. We can go further and describe the relationship between UNICEF as a core organization and the other relief providers

as a 'symbiotic interdependence' both of behavior and outcome since each actor's activity depended on the actions of another and since the actors were "… mutually dependent on each other's output" (Marion 1999, p. 118). The overall outcome of providing relief to the people in need in a CHE cannot be achieved by any one actor in isolation of the others and thus resource dependence, in addition to the interdependence among the different actors, is a defining feature of a relief operation and a characteristic of its structure.

**Table 6-2: Top-Ranked Organizations in 1989, 1998 and 2009**

| Rank | 1989 | 1998 | 2009 |
|------|-------|--------|--------|
| 1 | icrc | unicef | unicef |
| 2 | unicef | ols | wfp |
| 3 | ols | wfp | unhcr |
| 4 | ngos | srra | ssrrc |
| 5 | wfp | Scf-uk | unocha |

Table 6-2 shows organizations that are repeatedly top-ranked in a number of centrality measures, clique membership count, Simmelian Ties and Clustering Coefficients as produced by ORA.

**Legend to Table 6-2**

| Acronym | Organization's Name | Acronym | Organization's Name |
|---------|---------------------|---------|---------------------|
| ICRC | International Committee for the Red Cross | SSRRC | South Sudan Relief and Rehabilitation Commission |
| NGOs | Non-Governmental Organizations | UNHCR | UN High Commission for Refugees |
| OLS | Operation Lifeline Sudan | UNICEF | United Nations Children's Fund |
| SCFUK | Save the Children Fund - UK | UNOCHA | UN Office of the Coordination of Humanitarian Affairs |
| SRRA | Sudan Relief and Rehabilitation Association | WFP | World Food Program |

The structure of the relief operation can also be explored through the lens of the Organizational Ecology Theory which views inter-organizational relationships as the means by which the organizations respond to changes in their uncertain and unpredictable environments over which they have no control (Scott 2003, p. 105). Organizational Ecology Theory helps explain why the coordination role of certain actors was accepted by the other actors in the absence of a formal structure.

The coordination role played by UNICEF came to be accepted by the providers of relief for the following reasons: 1. the uncertainty of the environment in which the relief providers operated; 2. its continuous and unpredictable change; 3. the fact that the actors were working in an active war zone and had to coordinate with uncooperative actors, driven by their own political and military agendas; and the need to practice humanitarian diplomacy and to continuously negotiate the humanitarian space, the actors came to accept. The relationship between UNICEF and the NGOs was formalized through Letters of Understanding (LOUs). LOUs were an institutional mechanism for coordination and a set of rules governing the relationship between UNICEF and the NGOs (Karim et al. 1996, p. 65). By signing the letters of Understanding with UNICEF/OLS, NGOs working in Southern Sudan received the following: A legal status, free or subsided logistical facilitates at Lokichoggio, free or subsidized air transport between Lokichoggio, Nairobi and Sudan, OLS security clearances with the Government of Sudan, OLS communications systems and training workshops and field program support from UNCIEF and WFP (Omaar and de Waal 1995, p. 9). This explains the central role of UNICEF, OLS and WFP and why they continued to be members of so many cliques throughout the 20 years covered by this study as shown in the Table 6-3 below.

Table 6-3: Clique Membership Count in 1989, 1998 and 2009

| | 1989 | | 1998 | | 2009 | |
|---|---|---|---|---|---|---|
| Rank | Organization | Value | Organization | Value | Organization | Value |
| 1 | ols | 38 | unicef | 29 | unicef | 113 |
| 2 | unicef | 34 | wfp | 26 | wfp | 60 |
| 3 | wfp | 33 | ols | 24 | unhcr | 52 |
| 4 | icrc | 26 | srra | 16 | ssrrc | 52 |
| 5 | ngos | 24 | wv | 14 | unocha | 45 |
| 6 | un | 20 | oxfam-us | 14 | unjlc | 41 |
| 7 | nca | 17 | msf-b | 13 | unrcso | 34 |
| 8 | srra | 15 | scfuk | 12 | who | 34 |
| 9 | spla | 11 | oxfam-gb | 12 | unmis | 30 |
| 10 | usaid | 11 | msf-h | 10 | medair | 26 |

**Legend to Table 6-3**

| Acronym | Organization's Name | Acronym | Organization's Name |
|---------|---------------------|---------|---------------------|
| icrc | International Committee for the Red Cross | un | United Nations |
| medair | MEDAIR | unhcr | UN High Commission for Refugees |
| msf-b | Medicins sans Frontiers-Belgium | unicef | United Nations Children's Fund |
| msf-h | medicins sans frontiers-Holland | unjlc | UN Joint Logistics Centre |
| nca | Norwegian Church Aid | unmis | UN Mission in Sudan |
| ngos | Non-Governmental Organizations | unocha | UN Office of the Coordination of Humanitarian Affairs |
| ols | Operation Lifeline Sudan | unrcso | UN Resident Coordinator Support Office |
| oxfam-gb | Oxfam-GB | usaid | United States Agency for International Development |
| oxfam-us | OXFAM-US | wfp | World Food Program |
| scfuk | Save the Children Fund - UK | who | World Health Organization |
| spla | Sudan People Liberation Army | wv | World Vision |
| srra | Sudan Relief and Rehabilitation Association | un | United Nations |
| ssrrc | South Sudan Relief and Rehabilitation Commission | | |

The presence of this core group of actors as revealed by the results of the SNA and the different measures confirm the conclusions made by Van Brabant (1999) on the discussion of whether coordination takes place by command or consensus between the different organizations involved. According to Brabant (1999), "… the coordination process seeks to create a 'critical mass' of leading agencies" (p. 13). This critical mass of leading agencies ensured that the channels of communication remained open between all actors in the network. They also ensured that coordination took place.

It can be clearly seen, by examining the network at the three points in time, that despite the changing conditions of the emergency over the twenty-year period, the underlying structure of the relief operation has remained unchanged to a large extent. The structure of the relief operation is that of a 'small-world network,' having a small number of core organizations at the center, identified by their power and privileged position and connecting the rest of the actors. The group of core organizations ensures the cohesion of the network and plays the leading role in

communication and coordination. A comparison between the clustering coefficients and characteristic path lengths of the actual relief network in 1989, 1998 and 2009 and their random equivalents, with the same size and density but with links distributed randomly, is shown in Table 6-4.

**Table 6-4: Characteristic Path Length and Clustering Coefficient for the Network in 1989, 1998 and 2009**

|  | Network | Clustering Coefficient (C) | Characteristic Path Length (L) | Ratio (C/L) |
|---|---|---|---|---|
| 1989 | **Actual** | 0.685 | 3.837 | 0.1785 |
|  | **Random*** | 0.042 | 3.034 | 0.0138 |
| 1998 | **Actual** | 0.384 | 2.925 | 0.1313 |
|  | **Random*** | 0.07 | 2.674 | 0.0262 |
| 2009 | **Actual** | 0.276 | 2.925 | 0.0944 |
|  | **Random*** | 0.012 | 4.151 | 0.0029 |

* Random Networks were created in ORA according to the Erdos-Renyi model for generating random graphs.

The Table shows that the actual network, in 1989, 1998 and 2009, has characteristic path lengths close to those of an equivalent random graph and clustering coefficients that are consistently much greater than those of the equivalent random graph. This is a defining feature of the small-world network (Watts, 1999, p. 508-9). The ratios of the clustering coefficient to the characteristic path length of the network at the three points in time are much higher for the actual network compared to the random one. This finding reveals that the connections among a small core group of actors in the actual networks are much stronger compared to connections among actors in the overall network. The importance of this finding is that even small changes in the local structure will result in significant changes in the global structure of the network. As Watts (1999) puts it, "a set of relatively tiny perturbations to the local structure of a highly clustered graph can have a dramatic impact upon its global structural properties" (p.517). Because of the high clustering coefficient and the short characteristic path length, small-world networks

disseminate information and exchange material and resources faster than their random equivalents.

Comparing the ratios of the clustering coefficient to the characteristic path length at three points in time, it can be seen that the ratio in 1989 was significantly higher than in 1998 and 2009. The high ratio in 1989 implies that the network as a whole, although completely connected with a component count of one, was not very integrated. By 2009, the ratio has decreased significantly, indicating that the network as a whole is more integrated than before. This can be interpreted as a measure of success in bringing organizations to better coordinate their efforts.

Although the relief operation is a network of diverse organizations, with a minimum pre-defined formal structure, the presence of the core actors at the center gives it some resemblance to a hierarchical structure. This structure, as a horizontal hierarchy, is characterized by the interdependence of diverse actors who are also closely connected, the lack of a rigid formal structure and the presence of a central, leading group represents the best response of the actors to their dynamic environment. The structure, which was not pre-determined in advance, but has emerged from the interactions of the actors represents the adaptation of the different organizations constituting the relief operation to their environment and the 'best fit' between the relief operation and it environment. The structure enables the actors to work individually, given their different mandates and areas of expertise, but at the same time to coordinate and work together and delegate their power to the core organizations whenever that was required.

Given the nature of complex emergencies and the fact that in the course of providing relief in an active war zone, the humanitarian space has to be continuously negotiated with warring factions, a completely horizontal network with no core may have not been able to function. The networked type of structure allows for the flexibility and interdependence of actors

but it also allows the actors to come together and join their effort when required. Interdependency and flexibility, which allow for rapid change and adaptability, are key characteristics of the structure of multiorganizational networks such as a relief operation. This structure allows the relief operation to function as an open system, with interdependencies between its different constituent organizations, which themselves are not closed rational systems but also open systems as revealed by their being part of a larger environment. Such a structure provides a space for the actors to engage at different levels. Decisions made at the policy level (constitutional choice level of analysis) are transmitted through the core actors, such as UNICEF/OLS and WFP and NGOs (represented by one body), to the other actors operating at the collective choice level and operational level. At the same time and moving in the opposite direction, the realities on the ground, which impact the policies made at the higher level were communicated to the core actors at the operational level, who in turn, transmitted them to the higher levels of decision making.

This discussion reveals that a networked form of organization and horizontal hierarchy are not necessarily incompatible, on the contrary, they enable the organizations to better adapt to a dynamic environment such as that of a complex humanitarian emergency. Everyday work on the ground requires a measure of independence, flexibility and ability to take individual action while access to the humanitarian space and negotiations requires interdependence and a collective voice. Strong communication and exchange took place among small groups of actors more than among the network as a whole as revealed by the SNA measures discussed above. The patterns of interactions reveal that coordination takes place through sub-networks, whose actors are closely connected with each other and loosely connected with other sub-networks. This result is to be expected given the diversity of organizations involved and the spread of the relief

operation over a large geographical location and different sectors. Organizations working in a certain sector, for example water and sanitation, are likely to be more closely connected among themselves and less so with other organizations. Yet they are still linked to other organizations and the overall network. This allows for flexibility to take action but also provides for sharing of information and resources.

A general observation, based on the results of the SNA, is that the patterns of communication and coordination did not change much during the three periods in spite of the change in the conditions of the emergency, the move from a war situation to a post-conflict era and the expansion in the number of actors and the sectors in which they work. The overall structure of the operation remained very similar which can be an indication, without making a solid generalization, that this is how relief operations are generally structured, not so much by design but rather as they evolve in response to changes in their environment and in adaptation to their context. This is what Hanneman (2005) refers to as the duality of social structure " in which individuals [or organizations] make social structures, but do so within a matrix of constraints and opportunities imposed by larger patterns" (p. 130).

The interactions between actors and their environment which resulted in the structure of the relief operation are governed by rules spanning multiple levels of analysis. Invoking Ostrom's concept of action arenas, we find that many the large international NGOs that took part in the relief effort such as World Vision, Oxfam, Save the Children, CARE and the Lutheran World Federation are members of 'multi-tiered federations or confederations' (Webster and Waker, 2009, p. 4). This means they are governed by different sets of rules coming from the higher policy making (constitutional choice) level of their organizations, in addition to the rules governing their operation on the ground and imposed by the environment in which they operate,

such as rules on access imposed by the military and political authorities, which in many instances constrained the actions by relief providers.  In interacting with other organizations and in playing their role in the relief operation, the different organizations had to negotiate the rules governing them and setting the boundaries for their actions.

## 6.2    META-NETWORK – ORGANIZATIONS, SECTORS AND LOCATIONS

### 6.2.1   Adaptation of the Relief Operation

The meta-network approach that takes into consideration, in addition to actors, other elements of the relief operation such as location and sectors, helps in understanding how the operation evolved and adapted through time. Looking at the actors' network in isolation reveal the structure of the relief operation and the patterns of communication and coordination between the actors but does not give a complete picture of the operation with its different aspects. Considering the sectors and locations sheds more light on how the relief operation, as a complex adaptive system made up of different elements has changed and adapted, through the interaction of these elements,  in response to changes in its broader environment.

A number of studies on coordination in relief operations in complex emergencies reviewed and cited in Chapter One provided different conceptualization of coordination and explained the different challenges facing it. The meta-network concept, used in this study, which brings together the different networks of organizations, sectors and locations, lends empirical evidence to Sommers' (2000) concept of coordination as "a multidimensional activity that takes place among a variety of actors at multiple levels across a range of activities [and as] … a

dynamic process, responding to changing political, military, and humanitarian circumstances on the ground" (p.5). Including the sectors in which the different agencies worked and the locations of their programs and activities, brings out clearly the complexity of the operation, the challenge of coordination and the process of adaptation by the relief operation. Complexity reflects the interdependence among the different network components. The interactions among the different elements at the local level result in changes in the overall operation at the global level.

The meta-network concept allows us to examine the evolution of the operation and its adaptation in response to the changing conditions of the emergency, in terms of changes and adjustments in its nature, scope and objective. Although the underlying structure of the relief operation did not change much as discussed in the previous section, yet there were changes in the network of actors, in the scope of the operation as represented by the sectors in which the actors were active and in the objectives it aimed to achieve. The humanitarian imperative still remained the main driving force and assisting people in need was still the overarching objective; but an envisioned three-month food relief operation in an active war zone is markedly different in nature from a nine-year in existence relief operation, with a changed political and military landscape that came to include different militias and factions fighting each other in addition to the main two warring factions; from a post-conflict huge relief, recovery and rehabilitation effort taking place in the existence of a functioning government, a peace keeping mission and large population movements of citizens returning to their hometowns after the end of war. One common characteristic of the three periods is the continuation of violence, whether on a large or small scale and the reoccurrences of food shortages that threatened large numbers of the population, both of which are aspects of a CHE.

The continuation of OLS and its extension beyond its initial three-month period is described in Chapter Four as the 'maintenance and institutionalization of OLS', whereby OLS emerged as a specific institution and a 'permanent administration' instead of a negotiated agreement renewed every few months. This process of maintenance and institutionalization reflect the adaptation of the relief operation to its context. One of the defining features of this institutionalization is the separation of the operation, which was envisioned as a relief operation providing assistance to the affected population throughout Sudan, into a Northern Sector and a Southern Sector. The Northern Sector remained under the control of the Government of Sudan in Khartoum and to a large extent ceased to be part of OLS. The Southern Sector which was managed by the UN and has its base in neighboring Kenya (Nairobi and Lockichoggio) was, to a large extent, outside the control of the central government in Khartoum. OLS has mainly operated on what came to be known as 'rebel-held' or 'non-government' controlled areas. Although the Government of Sudan did not have much control over the day to day running of the operation and its management in these areas, yet it was able to exercise some control by limiting access, especially permissions to fly for UN planes dropping food in areas non-accessible by road, to certain regions within the South. Access to humanitarian space is the arena of humanitarian diplomacy and it is where the agencies needed to coordinate their activities and to have a lead agency to negotiate with the government and other military and political authorities. In spite of the long-life of the operation, the humanitarian space was never completely guaranteed and remained under negotiation all through and as such remained an important 'sector' in which the agencies needed to put effort.

Safeguarding humanitarian space and ensuring access to the affected populations and the safety of the relief workers required negotiations, not only with the government of Sudan but

also with the different armed groups in the South as the rules of access were imposed by both. These negotiations led to the Agreements on Ground Rules between UNICEF/OLS and the different armed groups in the south in 1995. The Agreement of Ground Rules is a clear example of adaptation by the relief operation to the changing conditions of the emergency. The agencies providing relief assistance, through their interaction with the political and military authorities realized that to gain access, to ensure the security and safety of relief providers, and to protect food aid from diversion by armed groups, they had to attempt to change the rules of interaction to make the environment more conducive to the provision of relief aid.

In 1989 when OLS was negotiated between the two main warring sides, the Government of Sudan and the People's Liberation Movement/Army, these multiple armed groups where non-existent. Since these groups became active,  they formed a part of the environment in which the relief operation was taking place and as such it was inevitable that their activities would impact the relief operation and vice versa. Accordingly, they became a significant element that had to be taken into consideration. The armed groups formed part of the constraints faced by the network of organizations providing relief assistance and given their military power, the armed groups were also able to impose their rules on the providers of relief. In such a situation, the negotiation of Ground Rules was the response of the relief operation to the challenges imposed by the armed groups. Through negotiating the ground rules in 1994-1995, UNICEF/OLS aimed at creating a set of rules acceptable to both sides, the relief providers and the armed groups, that will make the environment more conducive to the provision of relief assistance to reach its targeted populations and not to be diverted for political and military reasons. As such the agreement on ground rules was a form of adaptation to the presence and activities of new actors who were not part of the network in the earlier period.

By 1998, OLS was the main provider of social services for the population in Southern Sudan. Its activities covered sectors as diverse as immunization, livestock programs and education, in addition to the main sectors related to food and nutrition for which the operation was initially established. At the same time, the conflict in the South became more complex as the Sudan's People Liberation Army had split to different military groups fighting among themselves as well as against the central government in Khartoum. Food became a weapon, the relief sites were continuously attached by the different armed groups and the diversion of food aid became a serious issue that the operation had to deal with (*Humanitarian Crisis in Sudan*, 1998; Murphy and Salama, 1998; Omaar & de Waal, 1995; Rhodes 1998). This was also the period when the Government of Sudan was imposing flight bans on the UN as a response to the diversion of food aid by armed groups. Given this situation, it was clear that the Agreement on Ground Rules did not hold and that the political and military actors were more powerful in imposing their agendas than the humanitarian actors.

The trajectory of the relief operation was to a large extent determined by this sort of driving and restraining forces with which the providers of relief assistance had to contend throughout the long history of the relief operation. The presence of restraining forces represented by uncooperative actors aiming at furthering their own political and military agendas made the coordination function among the relief providers (cooperative actors) even more crucial. The continuous need to face the restraining forces in a challenging environment and negotiate the humanitarian space required a coordinated, unified voice representing the relief operation. This can be considered as one of the reasons behind the persistence of the horizontal-hierarchical structure of the operation.

UNICEF/OLS and WFP continued to lead the operation during this time. Given the severity of the food shortages and the need to pull efforts together, a number of joint teams such as the Joint Task Force which included representatives from the SPLM and SSRA in addition to UN agencies and NGOs became very active and played a prominent role in the operation. Bahr El Ghazal State was the main state affected by the 1998 famine and as such it was the site of much of the activity of the operation during this time. But still the relief effort continued in other states as well.

In 2009 and four years after the signing of the Peace Agreement, the relief operation changed significantly in response to the dramatic change in the situation in Sudan. Although fighting between the two sides of the conflict came to an end, yet Southern Sudan continued to suffer from the impact of conflict, displacement, violence and insecurity. The relief operation in Southern Sudan has to deal with new challenges and new needs as hundreds of thousands of Internally Displaced Persons (IDPs) and refugees returned to Southern Sudan. In addition, the Lord's Residence Army (LRA) continued its destructive activities in a number of southern states and ethnic conflicts, which were taking place in the states of Jonglei, Lakes and Upper Nile, killed thousands of people and displaced many others (Background Note: Sudan, 2011). This state of violence and insecurity, coupled with acute food shortages due to poor rains and the disruption of farming activities because of insecurity, the high cost of food items in the region and the poor infrastructure, led to the continuation of the state of emergency in spite of the end of war *(Hunger Warning, 2009; IRIN, 10 July 2009; UNICEF 2009; USAID & FEWS Net).*

In adapting to the changes in its wider environment, the relief operation in 2009 grew in size as more actors joined it and expanded in scope and locations.  By 2009, the relief operation was more than just an emergency relief network as concerns for recovery and post conflict

reconstruction were taken on board in addition to meeting the basic needs of the population. Although food aid remains a very significant sector together with the security and humanitarian access sector, yet as revealed by the results of the social network analysis, new sectors such as population movements, provision of emergency shelter for returnees and distribution of non-food items became important. One sector that gained importance in 2009 as compared to 1989 and 1998 was the protection sector. According to UNOCHA (2010), "Protection is a broad term for activities aimed at obtaining full respect for the rights of all individuals in accordance with international law, including international humanitarian, human rights and refugee law, regardless of their age, gender or social, ethnic, national, religious or other background" (definition endorsed by IASC). Although it can be argued that the activities of the relief operation have, throughout its history, contributed to protection, yet by 2009, a large number of organizations including UN organizations, mainly UNICEF and UNHCR with their mandates in the protection of children and of refugees respectively, NGOs and different government entities were involved, individually and collectively through working groups, in protection activities.

Another important sector during 2009 was assessments. Given the changing conditions on the ground, many types of assessments to better understand the situation and to estimate the needs were carried out by the different organizations individually or jointly. These included assessments of food needs, of non-food needs, of the situation of returnees and people displaced by renewed conflicts, etc. With the large population movements and the inadequacy of living conditions, disease outbreaks was one of the issues that the relief operation had to address in addition to the provision of water and sanitation.

Given the increasing number of actors during this period and also the number of agencies entrusted with coordination such as OCHA and the Resident Coordinator Support Office, in

196

addition to the presence of the Peace Keeping Mission (UNMIS) with its many sectors and Unit, coordination and the provision of common services was also an important sector where a large number of actors have interacted.

With regards to locations and given that population movements were taking place in different parts of Southern Sudan, the whole of Southern Sudan was the most important location for the activities of the relief operation in 2009. It was followed by States such as Western and Central Equatoria, Jongeli, Upper Nile and Lakes States where violence was taking place either because of tribal conflicts or the activities of the Lord Resistance Army (LRA).

## 6.3    REVISITING THE PROPOSITIONS

The above discussion shows that the relief operation adapted to its environment at different points in time by changes and adjustments in all of the elements constituting the meta-network of actors, sectors and locations. Many new actors became part of the network while some dropped out. Sectors expanded to address new needs and to match the change of the nature of the relief operation from a short term food relief effort to a more comprehensive and diversified relief program addressing longer-term needs. Focus on locations changed on where the needs were more acute.

The discussion also revealed that taking into consideration the sectors and locations networks in addition to the actors' network, will clearly reveal how the relief operation has adapted to the changing condition of the emergency. During the twenty-year period covered by this study, the relief operation changed in nature, size and scope. In the process and through the interaction of the different actors among themselves and with their environment, the relief

operation has also played a major role in changing the environment in which it operated. The relief operation, by becoming a permanent actor in that environment and playing a major role in the provision of services and in meeting the needs of the population, it was able to negotiate the rules of engagement and to change them with the objective of creating a more conducive environment for the provision of humanitarian assistance.

Looking at the locations, we find that the headquarters of the humanitarian agencies are mostly in the developed world, while their programs are implemented mainly in the developing countries (Stapleton et al., 2010a cited in Besiou et al, 2011 p. 79). Policy deliberations and decisions are made at a different level, both institutionally and geographically, from the operational decisions and actions. This multiplicity of levels confirms that the Institutional Analysis and Development Framework is indeed the suitable framework to study relief operations since it addresses these different levels of analysis as the headquarters level is the policy making level that sets the strategic direction of the agencies working in the field. The operational level is where the day to day operations take place based on the strategic direction provided by headquarters but also in response to the changing conditions of the emergency as well as in adaptation to the actions taken by other actors. It is worth mentioning that throughout the history of the operation, the physical environment and the different locations, where activities took place, presented the actors with a number of challenges, including accessibility, safety and security of the relief providers, the multiplicity of stakeholders working in a certain location in addition to the high levels of unpredictability of the whole situation.

Revisiting the propositions made in Chapter Three, Table 6-5 below provides the findings of the study against the propositions:

**Table 6-5: Propositions and Research Findings**

| Proposition | Research Finding |
|---|---|
| **The attributes of the individual actors:** | |
| The larger the organization, the more varied its programs and activities, the more interactions it has with other organizations. | The research findings confirm the proposition. During the three periods, the top ranked organizations as shown in Table 6-2 were the larger, well-funded organizations with more diverse programs and accordingly have many interactions with other actors. These include UNICEF, OLS, WFP, ICRC and NGOs collectively and individually. Other central organizations are the humanitarian wing of the political authorities, SRRA in 1998 and SSRRC in 2009. Although these might not be large or well-funded organizations but because of their mandate as the government agencies responsible for the coordination of relief and rehabilitation activities, they tend to be central organizations with many interactions with the different actors. |
| The longer the involvement of the organization in the relief effort in Sudan, the more repeated interactions and the better coordination it has with other organizations. | This is true and confirmed by Tables 6-2 and 6-4 on Top Ranked Organizations and Clique Membership Count respectively. The background information provided in the descriptive analysis presented in Chapter Four shows that the top-ranked organizations as revealed by the SNA are those which have been involved in the relief effort even prior to the start of the integrated, coordinated relief operation. Accordingly, they have already established relationships on which they were able to build during the integrated relief effort. |
| **The position of the different actors within the network** | |
| The higher the frequency of interaction between an actor and other actors, the more central the position of an actor and the bigger the role the actor plays in communication and coordination.<br>The more peripheral the position of an actor, the smaller the role it plays in coordination. | This is confirmed by the results of the network analysis, which reveal that actors with more interactions are the actors occupying central positions and accordingly better able to play a significant role in communication, information sharing and coordination. |
| **The humanitarian actors and their environment are strongly interconnected** | |
| The global structure of the operation has, to a large extent, been shaped by the interactions | True. The dense local connections among the actors coupled with the low overall density of |

| among the different actors at the local level. | the network defined the structure of the operation during the three periods in time. This structure is not formally defined like the structure of a typical hierarchical organization but has emerged from the interactions among the different actors and between the actors and their dynamic environment. |
|---|---|
| Interaction between the actors and their environment led to changes both in the relief operation and in the environment. | True and this is revealed by how the relief operation adapted to its changing environment and at the same time created changes in that environment. Examples are the separation of the relief operation into a Northern and a Southern Sector and the introduction of Ground Rules. |
| **External factors beyond the control of the organizations have a strong impact on the relief operation.** ||
| The more stable the security situation and the less the intensity of fighting, the more the organizations are able to carry out their activities. | True. The food crisis of 1998 was partly created by the unstable environment, the divisions among the SPLA and the intensification of fighting. This led to an aggravation of the situation and the inability of aid agencies to reach the populations in need. |
| The more cooperative the relationship between the humanitarian agencies and the political and military authorities, the more secure is the humanitarian space. | True. When the relationship is cooperative, it is easy for the humanitarian agencies to negotiation the humanitarian space and to ensure access to the populations in need. The initial establishment of OLS and the agreement between the Government of Sudan, the SPLM/A and the UN on 'corridors of tranquility' through which relief can be delivered to the population in need is an example of the cooperative relationship. |
| The more restrictions imposed by political and military authorities, the more difficult it becomes for the humanitarian agencies to carry out their work. | True. The flight restrictions of 1998 is a clear example how politically imposed restrictions can frustrate the efforts of the humanitarian agencies. |
| **The Relief operation evolved over time to create a better fit with its environment and the changing conditions of the emergency.** ||
| The focus of the operation and its assistance programs changed overtime. | True. As the environment changed, the relief operation changed and adapted overtime by changing the scope and focus of its programs. |
| The relationship with the political and military authorities changed during the different stages | True. The relationship of the relief operation and with the Government of Sudan and with |

| of the operation. | the SPLM/A and the different factions that split from it went through different phases and change. It fluctuated between being cooperative and uncooperative, and sometime antagonistic, based on a perceived association of the relief operation with one side of the conflict. |
|---|---|
| New organizations with different mandates joined the relief effort reflecting the changing needs of the affected population. | True. The changing meta-network in 1998 and 2009 proves them. In 2009, in addition to the Government Institutions at the state and local level, local chiefs began to play a role in the overall operation. Furthermore, UNMIS, other UN agencies such as UNHCR and some Inter-governmental Organizations such as the IOM also became active members of the network. These actors were not part of the network before. |

## 6.4    CONCLUSION

The above discussion clearly shows that to understand how a relief operations is structured, we need to view and model it, not as an isolated system, but as a meta-network and a complex adaptive system deeply embedded in its wider environment and impacted by events taking place at different levels. At the same time, the relief operation also shapes its environment through the interactions of its actors among themselves and with the wider environment.

The descriptive analysis provided in Chapter Four in addition to the findings of the network analysis presented in Chapter Five confirm the propositions made earlier on the basis of the theoretical framework of the study.

# 7.0 CONTRIBUTION OF THE STUDY, ITS LIMITATIONS AND DIRECTIONS OF FUTURE RESEARCH

This study analyzed the structure and evolution of relief operations through both a qualitative, exploratory case study of the relief operation in Southern Sudan and a quantitative Social Network Analysis of the relationships among the actors in the operation, and their evolution over time. The first six chapters presented the problem statement, the theoretical framework, the methodology, the descriptive analysis of the case, the results of the social network analysis and the discussion of the findings. This chapter addresses the contribution of the study to the body of knowledge on relief operations, its implications for policy and practice and concludes with the limitations of the study and directions for further research.

## 7.1 CONTRIBUTION OF THE STUDY

Understanding relief operations is important since the number of emergencies and disasters in the world have been on the rise, affecting the lives of millions of people and costing billions of dollars in terms of the damage caused and also in terms of the official humanitarian assistance to respond to them as shown in Figure 7-1 below. The funding for relief operations has, in many instances, come at the expense of development assistance. As such, it is important to understand how relief operations are structured and how they operate so policies could be devised to

increase their effectiveness and to reduce any negative impact they might have. In addition, the complexity of the humanitarian community, the multiplicity of the actors in any relief operation and their diversity, their different mandates and agendas call for a better understanding of the structure of relief operations and how they evolve in adaptation to the dynamic environments in which they operate.
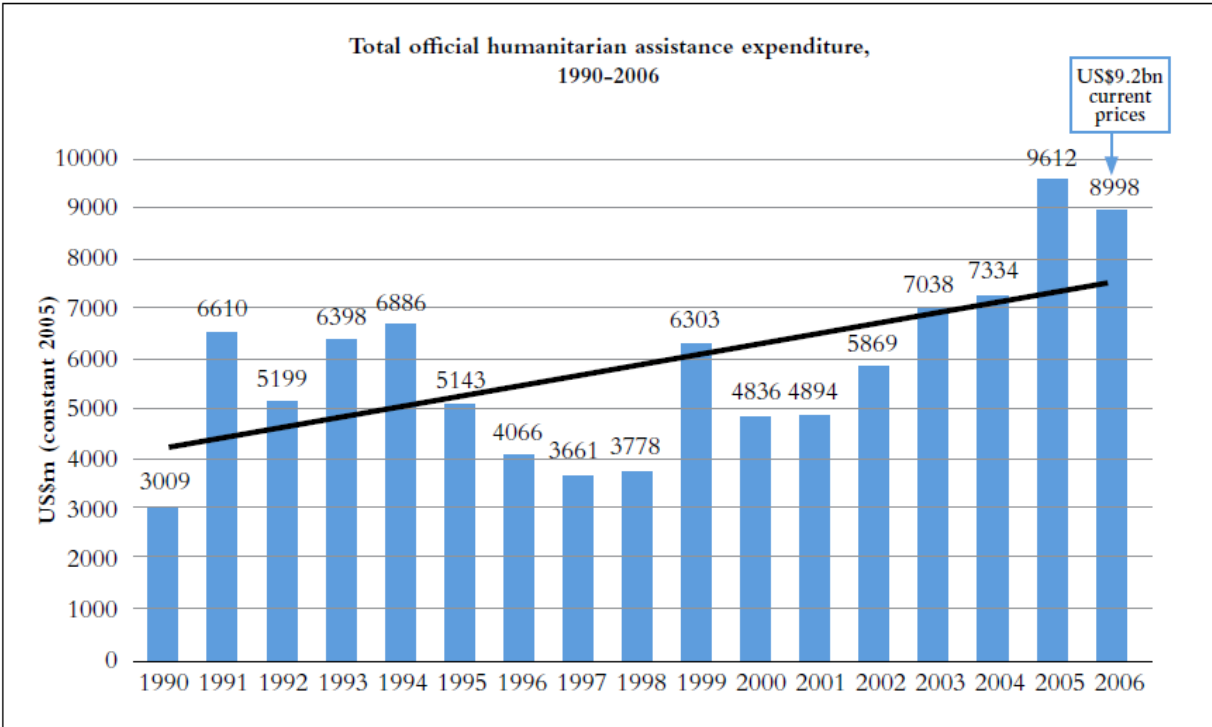


Source: Webster, Mackinnon. & Walker, Peter. (2009, p. 5).

**Figure 7-1: Total Official Humanitarian Assistance Expenditure, 1990 – 2006**

As mentioned in chapter one, the literature on relief operations in complex humanitarian emergencies is mostly descriptive or evaluative and in many cases lacks solid theoretical foundations. This study contributes to the body of knowledge on inter-organizational relief operations in the humanitarian sector by mapping, based on theoretical foundations, the complex

network that emerges in such relief operations. The research demonstrates the utility of social network analysis in studying relief operations, in understanding their structure and their evolution through time. The outcome of the study, which was guided by the research questions and grounded on the theoretical framework lied out in Chapter Two, is a detailed description of the relief operation in Southern Sudan spanning a period of 20 years with a focus on three important points in time. The case study contributes to our understanding of humanitarian relief operations as complex adaptive systems evolving through time and in response to changes in their environment. It also contributes to our understanding of inter-organizational coordination in relief operations.

Analyzing the case through the lens of the IAD framework and Lewin's Force Field Theory allowed for an understanding of the different levels of analysis at which relief operations are conceived, designed and implemented, in addition to an understanding of the multiple set of rules governing them and how the actors interact among themselves and with their environments under these rules and in the process modify both the rules and the environment. Both the driving and restraining forces impacting the relief operations at its different stages were discussed. The policy making process and the decisions about the relief operation in Southern Sudan were taking place at different levels, institutionally and geographically, such as the UN Headquarters in New York, the capitals of the major donors and international NGO Headquarters in the US, Europe and Australia, the capitals of neighboring countries such as Kenya, Uganda and Ethiopia. At the local level, rules set by the military and political authorities, both on the Government side and the rebel movement side, as well as at the level of the different militias and armed groups, and obstacles imposed by the physical environment have all impacted the relief operation. As such the main contribution of this study is in the application of the theoretical framework and the

social network analysis to a dynamic problem which allows for its understanding from different perspectives and at different levels taking into consideration all the factors impacting it.

Another contribution of the study is a mapping of the structure of the relief operation and its evolution through time. Examining the relief operation in Southern Sudan at three points in time in a span of 20 years shows that the overall structure of the relief operation, which emerged from the complex interactions among the different actors under the constraints imposed by their environment, has not changed much although the situation on the ground has changed. The evolution and adaptation of the relief operation can be seen in the entry of new actors, the exit of some of the old actors, in changes in locations and focus sectors of operation but interestingly, the overall networked, horizontal-hierarchical structure, characterized by interdependency and flexibility, remained unchanged.

Another contribution of the study is its analysis of the action arena in a holistic manner. In addition to studying the main participants, the relief providers, the analysis included other actors such as donors and political and military authorities, as well as the physical environment in which they interacted and the rules governing their interactions.  The different actors were motivated by their own mandates and agendas, which in many times run contrary to each other and create obstacles in delivering relief assistance to the populations in need. Examples of these obstacles were food diversion by warring factions and flight bans by the Government in Khartoum, which negatively impacted the delivery of food during acute famine. The physical environment posed challenges to the relief operation in terms of road conditions which limited accessibility to the people in needs, the recurring droughts and floods which aggravated the emergency and the limited local livelihood capacities because of the physical environment and the active fighting that was taking place. Using a complex adaptive system perspective allowed

for taking all these factors and their interactions into consideration as they have impacted the relief operation in one way or another. This allowed for a more comprehensive and rounded understanding of how the different elements impact each other and the overall operation.

## 7.2 IMPLICATIONS FOR POLICY AND PRACTICE

The long duration of the relief operation and its adaptation to the changing conditions of the emergency can be viewed both as a sign of its success and but also as a sign of its failure. It is a sign of success because the relief operation managed to stay the course, unlike the earlier integrated relief efforts that failed soon after their initiation, to continuously evolve and adapt to meet the diverse needs of the population it meant to serve. In the face of many obstacles and an uncooperative environment, the relief providers worked at multiple levels to carry out their mission and to reduce the suffering of those affected by conflict and famine.  It is also a sign of failure that the emergency continued for such a long time and the same crises that led to its establishment in the first place kept reoccurring.  Granted that these were caused by factors outside the control of the relief operation, yet as an emergent structure that has been in place for a long period of time and has taken roles beyond the provision of emergency relief assistance, the relief operation did not manage to put into place any measures that might prevent or reduce the impact of future food shortages.  Although the operation expanded into many sectors, it did not manage to sufficiently support the capacity of the local populations to withstand similar food shortages in the future. So one important policy implication is that long standing relief operations should also focus on preventive measures and building local capacity so that the population is

better able to face future food shortages. This will also have the added advantage of reducing dependency on relief assistance.

One of the lessons learned is that, notwithstanding the utmost importance of relief assistance, yet it is not enough and the need for it can continue indefinitely if the root causes leading to the emergency are not addressed.  A second policy implication of this research is that the political and diplomatic effort to address the causes of the emergency should go hand in hand with the relief effort. The presence of a large, well-funded, multi-sectoral relief operation is not an excuse for actors at different levels and specifically at the policy-making level not to address the causes of the emergency. Donor Countries in particular, given their leverage, can play a major role exerting pressure on the warring parties to come to the negotiation table. The warring parties have depended on the relief operation to take care of the population while they continued fighting each other and making the emergency state even worse.

The above two policy recommendations are not without challenges as they represent two of the hotly debated issues related to the provision of humanitarian aid in complex emergencies – one of them is the relief – development continuum and the other one is whether humanitarian action is to be mixed with political and diplomatic efforts that might compromise its neutrality and impartiality. At the same time, ignoring these two issues will contribute to the protraction of the state of emergency and the continuation of acute needs requiring relief assistance. As a result, the cycle will not be broken, the state of emergency becomes normalized and the presence of a relief operation become accepted not only as an "emergent structure" attempting "… to fulfill important societal functions made evident by an extreme event," but more as part of the normal structure of society (Drabek & McEntire, 2002, p. 198).

The study findings on the structure of the relief operation and how coordination takes place illustrated the importance of interdependence, flexibility and horizontal ties between the actors. The findings, which showed the relief network to be a 'small world network', underscored the importance of having a 'critical mass' of lead organizations that can manage communication and information sharing, undertake the coordination task and represent the other actors when dealing with military and political authorities. The local network of the core group of actors is very critical to the overall network and any changes that take place in this local network will have profound impact on the network as a whole. This fact has to be taken into consideration in the design of relief operations as tapping into the properties of this core network and its members and exploiting their strength, which derives from their privileged position within the overall network, will definitely lead to better communication and coordination among the different organizations participating in a relief operation. A third policy implication, therefore, is that the command and control model of managing organizations does not work in the case of relief operations. Because of the participation of many diverse actors, each having multiple accountabilities to different bodies and bringing its own value added to the operation, successful coordination can only result from consensus, trust and mutual cooperation among the actors, who see the value in coordinating their effort. The role of the core group of actors in this decentralized structure is very important and has the potential, if adequately understood and utilized, for transforming relief operations into a more focused and functional program of collaborative action that may lead, not only to better assistance to the affected population, but also to reducing the conflict in the long run.

## 7.3    LIMITATIONS OF THE STUDY


This research employed an exploratory case study methodology. Although this methodology is very useful and has its strength in explaining the specific case, understanding its intricacies, and revealing its structure as it emerges through the interactions of the different actors, yet one of its limitations is the lack of generalizability or external validity, since it is context specific and there is no control of the influences of the various contextual and situational factors.

As discussed in Chapter Three, the relief operation in Southern Sudan is both an instrumental and intrinsic case study. It is instrumental because it represents a class of multiorganizational networks responding to complex humanitarian emergencies that have been on the increase since the 1980s. Understanding this case within the boundaries of the theoretical framework of the study will help in understanding other cases of relief operations. The case is also intrinsic because it is unique in many respects. Even before the beginning of the coordinated provision of emergency relief assistance, many of the UN agencies and NGOs, both national and international, have been working individually and jointly in providing relief on a much smaller scale in different parts of Sudan including the South. This is why, when the coordinated relief effort started in 1989, many organizations found it easier to work together because they already have established relationships. One of the unique features of the operation is its very long duration and its continuation beyond the conflict period and into the post-conflict era. This long duration offers the advantage of studying the same relief operation over a long period of time and under different conditions and understanding how it evolved and adapted. Another two interrelated features of the uniqueness of the relief operation is its independence from the central

government in Khartoum and its cross-border nature. With the separation of the Northern and Southern Sectors of OLS, the organizations working in Southern Sudan operated in close coordination with the SRRA, the humanitarian wing of the SPLM/A, which was in control of large areas in Southern Sudan.   The overall relief operation in the South was managed from Kenya (Nairobi and Lockichoggio), which was the operational hub of the relief operation until the peace agreement was signed in 2005.

Although the case study is unique and the findings may not be generalizable to other relief operations, in the sense of generalizing from a sample to populations or universes, yet the framework of analysis, which is one of the main contributions of this study, can be applied to other relief operations in different contexts. Insights gained from the study of the relief operation will allow for analytic and theoretical generalization (Firestone 1993 cited in Matthew & Huberman, 1994; Flick et al., 2004, Yin 1994).

Another limitation of the study is the data used in the social network analysis. A comprehensive data collection tool covering all aspects of the relationship between the actors in a relief operation was developed at the earlier stages of this study. Several attempts to collect first hand data for the network analysis were unsuccessful and the response rate was very low. This is why the network analysis was mainly based on situation reports and archival records. The limitation with documentary records is that they only give a snapshot of the relief operation at a certain point of time and do not reflect all aspects of the operation. In addition they cover the organizations and actors who are willing to report their activities or those whose actions were impacting other actors reporting their activities. This limitation is what Tellis (1997) refers to as "reporting bias".  Accordingly, the study makes no claim to covering the overall set of actors who took part in the relief effort in Southern Sudan and acknowledges that there are a number of

NGOs, both national and international, which were not part of OLS but has played a major role in the relief effort but because of data limitations are not covered in this study.

## 7.4    DIRECTION FOR FUTURE RESEARCH

The limitations outlined in the previous section constitute the starting point for future research. One way to advance future research is to have comparative studies of relief operations in complex emergencies in different contexts and see if they reveal similar structural features and characteristics.  The findings from such studies will provide information on which structure fits which context and can inform the design of relief operations taking place in different contexts.

The network analysis in this study has mainly covered the relief operation operating at the field level where the actual provision of relief assistance was taking place. Future studies can investigate  the broader network  at different levels of analysis, for example at the constitutional choice level of decision making to understand how actors at the higher policy level interact and make decisions that are then translated into day to day work at the operational level in the field.

The persistence of the emergency for decades and the re-occurrence of famines and food shortages in Southern Sudan in the presence of a long- and well- established relief operation, actively providing humanitarian assistance, in a serious cause for concern. It brings into focus the criticisms against humanitarian aid that in its provision, the international community treats humanitarian emergencies as short-term crises and at the same time, it neglects to foster a political dialogue that may eventually lead to addressing the causes of the emergency (Duffield, 1994; Goodman & Hulme, 1999; MacFarlane, 2000; Natsios, 1997; Rieff, 2002). Future research can expand into how relief operations can be designed in such a way so that while saving lives

and responding to the immediate needs resulting from an emergency, they can also play a role in preventing future emergencies by using the leverage of central and powerful actors to encourage negotiations among the belligerents and to address the root causes of the emergency.

**ACRONYMS, NAMES AND TYPES OF ACTORS/ORGANIZATIONS**

| S/N | Acronym | Name of Actor/Organization | Type |
|---|---|---|---|
| 1 | a/s | AWAD/SAAD trucks | private sector |
| 2 | aah | Aktion Afrika Hilfi | International NGO |
| 3 | aah-usa | Action Against Hunger-USA | International NGO |
| 4 | ab | Arrow Boys | Armed Group |
| 5 | acf-f | Action Contra La Faim-France | International NGO |
| 6 | across | Association of Christian Resource Organizations Serving Sudan | International NGO |
| 7 | adra | Adventist Relief and Development Agency | International NGO |
| 8 | ag | Armed group | armed group |
| 9 | ami | Aide Medical International | International NGO |
| 10 | amref | African Medical Research Foundation | International NGO |
| 11 | anla-team | Annual Needs and Livelihoods Assessment Team | Mixed |
| 12 | arc | American Refugee Committee | International NGO |
| 13 | asa | Agricultural Sector Agencies | Mixed (UN agencies and NGOs) |
| 14 | asmt | Area Security Management Team | UN team |
| 15 | aus | Government of Australia | Donor |
| 16 | be | Government of Belgium | Donor |
| 17 | ca | Government of Canada | Donor |
| 18 | caa | Change Agency Association | Community based Organization |
| 19 | caa | Community Aid Abroad (Oxfam-Australia) | International NGO |
| 20 | caaph | Community Action Against Poverty and HIV/AIDS | Community based Organization |

| 21 | cac | County Aids Commissions | County Government |
|----|-----|-------------------------|------------------|
| 22 | card | Community Agency for Research and Development | Community based Organization |
| 23 | care | CARE | International NGO |
| 24 | caritas | Caritas | International NGO |
| 25 | cart | Combined Action Relief Team | consortium of INGOs & NNGOs |
| 26 | cbahws | Community Based Animal Health Workers | Civil Society Organization |
| 27 | cbo-akobo | Christian Brothers | Community based Organization |
| 28 | cbo-akobo | Community Based Organization-Akobo | Community based Organization |
| 29 | cc | Catholic Church | Civil Society Organization |
| 30 | ccc-a | County Commission-Akobo | County Government |
| 31 | ccc-ezo | County Comission-Ezo | County Government |
| 32 | ccc-n | County Commission-Nasir | County Government |
| 33 | ccc-te | County Commissioner-Twic East | County Government |
| 34 | ccm | Comitato Collaborazione Medica | International NGO |
| 35 | ccs | County Commissions | County Government |
| 36 | cdc-us | Center for Disease Control-US | Donor |
| 37 | cdot | Catholic Diocese of Torit | Civil Society Organization |
| 38 | chd | County Health Department | County Government |
| 39 | chf | CHF International | International NGO |
| 40 | chorm | Child Hope Restoration Mission | National NGO |
| 41 | cma | Christian Mission Aid | International NGO |
| 42 | cmcm | Christ Mission Continuous Ministries | National NGO |
| 43 | compass | COMPASS | Community based Organization |
| 44 | concern | Concern | International NGO |
| 45 | coopi | Cooperazione Internazionale | International NGO |
| 46 | cosv | Coordinating Committee for Voluntary Service | International NGO |
| 47 | cpg | Child Protection Group | Mixed (Government, UN, ICRC) |
| 48 | crada | Christian Relief and Development Agency | National NGO |
| 49 | crs | Catholic Relief Services | International NGO |
| 50 | cws | Church World Service | International NGO |
| 51 | dc | Donor Community | Donor |
| 52 | dcv | German Caritas | International NGO |
| 53 | dgsc-goss | Directorate for Gender and Social Change-GoSS | Regional Government |
| 54 | dk | Government of Denmark | Donor |
| 55 | docs | Department of Correctional Services | Regional Government |

| 56 | docw-mosd | Department of Child Welfare-MoSD | Regional Government |
|---|---|---|---|
| 57 | dot | Diocese of Torit | National NGO |
| 58 | drc | Danish Refugee Council | International NGO |
| 59 | drc | Democratic Republic of Congo | Neighboring Government |
| 60 | drco | Drug Committee | Mixed (UN agencies and NGOs) |
| 61 | drwss | Department of Rural Water Supply and Sanitation | Regional Government |
| 62 | echo | European Community Humanitarian Office | Donor |
| 63 | ecs/sudra | Episcopal Church of the Sudan Sudanese Development and Relief Agency | National NGO |
| 64 | eec | European Economic Commission | Donor |
| 65 | eg | Government of Egypt | Neighboring Government |
| 66 | emb-sd-ke | Embassy of the Republic of Sudan-Kenya | Diplomatic Representation |
| 67 | eoj | Embassy of Japan | Donor |
| 68 | ep&r-tf | Emergency Preparedness and Response task force | Mixed |
| 69 | ert | Emergency Response Team | Mixed (UN agencies and NGOs) |
| 70 | ert-bor | Emergency Response Team-Bor | Mixed (UN agencies and NGOs) |
| 71 | esc | Educational Sub-committee | Mixed (UN agencies and NGOs) |
| 72 | et | Government of Ethiopia | Neighboring Government |
| 73 | fao | Food and Agriculture Organization | International Organization (UN) |
| 74 | fews | Famine Early Warning System Network | Network |
| 75 | fin | Government of Finland | Donor |
| 76 | finc | Finland Committee | Donor |
| 77 | fo | The French Organization | International NGO |
| 78 | fr | Government of France | Donor |
| 79 | frc | France Committee | Donor |
| 80 | gaa | German Agro Action | International NGO |
| 81 | ged | Germany Emergency Doctors | International NGO |
| 82 | gnc | Greek National Committee | Donor |
| 83 | goal | Goal | International NGO |
| 84 | gok | Government of Kenya | Neighboring Government |
| 85 | gonu | Government of National Unity | National Government |
| 86 | gos | Government of Sudan | National Government |
| 87 | goss | Government of Southern Sudan | Regional Government |
| 88 | gou | Government of Uganda | Neighboring Government |

| 89 | gr | Government of Germany/FRG | Donor |
|---|---|---|---|
| 90 | grc | Germany Committee | Donor |
| 91 | gs-ees | State Government-East Equatoria State | State Government |
| 92 | gwep-cc | Guinea Worm Eradication program-Carter Center | International NGO |
| 93 | ha | Humanitarian Agencies | Mixed (UN agencies and NGOs) |
| 94 | hcf | Humanitarian Coordination Forum | Mixed |
| 95 | hcp | Health Sector Partners | Civil Society Organization |
| 96 | hhfs | Household Food Security Sector | Mixed (UN agencies and NGOs) |
| 97 | hi | Handicap International | International NGO |
| 98 | hiv/aids-goss | HIV/AIDS Commission - GoSS | Regional Government |
| 99 | hmc | High Ministerial Committee | National Government |
| 100 | iaat | Interagency Assessment Team | Mixed |
| 101 | ias | International Aid Services | International NGO |
| 102 | icc | International Criminal Court | International Organization |
| 103 | icrc | International Committee for the Red Cross | International Organization |
| 104 | ifad | UN International Fund for Agricultural Development | International Organization (UN) |
| 105 | igad | Inter-Governmental Authority on Development | Regional Organization |
| 106 | imc | International Medical Corps | International NGO |
| 107 | interact | Action by Churches Together International | International NGO |
| 108 | interaid | INTERAID International | International NGO |
| 109 | iom | International Organization of Migration | International Organization (UN) |
| 110 | ipch-jp | International Peace Cooperation Headquarters-Japan | Donor |
| 111 | ipcs | Institute for the Promotion of Civil Society | International NGO |
| 112 | irc | International Rescue Committee | International NGO |
| 113 | it | Government of Italy | Donor |
| 114 | jen | JEN | International NGO |
| 115 | j-goss | Judiciary-GoSS | Regional Government |
| 116 | jica | Japan International Cooperation Agency | Donor |
| 117 | jiu | Joint Integrated Units | Peacekeeping Mission |
| 118 | jp | Government of Japan | Donor |
| 119 | jpnc | Japan National Committee | Donor |
| 120 | jrs | Jesuit Refugee Services/USA | International NGO |
| 121 | jtf | Joint Task Force | Mixed (OLS, SRRA & |

| | | | SPLM) |
|---|---|---|---|
| 122 | la | Local Authorities | political, military authority |
| 123 | lc | Local chiefs | Community Authority |
| 124 | lca | The Loving Club Association | Community based Organization |
| 125 | lcp | Local counterparts | Civil Society Organization |
| 126 | lra | Lord's Resistance Army | Militia |
| 127 | lwf | Lutheran World Federation | International NGO |
| 128 | maf-goss | Ministry of Agriculture and Forestry-GoSS | Regional Government |
| 129 | mca | Ministry of Civil Aviation | National Government |
| 130 | mcc | Memmonite Central Committee | International NGO |
| 131 | m-con | Malaria Consortium | International NGO |
| 132 | mdm | Medicins du Monde | International NGO |
| 133 | mdra | Mundri Relief and Development Association | National NGO |
| 134 | medair | MEDAIR | International NGO |
| 135 | media | Media | International Media |
| 136 | medic | MEDIC | International NGO |
| 137 | merlin | Merlin | International NGO |
| 138 | mest-goss | Ministry of Education, Science and Technology-GoSS | Regional Government |
| 139 | mest-wes | State Ministry of Education, Science and Technology-WES | State Government |
| 140 | mi | Malteser International | International NGO |
| 141 | moh-goss | Ministry of Health-GoSS | Regional Government |
| 142 | moh-wbegz | State Ministry of Health-Western Bahr el Ghazal | State Government |
| 143 | monuc | UN Mission DR Congo | Peacekeeping Mission |
| 144 | mopa-goss | Ministry of Presidential Affairs - GoSS | Regional Government |
| 145 | mophi-goss | Ministry of Physical Infrastructure-GoSS | Regional Government |
| 146 | mosd-goss | Ministry of Social Development-GoSS | Regional Government |
| 147 | mosd-js | State Ministry of Social Development - Jonglei State | State Government |
| 148 | mosd-un | State Ministry of Social Development - Upper Nile | State Government |
| 149 | mosd-wbgs | State Ministry of Social Development-Western Bahr El Ghazal | State Government |
| 150 | motr-goss | Ministry of Transport and Roads-GoSS | Regional Government |

| 151 | msa | Maridi Service Agency | Community based Organization |
|---|---|---|---|
| 152 | msf-b | Medicins sans Frontiers-Belgium | International NGO |
| 153 | msf-ch | Medicins sans Frontiers-Switzerland | International NGO |
| 154 | msf-f | medicins sans frontiers-France | International NGO |
| 155 | msf-h | medicins sans frontiers-Holland | International NGO |
| 156 | msf-int | medicins sans frontiers-International | International NGO |
| 157 | msf-sp | Medicins Sans Frontiers-Spain | International NGO |
| 158 | mt-i | MineTech International | Private Sector |
| 159 | nba | Nairobi-based agencies | Mixed (UN agencies and NGOs) |
| 160 | nca | Norwegian Church Aid | International NGO |
| 161 | ncp | National Congress Party | political Party |
| 162 | nfi&ess | NFI & Emergency Shelter Sector | Mixed |
| 163 | ngo | National NGO | National NGO |
| 164 | ngos | Non-Governmental Organizations | NGO |
| 165 | ngo-sc-ss | NGO Secretariat in Southern Sudan | consortium of INGOs & NNGOs |
| 166 | ngos-ns | Nutrition Sector NGOs | NGO |
| 167 | nhdf | Nile Hope Development Forum | National NGO |
| 168 | nl | Government of Netherlands | Donor |
| 169 | nlc | Netherlands Committee | Donor |
| 170 | nor | Government of Norway | Donor |
| 171 | npa | Norwegian People Aid | International NGO |
| 172 | nrc | Norwegian Refugee Council | International NGO |
| 173 | nrrds | Nuba Relief and Rehabilitation and Development Society | National NGO |
| 174 | nscc | New Sudan Council of Churches | National NGO |
| 175 | ocha-erp | OCHA Emergency Preparedness and Response Unit | International Organization (UN) |
| 176 | ols | Operation Lifeline Sudan | Mixed (UN agencies and NGOs) |
| 177 | ols-loki | Operation Lifeline Sudan-Lokichoggio | Mixed (UN agencies and NGOs) |
| 178 | ols-nbo | Operation Lifeline Sudan-Nairobi | Mixed (UN agencies and NGOs) |
| 179 | olsngos | OLS NGOs | NGO |
| 180 | olsns | OLS Northern Sector | Mixed (UN agencies and NGOs) |
| 181 | olsss | OLS Southern Sector | Mixed (UN agencies and NGOs) |
| 182 | op-goss | Office of the President-Goss | Regional Government |
| 183 | ovci | OVCI | International NGO |
| 184 | oxfam-gb | Oxfam-GB | International NGO |
| 185 | oxfam-us | OXFAM-US | International NGO |

| 186 | pc | Private contributors | Donor |
|---|---|---|---|
| 187 | pc-goss | Police Commission-GoSS | Regional Government |
| 188 | pp | Private Parties | Private Sector |
| 189 | prisons | Prisons Department | Regional Government |
| 190 | pu | Porters' Union | Civil Society Organization |
| 191 | r&hc | Office of the UN Resident and Humanitarian Coordinator | International Organization (UN) |
| 192 | rass | Relief Association for Southern Sudan | International NGO |
| 193 | rb | Radda Barnen | International NGO |
| 194 | ri | Relief International | International NGO |
| 195 | rrc | Relief and Rehabilitation Commission | National Humanitarian Agency |
| 196 | rru | Railroad workers Union | Civil Society Organization |
| 197 | sa | State Authorities | State Government |
| 198 | said | Sudanaid | National NGO |
| 199 | sair | Safari Air | Private Sector |
| 200 | salf | Standard Action Liaison Focus | Civil Society Organization |
| 201 | sat | Southern Air Transport | private sector |
| 202 | sc | Civil Society | Civil Society Organization |
| 203 | sc | Save the Children | International NGO |
| 204 | scc | Sudan Council of Churches | National NGO |
| 205 | scfuk | Save the Children Fund - UK | International NGO |
| 206 | sc-us | Save the Children -US | International NGO |
| 207 | SDCF | Inter-Donor Coordinating Forum | Donor Coordination Mechanism |
| 208 | sfm | Swedish Free Mission | International NGO |
| 209 | sg-js | State Government-Jonglei State | State Government |
| 210 | sg-nbeg | State Government-Northern Bahr el Ghazal | State Government |
| 211 | sg-up | State Government- Upper Nile | State Government |
| 212 | sg-wes | State Government-Western Equatoria State | State Government |
| 213 | sg-wes | State Government-Western Equatoria State | State Government |
| 214 | sg-ws | State Government-Warrap State | State Government |
| 215 | sidf | Sudan Inland Development Fund | Community based Organization |
| 216 | sim-m | SIM-Maban | Community based Organization |
| 217 | sma | Sudan Meteorological Authority | National Government |
| 218 | smest-ces | State Ministry of Education, Science and Technology-CES | State Government |
| 219 | smest-ees | State Ministry of Education, Science and Technology --EES | State Government |

| 220 | smest-ls | State Ministry of Education, Science and Technology -Lakes | State Government |
|-----|----------|----------------------------------------------------------|------------------|
| 221 | smest-nbeg | State Ministry of Education, Science and Technology-NBeG | State Government |
| 222 | smest-wbegs | State Ministry of Education, Science and Technology - wbeg | State Government |
| 223 | smest-ws | State Ministry of Education, Science and Technology --Warrap | State Government |
| 224 | smoag | State Ministries of Agriculture | State Government |
| 225 | SMoH-ces | State Ministry of Health-Central Equatoria | State Government |
| 226 | smoh-ees | State Ministry of Health-Eastern Equatoria | State Government |
| 227 | smoh-js | State Ministry of Health-Jonglei | State Government |
| 228 | smoh-ls | State Ministry of Health-Lakes | State Government |
| 229 | smoh-nbeg | State Ministry of Health-Northern Bahr El Ghazal | State Government |
| 230 | smoh-uns | State Ministry of Health-Upper Nile | State Government |
| 231 | smoh-us | State Ministry of Health-Unity | State Government |
| 232 | smoh-wes | State Ministry of Health-West Equatoria | State Government |
| 233 | smopi-nbeg | State Ministry of Physical Infrastructure-NBeG | State Government |
| 234 | smopi-wbeg | State Ministry of Physical Infrastructure-WBeG | State Government |
| 235 | smopi-ws | State Ministry of Physical Infrastructure-Warrap | State Government |
| 236 | smosd-ls | State Ministry of Social Development-Lakes State | State Government |
| 237 | smosd-us | State Ministry of Social Development-Unity State | State Government |
| 238 | smosd-wes | State Ministry of Social Development-WES | State Government |
| 239 | smsoh | State Ministries of Health | State Government |
| 240 | sp | Samaritan's Purse | International NGO |
| 241 | spla | Sudan People Liberation Army | Rebel Army |
| 242 | splm | Sudan People Liberation Movement | Rebel Movement |
| 243 | src | Sudan Red Crescent | National NGO |
| 244 | srra | Sudan Relief and Rehabilitation Association | Rebel Humanitarian agency |
| 245 | srrwg | States Return and Reintegration Working Groups | Mixed |
| 246 | sscc | Southern Sudan Census Commission | Regional Government |
| 247 | ssdc | Southern Sudan De-mining Commission | Regional Government |

| 248 | ssddrc | Southern Sudan DDR Commission | Regional Government |
|---|---|---|---|
| 249 | ssdo | Southern Sudan Development Organization | National NGO |
| 250 | ssla | South Sudan Legislative Assembly | Regional Government |
| 251 | ssrrc | South Sudan Relief and Rehabilitation Commission | Regional Government |
| 252 | ssrrc-wes | South Sudan Relief and Rehabilitation Commission-West Equatoria State | State Government |
| 253 | suha | Sudan Health Association | National NGO |
| 254 | supraid | Sudan Protection Aid | National NGO |
| 255 | sw | Government of Sweden | Donor |
| 256 | swiss | Government of Switzerland | Donor |
| 257 | tcrc | Totto Chan Rehabilitation Center | Civil Society Organization |
| 258 | tf | Tear Fund | International NGO |
| 259 | uae | United Arab Emirates | Donor |
| 260 | ucdc | Unity Cultural Development Center | Community based Organization |
| 261 | uk | Government of United Kingdom | Donor |
| 262 | un | United Nations | International Organization (UN) |
| 263 | una | United Nations Agencies | International Organization (UN) |
| 264 | unct-ss | UN Country Team - South Sudan | UN team |
| 265 | undp | United Nations Development Program | International Organization (UN) |
| 266 | undp-rol | UNDP Rule of Law | International Organization (UN) |
| 267 | undss | UN Department of Safety and Security | International Organization (UN) |
| 268 | unhas | UN Humanitarian Air Services | International Organization (UN) |
| 269 | unhcr | UN High Commission for Refugees | International Organization (UN) |
| 270 | unhcr-car | UNHCR-Central African Republic | International Organization (UN) |
| 271 | unhcr-eg | UNHCR-Egypt | International Organization (UN) |
| 272 | unhcr-et | UNHCR-Ethiopia | International Organization (UN) |
| 273 | unhcr-ke | UNHCR-Kenya | International Organization (UN) |
| 274 | unicef | United Nations Children's Fund | International Organization (UN) |
| 275 | unicef/esaro | UNICEF/Eastern & Southern African | International Organization |

| | | Regional Office | (UN) |
|---|---|---|---|
| 276 | unicef/olsls | UNICEF/OLS Livestock section | Mixed (UN agencies and NGOs) |
| 277 | unicef-ke | UNICEF-Kenya | International Organization (UN) |
| 278 | unicef-ns | UNICEF Northern sector | International Organization (UN) |
| 279 | unicef-ss | UNICEF Southern Sector | International Organization (UN) |
| 280 | unicef-ug | UNICEF-Uganda | International Organization (UN) |
| 281 | unjlc | UN Joint Logistics Centre | UN Common Service Facility |
| 282 | unmis | UN Mission in Sudan | Peacekeeping Mission |
| 283 | unmis-ca | UNMIS Civil Affairs | Peacekeeping Mission |
| 284 | unmis-pf | UNMIS-Protection Force | Peacekeeping Mission |
| 285 | unmis-phr | UNMIS Proctection and Human Rights team | Peacekeeping Mission |
| 286 | unmis-rrr | UNMIS Return,Reintegration and Recovery Section | Peacekeeping Mission |
| 287 | unocha | UN Office of the Coordination of Humanitarian Affairs | International Organization (UN) |
| 288 | unpol | UNMIS Police Component | Peacekeeping Mission |
| 289 | unrcso | UN Resident Coordinator Support Office | International Organization (UN) |
| 290 | un-w | United Nations-Water | International Organization (UN) |
| 291 | updf | Ugandan People's Defence Forces | Neighboring Country (Army) |
| 292 | usa | Government of United States of America | Donor |
| 293 | usaid | United States Agency for International Development | Donor |
| 294 | uscong | US Congress | Donor |
| 295 | usratuna | Usratuna | International NGO |
| 296 | ussr | Soviets | Donor |
| 297 | vfc | Voice for Change | National NGO |
| 298 | vsf-b | Veterinaires sans Frontieres (VSF) - Belgium | International NGO |
| 299 | vsf-ch | Veterinaires sans Frontieres (VSF) - Switzerland | International NGO |
| 300 | vsf-g | Veterinaires sans Frontieres (VSF) - Germany | International NGO |
| 301 | wash-partners | Water, Sanitation and Hygiene Partners | Mixed |

| 302 | wb-juba | World Bank Office in Juba | Donor |
|---|---|---|---|
| 303 | wc | War Child | International NGO |
| 304 | wes-a | WES agencies | Mixed (UN agencies and NGOs) |
| 305 | wfp | World Food Program | International Organization (UN) |
| 306 | wfp-drc | World Food Program-DRC | International Organization (UN) |
| 307 | wfp-par | WFP partners | mixed |
| 308 | wg | Women's Groups | Civil Society Organization |
| 309 | wgp | Working Group | Mixed (UN, NGOs, SRRA, donor) |
| 310 | who | World Health Organization | International Organization (UN) |
| 311 | ws-ces | Water and Sanitation Department - Central Equatoria State | State Government |
| 312 | ws-ees | Water and Sanitation Department - Eastern Equatoria State | State Government |
| 313 | ws-wes | Water and Sanitation Department - Western Equatoria State | State Government |
| 314 | wv | World Vision | International NGO |
| 315 | wvs | World Vision Sudan | National NGO |
| 316 | ymca | YMCA | International NGO |
| 317 | ywca | Young Women Christian Association | National NGO |
| 318 | zrc | Zoa Refugee Care | International NGO |

# BIBLIOGRAPHY

Abdel Ati, Hassan Ahmed. (1988). The Process of Famine: Causes and Consequences in Sudan. *Development and Change, 19*, 267 – 300.

Aboum, Tabyiegen A. et al. (1990, October). A Critical Review of Operation Lifeline Sudan: A Report to the Aid Agencies. *Humanitarian and War Project.* Retrieved February 12, 2004, from http://hwproject.tuft.edu/publications/electronic/e_croo.html.

Accel-Team. (2009). *Force Field Analysis*. Retrieved 2 October 2009 from http://www.accel-team.com/techniques/force_field_analysis.html.

Adams, Mark and Bradbury, Mark. (1995). *Conflict and Development: Organizational Learning in Conflict Situations: Oxfam Discussion Paper 4*. Background Paper for the Workshop 'Development in Conflict' – Birmingham - UK. Oxfam (UK and Ireland).

Africa's Famine is Big Business (1998, September 17). *Africa News Service*. Online Available: Electric Library.

Agranoff, Robert. (2006). Inside Collaborative Networks: Ten Lessons for Public Managers. *Public Administration Review,* December, Special Issue, pp. 56-65.

Ahmed, Abdel Ghaffar, M. (2008). Multiple Complexity and Prospects for Reconciliation and Unity: The Sudan Conundrum. In Nhema, Alfred & Zeleza, P. T. (Eds), *The Root Causes of African Conflicts: The Causes and Costs* (pp. 71-78). Oxford: OSSREA in Association with James Currey Ltd.

Aida, S. et al. (1984). *The Science and Praxis of Complexity: Contributions to the Symposium Held at Montpellier, France. 0-11 May 1984*. Tokyo: The United Nations University (UNU).

Ake, Claude. (1997). *Why Humanitarian Emergencies Occur: Insights from the Interface of State, Democracy and Civil Society.* Research for Action 31. Helsinki: The United National University World Institute for Development Economics Research.

Akol, Lam. (2005). Operation Lifeline Sudan: War, Peace and Relief in Southern Sudan. *Conciliation Resources*. Retrieved July 24, 2009 from http://www.c-r.org/our-work/accord/engaging-groups/operation-lifeline.php.

Albala-Bertrand, J. M. (2000a). Complex Emergencies versus Natural Disasters: An Analytical Comparison of Causes and Effects. *Oxford Development Studies, 28(2),* 187-204.

Albala-Bertrand, J. M. (2000b). Responses to Complex Humanitarian Emergencies and Natural Disasters: An Analytical Comparison. *Third World Quarterly, 21(2),* 215-227.

Albala-Bertrand, J. M (2000c, October). What is a Complex Humanitarian Emergency"? Analytical Essay. *Department of Economics Working Paper No. 420*. University of London- Queen Mary.

Alexander, Ernest R. (1995). *How Organizations Act Together: Interorganizational Coordination in Theory and Practice*. Amsterdam: Gordon and Breach Science Publishers.

Alter, Catherine & Hage, Jerald. (1993). *Organizations Working Together*. Newbury Park, Ca.: Sage Publications, Inc.

Anderson, Mary B. and Woodrow, Peter J. (1998). *Rising from the Ashes: Development Strategies in Times of Disaster.* Boulder, Colorado: Rienner Publishers.

Andersson, Kirster. (2006, Spring). Understanding Decentralized Forest Governance: An Application of the Institutional Analysis and Development Framework. *Sustainability: Science, Practice & Policy, 2 (1),* 25 – 35. Retrieved October 11, 2009 from http://ejournal.nbii.gov/archives/vol2iss1/0507-010.andersson.pdf.

Axelrod, Robert and Cohen, Michael D. (1999). *Harnessing Complexity: Organizational Implications of a Scientific Frontier.* New York: The Free Press, 1999.

*Background of OLS 1989-1992*. (n.d.).  Retrieved 3 February 2003 from www.idpproject.org.

*Background Note: Sudan*. (2011, April 8). U.S. Department of State: Bureau of African Affairs. Retrieved 29 May 2011 from http://www.state.gov/r/pa/ei/bgn/5424.htm.

Baker, Wayne E. (1992). The Network Organization in Theory and Practice. In Nitin Nohria & Robert G. Eccles (Eds.), *Networks and Organizations: Structure, Form, and Action,* pp. 397-429. Boston: Harvard Business School Press.

Bak, P. and Chen, K. (1991). Self-Organized Criticality. *Scientific American, 264*(1), 46-53.

Barnett, Micheal, & Weiss, Thomas G. (2008). *Humanitarianism in Question: Politics, Power, Ethics.* Ithaca: Cornell University Press.

Barrow, Ondine and Jennings, Michael (Eds.). (2001). *The Charitable Impulse: NGOs and Development in East and North-East Africa.* Oxford: James Currey.

Baum, Joel A. C. (2002). *The Blackwell Companion to Organizations*. Oxford: Blackwell Publishers Ltd.

Baum, Joel A. C. & Rowley, Tim J. (2002). Companion to Organizations: An Introduction. In Jeol A. C. Baum, *The Blackwell Companion to Organizations* (pp. 1-34). Oxford: Blackwell Publishers Ltd.

Begun, James W. (1994, December 4). Chaos and Complexity: Frontiers of Organization Science. *Journal of Management Inquiry, 3*, 329-35.

Besiou, Maria, Stapleton, Orla & Van Wassenhove, Luk N. (2011). System Dynamics for Humanitarian Operations. *Journal of Humanitarian Logistics and Supply Chain Management, 1* (1), 2011, pp. 78 – 103.

Bickmean, Leonard and Rog, Debra J. (Eds). (1998). *Handbook of Applied Social Research Methods.* Thousand Oaks, California: SAGE Publications.

Bidder, Mark. (1994). *Linking Relief and Development – A Conceptual Outline*. UNDP Ethiopia: UN Emergency Unit for Ethiopia. Retrieved 11 July 2009 from http://www.africa.upenn.edu/eue_web/CTINUUM.htm

Black, Richard. (2003). Ethical Codes in Humanitarian Emergencies: From Practice to Research. *Disasters, 27*(2), 95-108.

Borgatti, Stephen P. (2006). Identifying Sets of Key Players in a Social Network. *Computational and Mathematical Organization Theory 12*: 21-34.

Bradbury, Mark, Leader, Nicholas & Mackintosh, Kate. (2000, March). *The 'Agreement on Ground Rules' in Southern Sudan: Study 3 in The Politics of Principle: the Principles of Humanitarian Action in Practice.* London: ODI, Humanitarian Policy Group (HPG) Report 4, March.

Brauman, Rony. (2006). *Southern Sudan: "NGOs and the United Nations Cannot Serve as Subcontractors for This Enormous Reconstruction Project."* Retrieved 17 October 2009 from *http://doctorswithoutborders.org/publications/article.cfm?id=3300&cat=ideas-opinions*

Brennan, Richard J. and Nandy, Robin (2001). Complex Humanitarian Emergencies: a Major Global Health Challenge. *Emergency Medicine, 13,* 147-156.

Brusset, Emery. (2000). Sudan's Foreign Policy Environment: Some Implications for Humanitarian Assistance, in Geoff Loane & Tanja Schmer. (Eds). *The Wider Impact of Humanitarian Assistance: The Case of Sudan and the Implications for European Union Policy* (pp.131 – 158), Baden – Baden: Nomos Verlagsgesellschaft.

Buckley, Walter. (1967). Sociology *and Modern Systems Theory*. Upper Saddle River, NJ: Prentice Hall.

Bureau for Crisis Prevention and Recovery (BCPR) – UNDP. (2008). *Guidance Note on Early Recovery.* Geneva: BCPR, UNDP.

Burr, J. Millard & Collin, Robert O. (1995). *Requiem for the Sudan: War, Drought, and Disaster Relief on the Nile.* Boulder, Colorado: Westview Press.

Burt, R. S. (1983). Network Data from Archival Records. In R. S. Burt & M. J. Minor (Eds.). (1983). *Applied Network Analysis: A Methodological Introduction* (pp. 158-174). Beverly Hills, CA.: Sage Publications.

Burt, R. S. (1992). *Structural Holes: The Social Structure of Competition.* Cambridge, Mass.: Harvard University Press.

Burt, R. S. & Minor, M. J. (Eds.). (1983). *Applied Network Analysis: A Methodological Introduction.* Beverly Hills, CA.: Sage Publications.

Byrne, David. (1999). *Complexity Theory and the Social Sciences: An Introduction*. New York: Routledge.

Calhoun, Craig. (2008). The Imperative to Reduce Suffering: Charity, Progress, and Emergencies in the Field of Humanitarian Action. In Michael Barnett & Thomas G. Weiss (Eds.), *Humanitarianism in Question: Politics, Power, Ethics* (pp. 73-97). Ithaca: Cornell University Press.

Carley, K. M. (2011, June). *ORA Version 2.3.4.* Pittsburgh: Carnegie Melon University – Center for Computational Analysis of Social and Organizational Systems (CASOS).

Carley, K. M. et al. (2009). *ORA User's Guide 2009*. CASOS Technical Report. Pittsburgh: Carnegie Mellon University.

Carley, K. M. et al. (2011). *ORA User's Guide 2011: CMU-ISR-11-107.* Pittsburgh: Carnegie Mellon University.

Carley, K. M. and Columbus, Dave. (2011). *Basic Lessons in ORA and AutoMap 201: CMU-ISR-11-109.* Pittsburgh: Carnegie Mellon University.

Carley, K. M and Reminga, Jeff (2004). *ORA: Organization Risk Analyzer – CASOS Technical Report– CMU-ISRI-o4-106.* Pittsburgh: Carnegie Mellon University.

Catholic Relief Services. (2010). *Sudan: History*. Retrieved 15 October 2010 from http://crs.org/countries/sudan

Coase, Ronald H. (1937, November). The Nature of the Firm. *Economica, 4*(16), 386-405.

Comfort, Louise. (1994a). Initiating Change: A Dialogue between Theory and Practice. *Journal of Public Administration Research and Theory, 4*(3), 323-325.

Comfort, Louise (1994b). Self-Organization in Complex Systems. *Journal of Public Administration Research and Theory, 4*(3), 393-410.

Comfort, Louise (1999). *Shared Risk: Complex Systems in Seismic Response.* Oxford: Elsevier Science.

Corning, Peter A. (2002). The Re-emergence of "Emergence": A Venerable Concept in Search of a Theory. *Complexity*, *7*(6), 18-30.

Creswell, John. W. (1998). *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*. Thousand Oaks, CA.: Sage Publications.

De Vaus, David. (2001). *Research Design in Social Research*. Thousand Oaks, CA.: Sage Publications.

De Waal, Alex. (1997). *Famine Crimes: Politics and the Disaster Relief Industry in Africa*. Oxford: James Currey.

Deng, Francis M. and Minear, Larry. (1992). *The Challenges of Famine Relief: Emergency Operations in the Sudan.* Washington D.C.: The Brookings Institute.

Donini, Antonio. (1996). *The Policies of Mercy: UN Coordination in Afghanistan, Mozambique and Rwanda*. Occasional Paper # 22. Providence: The Watson Institute for International Studies, Brown University, 1996. Retrieved January14, 2004 from http://hwproject.tufts.edu/publications/electronic/e_op22.pdf

Drabek, Thomas E. & McEntire, David A. (2002, August). Emergent Phenomena and Multiorganizational Coordination in Disasters: Lessons from the Research Literature. *International Journal of Mass Emergencies and Disasters*, *20*(2), 197-224.

Duffield, Mark (1994, October 24). *Complex Emergencies and the Crisis of Developmentalism*. IDS Bulletin 25 (4). Institute of Development Studies.

Duffield, Mark. (1997). NGO Relief in War Zones: Towards an Analysis of the New Aid Paradigm. *Third World Quarterly, 18*(3), 527-542.

Duffield, March (2000). Humanitarian Conditionality: Origins, Consequences and Implications of the Pursuit of Development in Conflict. In Geoff Loane & Tanja Schmer. (Eds). *The Wider Impact of Humanitarian Assistance: The Case of Sudan and the Implications for European Union Policy* (pp. 97-130). Baden – Baden: Nomos Verlagsgesellschaft.

Eliasson, Jan. (2002). Introduction: Humanitarian Action 1991-2001. In Minear, Larry. *The Humanitarian Enterprise: Dilemmas and Discoveries* (pp. xi –xiii). Bloomfield: Kumarian Press.

Elliot, Euel & Kiel, L. Douglas. (1997). Nonlinear Dynamics, Complexity, and Public Policy: Use, Misuse and Applicability. In Raymond A. Eve, Sara Horsfall & Mary E. Lee (Eds.), *Chaos, Complexity, and Sociology: Myths, Models and Theories* (pp.64-90). Thousand Oaks, California: Sage Publication.

El-Battahani, Atta. (2006). A complex Web: Politics and Conflict in Sudan. In Mark Simmons & Peter Dixon (Eds.), *Peace by Piece: Addressing Sudan's Conflicts*. Accord Reconciliation Resources issue 18. London: Reconciliation Resources.

Emergency Relief Needs. (1989, March 9). *Immediate Food and non-food Relief Requirements for the Period April to November 1989*. Background document prepared by the Government of the Republic of Sudan and the United Nations in collaboration with representatives of the Donor and NGO Communities for the High Level Meeting between the Government of the Sudan and the Untied Nation. Khartoum.

Erasmus, Vivien. (2001). Community Mobilization as a Tool for Peacebuilding. In Luc Reychler & Thania Paffenholz (Eds). *Peacebuilding: A Field Guide* (pp.246-247). Boulder, Colorado: Lynne Rienner Publishers.

Espejo, Raul. (2003). Social Systems and the Embodiment of Organizational Learning. In Eve Milton-Kelly (Ed.), *Complex Systems and Evolutionary Perspectives on Organizations: Application of Complexity Theory to Organizations* (pp. 53-70). Oxford: Elsevier Science Ltd.

Fayol, H. (1949). General and Industrial Management, (Original work published in 1916). In Jay Shafritz and J. Steven Ott. (1996), *Classics of Organization Theory* (pp. 52-65). Orlando: Harcourt Brace and Company.

Flick, Uwe. (2004). Design and Process in Qualitative Research. In Uwe. Flick, E. von Kardorff & I. Steinke. *A Companion to Qualitative Research* (pp. 146-152). Thousand Oaks, CA.: Sage Publications.

Flyvbjerg, Bent. (2001). *Making Social Science Matter: Why Social Inquiry Fails and how it can Succeed Again*. Cambridge: Cambridge University Press.

*Food and Power in Sudan*. (1997). African Rights. London 1997.

Freeman, Linton C. (1979). Centrality in Social Networks: Conceptual Clarifications. *Social Networks, 1*(3), 215-239.

Freeman, Linton C. (2004). *The Development of Social Network Analysis: A Study in the Sociology of Science.* Vancouver, Canada: Empirical Press.

Gibson, Clark C., Andersson, K., Ostrom, E. & Sujai Shivakumar. (2005). *The Samaritan's Dilemma: The Political Economy of Development Aid.* Oxford: Oxford University Press.

Global Humanitarian Assistance. (2009). *Executive Summary*. Retrieved 15 August 2009 from http://www.globalhumanitarianassistance.org/uploads/01-executive-summary-gha2009_0.pdf

Goldstein, Jeffrey. (1999). Emergence as a Construct: History and Issues. *Emergence 11*, 49 – 72.

Goodman, Johanthan and Hulme, David. (1999). From Wars to Complex Political Emergencies: Understanding Conflict and Peace-Building in the New World Disorder. *Third World Quarterly, 20* (1), 13-26.

Graber, Doris. (1992). *Public Sector Communication*. Washington, D. C.: Congressional Quarterly Press.

Graber, Doris. (2003). *The Power of Communication: Managing Information in Public.* Washington, D. C.: Congressional Quarterly Press.

*Gray Literature.* (2010). Retrieved 12 October 2010 from http://en.wikipedia.org/wiki/Gray_literature#cite_note-0

Gretzel, Ulrike. (2001). *Social Network Analysis: An Introduction and Resources.* Retrieved 18 August 2009 from http://lrs.ed.uiuc.edu/tse-portal/analysis/social-network-analysis/

Grunewald, Francois. (2001, September). Responding to Long-Term Crises. *Humanitarian Exchange Magazine (HPN),18*, 2-3. Retrieved 15 January 2003 from http://www.odihpn.org/documents/humanitarianexchange018.pdf

Gulick, Luther. (1937). Notes on the Theory of Organization. In J. Shafritz & Albert Hyde (Eds.). Classics *of Public Administration* (4th ed., pp. 81-89). Fort Worth, Texas: Harcourt Brace.

Hagen, Guy et al. (1997). An Analysis of Communication Networks among Tampa Bay Economic Development Organizations. *Connections 20*(2): 13-22. Online article

Retrieved March 2008 from
http://www.analytictech.com/connections/v20(2)/tampabay.htm

Hanneman, Robert. (2001) *Introduction to Social Network Analysis.* University of California, Riverside. Retrieved 17 November, 2003 from www.faculty.ucr.edu/~hanneman

Hanneman, Robert A. & Mark, Riddle. (2005). *Introduction to Social Network Methods*. Riverside: University of California, Riverside . Retrieved 20 September 2009 from http://www.faculty.ucr.edu/~hanneman/nettext/

Hardy, Scott D. & Koontz, Thomas M. (2009). Rules for Collaboration: Institutional Analysis of Group Membership and Levels of Action in Watershed Partnerships. *The Policy Studies Journal, 37* (3), 393 – 414.

Henry, Gary T. (1998). Practical Sampling. In Leonard Bickman and Debra J. Rog (Eds.), *Handbook of Applied Social Research Methods* (pp. 101-126). Thousand Oaks, California: SAGE Publications.

Helton, Arthur C. (2001). Bureaucracy and the Quality of Mercy. *International Migration Review, 1*(35), 192-225.

Hansch, S. & Burkholder, B. (1996, Fall). When Chaos Reigns: Responding to Complex Emergencies. *Harvard International Review, 18*(4), 10-1, 53-54.

Hodder, Ian. (2003). The Interpretation of Documents and Material Culture. In Norman K. enzin, Norman K. & Yvonna S. Lincoln (Eds.), *Collecting and Interpreting Qualitative Data* (2nd ed., pp. 155-175). Thousand Oaks, California: Sage Publications.

Holland, John. (1995). *Hidden Order.* Reading, Massachusetts: Addison-Wesley Publishing Company.

Holm, Hans-Henrik. (2002). Failing Failed States: Who Forgets the Forgotten. *Security Dialogue, 33* (4), 457–471.

*The Humanitarian Crisis in Sudan: The Facts*. (1998, July). The European-Sudanese Public Affairs Council. Briefing Paper No. 1.

Humanitarian Policy Group. (2006). *Humanitarian Response to Natural Disasters: A Briefing paper prepared by the HPG for the International Development Committee Inquiry into Humanitarian Response to Natural Disasters*. Retrieved 2 September 2009 from http://www.odi.org.uk/resources/download/604.pdf

*Hunger Warning for South Sudan*. (2009, August 26). Retrieved 3 January 2010 from www.sudaneseonline.com

IGAD. *Profile: Intergovernmental Authority on Development (IGAD).* Retrieved 12 February 2011 from http://www.africa-union.org/recs/igad_profile.pdf

IRIN. (2009, 16 June). *Sudan: Violence Hurting Aid Efforts in the South*. Retrieved 17 June 2009 from http://www.irinnews.org/Report.aspx?ReportId=84861

IRIN. (2009, 11 July). *Sudan: Food Crisis Warning in the South.* Retrieved 3 September 2009 from http://www.irinnews.org/Report.aspx?ReportId=85218

Inter-Agency Standing Committee (IASC). (2009). *About the Inter-Agency Standing Committee*. Retrieved 17 July 2009 from http://www.humanitarianinfo.org/iasc/pageloader.aspx?page=about-default

International Committee for the Red Cross (ICRC). (2008). *Mission Statement.* Retrieved 20 August 2009 from http://www.icrc.org/Web/Eng/siteeng0.nsf/htmlall/icrc-mission-190608

International Committee for the Red Cross (ICRC). (2009). *The ICRC's Mandate and Mission*. Retrieved 20 August 2009 from http://www.icrc.org/web/eng/siteeng0.nsf/htmlall/section_mandate?OpenDocument.

International Federation of Red Cross and Red Crescent Societies (IFRC). (1999). *World Disasters Report 1999*. Oxford: Oxford University Press.

International Labor Organization (ILO). (2007). *Coordination in Crisis Response and Reconstruction*. Retrieved 23 April 2009 from http://www.reliefweb.int/rw/lib.nsf/db900sid/LGEL-5MT9TR/$file/ilo-crisis.pdf?openelement

Jackson, Matthew O. (2008). *Social and Economic Networks*. Princeton, N.J.: Princeton University Press.

Johnson, Douglas H. (2000). The Sudan Conflict: Historical and Political Background. In Geoff Loane & Tanja Schmer. (Eds). *The Wider Impact of Humanitarian Assistance: The Case of Sudan and the Implications for European Union Policy* (pp. 45-609). Baden – Baden: Nomos Verlagsgesellschaft.

Johnson, Douglas H. (2003). *The Root Causes of Sudan's Civil Wars.* Oxford: International African Institute in Association with J. Currey.

Karim, Ataul, et al. (1996). *Operation Lifeline Sudan: A Review* (Unpublished report). Geneva: DHA, 1996.

Katz, Daniel & Kahn, Robert, L. (1978). *The Social Psychology of Organizations (*2nd ed.*).* New York: Wiley and Sons.

Kauffman, Stuart A. (1993). *The Origins of Order.* New York: Oxford University Press.

Keen, David. (2008). *Complex Emergencies*. Cambridge, UK: Polity Press.

Kiel, L. D. and Elliott, E. (Eds). (1996). *Chaos Theory in the Social Sciences: Foundations and Applications*. Ann Arbor: The University of Michigan Press.

King, G., Keohane, R. O. & Verba, S. (1994). *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton, New Jersey: Princeton University Press.

Knoke, David and Kukliski, James. H. (1982). *Network Analysis*. Thousand Oaks, California: Sage Publications.

Knoke, David & Yang, Song. (2008). *Social Network Analysis* (2nd ed.). Thousand Oaks, California: Sage Publications.

Koontz, Tomas M. (2003). *An Introduction to the Institutional Analysis and Development (IAD) Framework for Forest Management Research*. Paper prepared for "First Nations and Sustainable Forestry: Institutional Conditions for Success" Workshop. Vancouver, B.C. Retrieved 8 October 2009 from http://www.forestry.ubc.ca/fnconditions/_documents/TomKoontzPaper.pdf

Lautze, Sue, Jones, Bruce D. & Duffield, M. (1998). *Strategic Humanitarian Coordination in the Great Lakes, 1996-1997: An Independent Assessment.* New York: Office of the Coordination of Humanitarian Affairs, United Nations.

Leblebici, Huseyin & David A. Whetten. (1984). The Concept of Horizontal Hierarchy and the Organization of Interorganizational Networks: A Comparative Analysis. *Social Networks*, *6*, 31-58.

Lerner, Allan M. (1992). *Public Administration: A Realistic Reinterpretation of Contemporary Public Management.* New York: Prentice Hall.

Leriche, Matthew. (2004, Spring). Unintended Alliance: The Co-option of Humanitarian Aid in Conflicts. *Parameters,* 104-120.

Levine, Iain. (1997). *Promoting Humanitarian Principles.* RRN Relief and Rehabilitation Network Paper No. 21. London: Relief and Rehabilitation Network –Overseas Development Institute. Retrieved 4 September 2009 from http://www.oneword.org/odi/rrn/index.html

Lewin, Roger. (1999). *Complexity: Life at the Edge of Chaos*. Chicago: The University of Chicago Press.

Loane, Geoff. (2000). Literature Assessment of the Wider Impact of Humanitarian Assistance. In Geoff Loane & Tanja Schmer (Eds), *The Wider Impact of Humanitarian Assistance: The Case of Sudan and the Implications for European Union Policy* (pp. 15-42). Baden – Baden: Nomos Verlagsgesellschaft.

Loane, Geoff & Schmer Tanja. (Eds). (2000). *The Wider Impact of Humanitarian Assistance: The Case of Sudan and the Implications for European Union Policy*. Baden – Baden: Nomos Verlagsgesellschaft.

Luhmann, Niklas. (1985) . Complexity and Meaning. In S. Aida et al. (Eds.), *The Science and Praxis of Complexity: Contributions to the Symposium Held at Montpellier, France. 0-11 May 1984* (pp. 99-106). Tokyo:  The United Nations University (UNU).

Luhmann, Niklas. (1989*). Ecological Communication*. Chicago: University of Chicago Press.

Luhmann, Niklas. (1995).  *Social Systems*. Stanford, California: Stanford University Press.

Macaskill, Una. (2000). Humanitarian Assistance in Sudan in 1998. In Geoff Loane & Tanja Schmer. (Eds), *The Wider Impact of Humanitarian Assistance: The Case of Sudan and the Implications for European Union Policy* (pp. 185-200). Baden – Baden: Nomos Verlagsgesellschaft.

MacFarlane, Neil. (2000).  *Politics and Humanitarian Action*. Occasional Paper # 41. Thomas J. Watson Jr. Institute for International Studies and the United Nations University.

MacLean, Donald & MacIntoch, Robert. (2003). Complex Adaptive Social Systems: Toward a Theory for Practice. In Eve Milton-Kelly (Ed), Complex *Systems and Evolutionary Perspectives on Organizations: Application of Complexity Theory to Organizations* (pp. 149-166). Oxford: Elsevier Science Ltd.

Macrae, Joanna & Zwi, Anthony (Eds.). (1994). *War and Hunger: Rethinking International Response to Complex Emergencies*. London: Zed Books.

Marion, Russ. (1999). *The Edge of Organization: Chaos and Complexity Theories of Formal Social Systems.*  Thousand Oaks, California: Sage Publications .

Marriage, Zoe. (2006). *Not Breaking the Rules, Not Playing the Game: International Assistance to Countries at War.* London: C Hurst & C. Publishers Ltd.

Matthews, K Michael, White, Michael C. & Long, Rebecca G.  (1999). Why Study the Complexity Sciences in the Social Sciences? *Human Relations, 52*(4), 439-462.

Maurer, John G. (Ed.). (1971). *Readings in Organization Theory: Open-System Approaches*. New York: Random House.

Maxwell, Daniel and Burns, John. (2008, May). *Targeting in Complex Emergencies: South Sudan Country Case Study*. Melford, MA: Feinstein International Center, Tufts University.

Maxwell, Joseph. (1998). Designing a Qualitative Study. In Leonard Bickman and Debra J. Rog (Eds.), *Handbook of Applied Social Research Methods* (pp. 69-100). Thousand Oaks, California: Sage Publications.

McCarthy, Ian and Gillies, Jane. (2003). Organizational Diversity, Configurations and Evolution. In Eve Milton-Kelly (Ed.), *Complex Systems and Evolutionary Perspectives on Organizations: Application of Complexity Theory to Organizations* (pp.71-98). Oxford: Elsevier Science Ltd.

McGinnis, Michael D. (2000, February). Policy Substitutability in Complex Humanitarian Emergencies. *Journal of Conflict Resolution*, *44*(1), 62-89.

Medley, Michael. (2000). Humanitarian Assistance in Sudan: A Chronological Analysis of Shifting Mandates. In Geoff Loane & Tanja Schmer. (Eds). *The Wider Impact of Humanitarian Assistance: The Case of Sudan and the Implications for European Union Policy* (pp. 161-184). Baden – Baden: Nomos Verlagsgesellschaft.

Metz, Helen Chapin. (Ed). (1991). *Sudan: A Country Study.* Washington: Library of Congress.

Miles, Matthew B. & Huberman, A. Michael. (1994). *Qualitative Data Analysis: an Expanded Sourcebook* (2nd ed). Thousand Oaks, CA.: Sage Publications.

Miller, John. H. & Page, Scott E. (2007). *Complex Adaptive Systems: An Introduction to Computational Models of Social Life*. Princeton, N. J.: Princeton University Press.

Milton-Kelly, Eve (Ed). (2003). Complex *Systems and Evolutionary Perspectives on Organizations: Application of Complexity Theory to Organizations*. Oxford: Elsevier Science Ltd.

Minear, Larry. (1997, March/April). Time to Pull the Plug on Operation Lifeline Sudan? *Crosslines Global Report.* Retrieved 1 February 2004 from http://hwproject.tufts.edu/publications/electronic/e_ttpt.html

Minear, Larry. (2002). *The Humanitarian Enterprise: Dilemmas and Discoveries*. Bloomfield: Kumarian Press.

Minear, Larry, et al. (1991). *Humanitarianism Under Siege: A Critical Review of Operation Lifeline Sudan.* Trenton, NJ: The Red See Press.

Minear, Larry, et.al. (1992). *United Nations Coordination of the International Humanitarian Response to the Gulf Crisis*. Occasional Paper #13. Providence (RI): Watson Institute for

International Studies, Brown University. Retrieved 16 January 2004 from http://hwproject.tufts.edu/publications/electronic/e_op13.html

Minear, Larry & Weiss, Thomas G. (1994). *Mercy under Fire.* Oxford: Westview Press.

Minear, Larry & Smith, Hazel. (2007). Introduction. In Larry Minear and Hazel Smith (Eds,), *Humanitarian Diplomacy: Practitioners and Their Craft* (pp. 1-4). New York: United Nations University Press.

Minear, Larry & Smith, Hazel (Eds). (2007) *Humanitarian Diplomacy: Practitioners and Their Craft*. New York: United Nations University Press.

Moore, Mark H. (1995). *Creating Public Value: Strategic Management in Government.* Cambridge, Mass.: Harvard University Press.

Moore, Spencer, Eng, Eugenia & Daniel, Mark. (2003). International NGOs and the Role of Network Centrality in Humanitarian Aid Operations: A Case Study of Coordination During the 2000 Mozambique Floods. *Disasters, 27*(4), 305-318.

Morel, Beniot & Ramanujam, Rangaraj. (1999, May-June). Through the Looking Glass of Complexity: The Dynamics of Organizations as Adaptive and Evolving Systems. *Organization Science*, *10*(3), 278-293.

Morgan, Gareth. (2006). Images *of Organizations*. Thousand Oaks, California: Sage Publications.

Munslow, Barry & Brown, Christopher. (1999). Complex Emergencies: the Institutional Impasse. *Third World Quarterly, 20* (1), 207–221.

Murphy, Paul and Salama, Peter. (1998). Coordinating a Humanitarian Response in Sudan. *Field Exchange: Emergency Nutrition Network, 27*, 4-6. Retrieved 15 February 2004 from http://www.ennonline.net/fex/06/fex06.pdf

Natsios, Andrew S. (1995, September). NGOs and the UN System in Complex Emergencies: Conflict or Cooperation? *Third World Quarterly, 16* (3), 405-419.

Natsios, Andrew S. (1997). *U.S. Foreign Policy and the Four Horsemen of the Apocalypse*. Westport, CT: Preager Publishers.

Nattinee, Marakanond. (1999). *Coordination of Humanitarian Aid for Cambodian Refugees in Thailand: Reasons for Ineffectiveness*. Asia Pacific School of Economics and Management Working Paper. Retrieved 28 February 2004 from http://ncdsnet.anu.edu.au

Nicolis, G. & Prigogine, Ilya & (1977). Self-Organization in Non-Equilibrium Systems: From Dissipative Structures to Order through Fluctuations. New York: Wiley and Sons.

Nohria, Nitin, and Robert G. Eccles (Eds.). (1992). *Networks and Organizations: Structure, Form, and Action.* Boston: Harvard Business School Press.

O'Toole, Laurence J. (1997, January-February). Treating Networks Seriously: Practical and Research-Based Agendas in Public Administration. *Public Administration Review*, *57*(1), 45-52.

OCHA. (1999). *Orientation Handbook on Complex Emergencies*. Retrieved 13 December 2005 from
http://www.reliefweb.int/library/documents/ocha__orientation__handbook_on__.htm

OCHA. (2002). *OCHA Orientation Handbook*. New York: United Nations. Retrieved 13 December 2005 from http://reliefweb.int/rw/lib.nsf/db900sid/LGEL-5R8DWY/$file/ocha-orient-2002.pdf?openelement

OCHA. (2003). *Glossary of Humanitarian Terms in Relation to the Protection of Civilians in Armed Conflict*. New York: UN OCHA Retrieved 15 July 2007 from http://un-interpreters.org/glossaries/ocha%20glossary.pdf.

OCHA. (2008). *OCHA Mission Statement*. Retrieved 15 September 2009 from
http://ochaonline.un.org/AboutOCHA/tabid/1076/Default.aspx

OCHA. (2009). Map Center. Retrieved 12 February 2010 from
http://www.unsudanig.org/new_gateway/maps/south_administrative.php

OCHA (2010). *Who We are*. Retrieved 12 October 2010 from http://www.unocha.org/about-us/who-we-are

OCHA. (2010, June). *UNOCHA on Message: Protection*. Version 1. Retrieved 3 September 2010.

Odhiambo, Bob.(2006, 10 July). *NGOs in Sudan Become Target as Peace Returns*. Retrieved 2 September 2009 from http://www.reliefweb.int/rw/RWB.NSF/db900SID/LSGZ-6RKE3T?OpenDocument

Ogata, Sadako. (2005). *The Turbulent Decade: Confronting the Refugee Crises of the 1990s*. New York: W. W. Norton & Co. Ltd.

Ojaba, Elizabeth et al. (2002, December). Food Aid in Complex Emergencies. *Social Policy and Administration, 36*(6), 664-684.

Omaar, Rakiya & Alex de Waal (1995). *Imposing Empowerment? Aid and Civil Institutions in Southern Sudan.* African Rights Discussion Paper No. 7.

Ostrom, Elinor. (2005). *Understanding Institutional Diversity*. Princeton, N. J.: Princeton University Press.

Peace Operation Monitor (2009). *Sudan: Relief Activities*. Retrieved 13 September 2010 from http://pom.peacebuild.ca/SudanRelief.shtml

Penny, H. (2001, September). The Strategic Framework and Principled Common Programming: A Challenge to Humanitarian Assistance. *Humanitarian Exchange Magazine (HPN), 19*, 4-5. Retrieved 23 February 2007 from http://www.odihpn.org/documents/humanitarianexchange019.pdf

Ploman, Edward W. (1985). Introduction. In S. Aida et al. (Eds.), *The Science and Praxis of Complexity: Contributions to the Symposium Held at Montpellier, France. 0-11 May 1984* (pp. 7-22). Tokyo: The United Nations University (UNU).

Popping, Roel. (2000). *Computer Assisted Text Analysis*. Thousand Oaks, California: Save Publications.

Prendergast, John. (1996). *Front-line Diplomacy: Humanitarian aid and Conflict in Africa.* Boulder, Colo.: L. Rienner.

Prigogine, Ilya. (1985). New Perspectives on Complexity. In S. Aida et al. (Eds.), *The Science and Praxis of Complexity: Contributions to the Symposium Held at Montpellier, France. 0-11 May 1984* (pp. 107-118). Tokyo: The United Nations University (UNU).

Prigogine, Ilya, Nicolis, G. & Babloyantz, A. (1972). Thermodynamics of Evolution: Part I. *Physics Today, 25*, 23-28.

Prigogine, Ilya and Stengers, Isabelle. (1984). *Order out of Chaos: Man's New Dialogue with Nature.* New York: Bantam Books.

Ragin, Charles C. & Becker, Howard S. (Eds.). (1992). W*hat is a Case? Exploring the Foundations of Social Inquiry*. Cambridge: Cambridge University Press.

RCSO. (2009). *Resident Coordinator's Support Office*. Retrieved 13 December 2009 from http://rco.unsudanig.org/

Reindorp, Nicola and Wiles, Peter. (2001). *Humanitarian Coordination: Lessons from Recent Field Experience.* A Study Commissioned by the Office for the Coordination of Humanitarian Affairs (OCHA). London: Overseas Development Institute (ODI). Retrieved 2 February 2004 from http://www.odi.org.uk/hpg/papers/evaluations/ochacoordination.pdf

ReliefWeb. (2001). *United Nations Appeals*. Retrieved 3 July 2006 from http://www.reliefweb.int/appeals/01appeals.html

Relief Web. (2009). *About ReliefWeb*. Retrieved 22 July 2009 from
http://www.reliefweb.int/rw/hlp.nsf/db900ByKey/AboutReliefWeb?OpenDocument

Rey, Francisco. (2001). The Complex Nature of Actors in Humanitarian Action and the
Challenge of Coordination. In The Humanitarian Studies Unit (Eds). *Reflections on
Humanitarian Action: Principles, Ethics and Contradictions* (pp. 99 -119). London: Pluto
Press. Page numbers missing

Reychler, Luc & Paffenholz, Thania (Eds.). (2001). *Peacebuilding: A Field Guide*. Boulder,
Colorado: Lynne Rienner Publishers.

Rhodes, Tom. (2002). Famine Politics and the Cycle of Relief Failure in Sudan. *Global Politics
Network Journal*. Retrieved 15 January 2004 from
http://www.globalpolitics.net/essays/Tom_Rhodes.pdf

Rieff, David. (2002). *A Bed for the Night: Humanitarianism in Crisis*. New York: Simon &
Schuster.

Rogers, David l. & Whetten, David, A. (1982). *Interorganizational Coordination: Theory,
Research and Implementation.* Ames, Iowa: Iowa State University Press.

Rolandsen, Oystein. 2005. *Guerrilla Government: Political Changes in the Southern Sudan
during the 1990s.* Sweden: Almqvist & Wiksell Trycheri.

Ronfeldt, David. (1996). *Tribes, Institutions, Markets, Networks. A Framework About Societal
Evolution.* Santa Monica, California: RAND.

Rubin, Vanessa. (2006, March). The Humanitarian-Development Debate and Chronic
Vulnerability: Lessons from Niger. *Humanitarian Exchange Magazine (HPN), 33*, 22-24.
Retrieved 24 July 2009 from
http://www.odihpn.org/documents/humanitarianexchange033.pdf

Salinas, Annae O'Toole. (1998). *Why is this Happening Again? The Famine in Sudan: Lessons
Learned.* Retrieved 13 August 2009 from http://pdf.usaid.gov/pdf_docs/PNACF992.pdf

Sarkees, M. R., Wayman, F. W. & Singer, J. D. (2003, March). Inter-State, Intra-State, and
Extra-State Wars: A Comprehensive Look at Their Distribution over Time. *International
Studies Quarterly, 47* (1), 49-70.

Scott, John. (2000). *Social Network Analysis: A Handbook* (2nd Ed.). Thousand Oaks, CA: Sage
Publication.

Scott, W. Richard. (2003). *Organizations: Rational, Natural, and Open Systems* (5th Ed.). Saddle
River, NJ: Prentice Hall.

Seeger, Matthew W. (2002).Chaos and Crisis: Propositions for a General Theory of Crisis Communication. *Public Relations Review 28*, 329-337.

Shafritz, Jay M. & Ott, J. Steven. (1996). *Classics of Organization Theory*. Orlando: Harcourt Brace and Company.

Shafritz, Jay M. & Hyde, Albert C. (1997). *Classics of Public Administration* (4th Ed.). Fort Worth, Texas: Harcourt Brace.

Sharp, Buzz. (2007). Food Aid and Development in Southern Sudan: Implications of the Comprehensive Peace Agreement for Response Planning. *Disasters*, *31* (SI): S104 – S123.

Sid Ahmed, A. S. (2008). Sudan, 1992: Humanitarian Relief Efforts to Confront an Intractable Civil War. In Soderlund, W. C., Briggs, E. D., Hilderbrandt, K, & Sidahmed, A.S. *Humanitarian Crisis and Interventions: Reassessing the Impact of Mass Media* (pp. 73 – 84)*. Sterling, VA: Kumarian Press.

Slim, Hugo. (2004). *How We Look: Hostile Perceptions of Humanitarian Action*. Presentation to the Conference on Humanitarian Coordination.   Geneva: Center for Humanitarian Dialogue. Retrieved 16 August 2009 from http://reliefweb.int/rw/lib.nsf/db900sid/AMMF-6VEJH9/$file/HDC-Apr2004.pdf?openelementhttp://reliefweb.int/rw/lib.nsf/db900sid/AMMF-6VEJH9/$file/HDC-Apr2004.pdf?openelement

Slim, Hugo. (2005). *Idealism and Realism in Humanitarian Action.* Two Talks Given at the ACFID Humanitarian Forum in Canberra. Geneva: Center for Humanitarian Dialogue. Retrieved 16 August 2009 from http://fr.hdcentre.org/files/Idealism%20and%20Realism1.pdfhttp://fr.hdcentre.org/files/Idealism%20and%20Realism1.pdf

Smagjl, A, Leitch, A, & Lynam T. (Eds).  2009. *Outback Institutions: An Application of the Institutional Analysis and Development (IAD) Framework to Four case Studies in Australia's Outback*. DKCRC Report 31. Alice Springs: Desert Knowledge Cooperative Research Centre.

Smith, Thomas E. (1997). Nonlinear Dynamics and the Micro-Macro Bridge. In Eve, Raymond A., Horsfall, Sara & Lee, Mary E. (Eds.), *Chaos, Complexity, and Sociology: Myths, Models and Theories* (pp. 55 - 63). Thousand Oaks, California: Sage Publication.

Soderlund, W. C., Briggs, E. D., Hilderbrandt, K, & Sidahmed, A.S. (2008). *Humanitarian Crises and Interventions: Reassessing the Impact of Mass Media.* Sterling, VA: Kumarian Press.

Soderlund, W. C., Briggs, E. D., Hilderbrandt, K. (2008). Introduction: The Problem and Research Methods. In Soderlund, W. C., Briggs, E. D., Hilderbrandt, K, & Sidahmed, A.S.. *Humanitarian Crises and Interventions: Reassessing the Impact of Mass Media* (pp. 1-19). Sterling, VA: Kumarian Press.

Soedjatmoko. (1985). Opening Statement. In S. Aida et al. (Eds.) *The Science and Praxis of Complexity: Contributions to the Symposium Held at Montpellier, France. 0-11 May 1984* (pp. 1-6). Tokyo: The United Nations University (UNU).

Sommers, Marc. (2000). *The Dynamics of Coordination*. Occasional Paper # 40. Providence: The Watson Institute for International Studies, Brown University. Retrieved 14 January 2004 from http://hwproject.tufts.edu/publications/electronic/e_op40.pdf

Sowinska, Adele & Fenton, Wendy. (2005, November). NGO Coordination in South Sudan. *Forced Migration Review, 24,* 27 – 28.

*SPLM/OLS Agreement on Ground Rules* (1995). Retrieved 2 July 2008 from http://www.sudanarchive.net.

Stake, Robert E. (2000). Case Studies. In Norman K. Denzin & Yvonna S. Lincoln (Eds.). *Handbook of Qualitative Research (*2nd Ed, pp. 435-454). Thousand Oaks, CA.: Sage Publications.

Stephenson , Max. (2006, April). Towards a Descriptive Model of Humanitarian Assistance Coordination [Electronic version]. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 17*(1), 41–47.

Stephenson Max & Kehler, Nicole. (2004). *Rethinking Humanitarian Assistance Coordination*. Paper prepared for delivery at the International Society for Third Sector Research Sixth International Conference, July 11-12, Toronto, Canada

Stephenson , Max & Schnitzer, Marcy H. (2006, Winter). International Trust, Boundary Spanning and Humanitarian Relief Coordination [Electronic version]. *Nonprofit Management and Leadership, 17*(2), 21 –233.

Stacey, Ralph D. (1996). *Complexity and Creativity in Organization*. San Francisco: Berrett-Koehler.

Stockton, Nicholas. (2002). *Strategic Coordination in Afghanistan*. Afghanistan Research and Evaluation Unit.

Sudan Watch. (2009, August 14). *More than 2,000 people killed in South Sudan since January. 2009*. Retrieved 30 August 2009 from http://sudanwatch.blogspot.com/2009/08/more-than-2000-people-killed-in-south.html

Taylor, Frederick W. (1912). Scientific Management. In Jay  Shafritz and Albert Hyde (1997), *Classics of Public Administration* (4th ed., pp. 30-36)). Fort Worth, Texas: Harcourt Brace.

Taylor-Robinson, S. D. (2002, February). Operation Lifeline Sudan. *Journal of Medical Ethics (Electronic Version]*, *28*(1).

Terry, Fiona. (2002). *Condemned to Repeat? The Paradox of Humanitarian Action*. Ithaca: Cornell University Press.

Tellis, Winston. (1997, September). Application of a Case Study Methodology. *The Qualitative Report.* Vol. 3(3) Retrieved 15 August 2010. From http://www.nova.edu/ssss/QR/QR3-3/tellis2.html

Tipo, Urbano. (2009, July 26). *The Politics of Marginalization in Southern Sudan.* Retrieved September 5, 2009 from http://www.southsudannation.com

Tsui, Ed. (2003). Initial Response to Complex Emergencies and Natural Disasters. In Kevin M.Cahill (Ed). *Emergency Relief Operations (pp. 32-54).* New York: The Center for International Health and Cooperation.

United Nations. (1991). General Assembly Resolution 46/182 (19 December 1991). *Strengthening the Coordination of Humanitarian Emergency Assistance of the United Nations.* Retrieved 4 April 2008 from http://www.reliefweb.int/OCHA_ol/about/resol/resol_e.html Accessed April 2008

UNICEF. (2009, May 5). *UNICEF deeply concerned at impact on children of recent fighting in Southern Sudan. Retrieved 19 November 2009 from http://www.unicef.org/media/media_49570.html*

UNMIS. (2010). *UNMIS Background*. Retrieved 2 September 2010 from http://www.un.org/en/peacekeeping/missions/unmis/background.shtml.

USAID. (2004). Sudan – Complex Emergency. *Situational Report # 1, Fiscal Year (FY) 2004.* Retrieved 17 January 2004 from http://www.usaid.gov/our-work/humanitarian_assistance/countries/sudan/fy2004/sudan_CE_SR01_11-14-2003.pdf

USAID & FEWS Net. (2009). *South Sudan Food Security Outlook, April – September*. Retrieved 19 November 2009 from http://pdf.usaid.gov/pdf_docs/PNADO391.pdf

Uvin, Peter. (1998). *Aiding Violence: The Development Enterprise in Rwanda.* West Hartford, Connecticut: Kumarian Press.

Van Brabrant, Koenraad. (1997). The Coordination of Humanitarian Action: The Case of Sri Lanka. *Relief and Rehabilitation Network Paper 23*. London: Oversees Development Institute.

Van Brabrant, Koenraad. (1999). *Opening the Black Box: An Outline of a Framework to Understand, Promote and Evaluate Humanitarian Coordination*. London: Oversees Development Institute. Retrieved 6 July 2009 from www.oneworld.org/odi/hpg

Vayrynen, Raimo. (1996). *The Age of Humanitarian Emergencies*. United Nations University/World Institute for Development Economics Research, Research for Action No. 25. Helsinki: UNU/WIDER.

Vayrynen, Raimo. (1999, April). More Questions Than Answers: Dilemmas of Humanitarian Action. *Peace and Change,* 24(2), 172-196.

Vayrymen, Raimo (2000). Complex Humanitarian Emergencies: Concepts and Issues. In E. Wayne Nafziger, Frances Stewart, and Raimo Vayrymen (Eds), *War, Hunger, and Displacement: The Origins of Humanitarian Emergencies* (Vol. 1: Analysis, pp. 43-89) New York: the United Nations University.

Vakil, Anna C. (1997). Confronting the Classification Problem: Toward Taxonomy of NGOs. *World Development, 25* (12), 2057-2070.

Ventresca, Marc J. and Mohr, John, W. (2002). Archival Research Methods. In Joel A. C. Baum, *The Blackwell Companion to Organizations* (pp. 805-828). Oxford: Blackwell Publishers.

Waldrop, Mitchell. (1992). *Complexity: The Emerging Science at the Edge of order and Chaos*. New York: Simon & Schuster.

Wassernam, Stanley and Faust, Katherine. (1994). *Social Network Analysis: Methods and Applications*. Cambridge, UK: Cambridge University Press.

Watts, Duncan J. (1999, September). Networks, Dynamics, and the Small-World Phenomenon. *American Journal of Sociology, 105* (2), 493-527.

Watts, Duncan J. (2003). *Six Degrees: The Science of a Connected Age.* New York: W. W. Norton & Company.

Watts, Duncan and Steven Strogatz. (1998). Collective Dynamics of 'Small-World' Networks. *Nature 393*: 440-442.

Weber, Marx. (1946). Bureaucracy. In Jay Shafriz and Albert Hyde. (1997). *Classics of Public Administration* (4th ed., p. 37-43) Fort Worth, Texas: Harcourt Brace.

Webster, Mackinnon. & Walker, Peter. (2009). *One for All and All for One: Intra-organizational Dynamics in Humanitarian Action.* Melford: Feinstein International Center, Tufts University. Retrieved  14 September 2009 from http://reliefweb.int/rw/lib.nsf/db900sid/AMMF-7SPSS9/$file/Tufts-apr2009.pdf?openelement

Weiss, Thomas G. & Collins, Cindy. (1996). *Humanitarian Challenges and Interventions: World Politics and the Dilemmas of Help.* Boulder: Westview Press.

WFP. (2011). *Logistics: After two decades of live-saving airdrops, "Loki" airbase closes*. Retrieved 25 July 2011 from http://www.wfp.org/logistics/blog/after-two-decades-life-saving-airdrops-loki-airbase-closes

White, Philip & Cliffe, Lionel. (2000). Matching Response to Context in Complex Political Emergencies: 'Relief', 'Development', 'Peace-building' or Something In-between? *Disasters, 24* (4), 314-342.

Willet, Peter. (2002). *What is a Non-Governmental Organization*. Retrieved 2 October 2008 from http://www.staff.city.ac.uk/p.willetts/CS-NTWKS/NGO-ART.HTM

Wilson, Woodrow. (1887). The Study of Administration. In Jay Shafritz and Albert Hyde. (1997). *Classics of Public Administration* (4th ed., pp. 14-26). Fort Worth, Texas: Harcourt Brace.

World Vision. (2009). *World Vision History in the Sudan*. Retrieved 10 September 2009 from http://www.worldvision.org/content.nsf/learn/world-vision-sudan.

Yilmaz, Muzaffer Ercan. (2007, December). Intra-State Conflicts in the post-Cold War Era. *International Journal of World Peace, 24*(4), 11-33.

Yin, Robert K. (1998). The Abridged Version of Case Study Research: Design and Method. In Leonard Bickman and Debra J. Rog. (Eds.), *Handbook of Applied Social Research Methods* (pp. 229-259). Thousand Oaks, California: SAGE Publications.

Yin, Robert K. (1993).  *Application of Case Study Research*. Beverly Hills: Sage Publications.

Yin, Robert K..  (1994). *Case Study Research*. Thousand Oaks, CA: Sage Publications.