Projections, plans and projects. Development as the extension of organizing principles and its consequences in the rural Nuba Mountains / South Kordofan, Sudan (2005-2011)

Dissertation

zur Erlangung des
Doktorgrades der Philosophie

vorgelegt

der Philosophischen Fakultät I

Sozialwissenschaften und historische Kulturwissenschaften

der Martin-Luther-Universität
Halle-Wittenberg,

von Herrn Enrico Ille

geb. am 29. April 1982 in Halle (Saale),

verteidigt am 18. Dezember 2012.

Erstgutachter: Prof. Richard Rottenburg
Zweitgutachter: Prof. Leif Manger

Contents

A map

The Nuba Mountains, situated in the state of South Kordofan in the Republic of Sudan, have throughout history been a 'remote' area: a stage for moving and removing in different ways. Viewed as a region,[1] one of its major characteristics has always been a certain unsteadiness, which contrasts with the steadiness of its defining physical feature, the mountains themselves. Although some of its hill communities remained more or less untouched for extended periods,[2] documented traces of its history are full of movement: inter-communal warfare, slave raids, militarily enforced 'peace' and resettlement, civil war and flight, with the addition of religious missions, labour, educational and professional migration, and occasional tourism. At least since the integration of individuals from the Nuba Mountains into slave armies,[3] especially during Turkish rule (1821-1885) and the Islamic movement of the Mahdi (1885-1898), there has been also a pattern of return of those who, though born and raised in the mountains, subsequently spent time as part of a very different social environment, often many years. As most of these groups had themselves been immigrants into the refuge of the Nuba Mountains, as 'refugees', so to speak, these long dynamics of manifold movements and survival through isolation have nurtured a complex relationship between social worlds, in times of Turkish whips and Nubian traders as well as in times of Antonov bombers and mobile phones.[4]

Although Muslim traders living among hill communities had already brought some kind of institutional pluralism, the advent of British colonial rule and its Native Administration system was probably the first time that any institutions other than those generated in and by the communities themselves had gained hold over wide areas of the region; its impact still shapes public administration to this day.[5] But it is the uncertain role of such 'newcomers' to be both destroyers and constructors during decades of political violence and development projects, which bore the ambiguities of today's attempts to develop the region. It is these ambiguities that both form and inform the following text.

The specific area under discussion, nowadays known as *rīfī* Heiban,[6] lies in the eastern region of the Nuba Mountains. Heiban developed rather recently as a regional as well as an ethnic notion, especially under influence of British colonial rule. Hill communities in the area have often been in more or less intensive contact with neighbouring communities, blurring any concept of fixed borders between 'tribal territories'.[7] The identification of a group of hill communities, and later of a rural region, under the name Heiban was a process on which colonial administrators had a crucial impact, for instance, by establishing an administrative centre called Heiban near settlements around Ebaŋ mountain. However, in present

discussions about the region, its scope, and its most likely urbanized centre (Heiban or Kauda), this process is subject to immensly diverging interpretations.[8]

Before a recent war (1987-2002), the rural town of Heiban had been an area of touristic quality, to which, for instance, art students from the University of Dilling travelled for one or two months every year, living in guest houses and drawing pictures of the landscape. With the war and the dismantling of public buildings by armed forces, the population became concentrated and movement in the area was placed under close control. The hills were occupied by the military as posts from which they could observe the whole valley and shoot rockets and grenades into the mountains and at any sign of human movement outside the town, whether of civilian farmers or so-called rebel soldiers.

Large scale fighting stopped here only after a Ceasefire Agreement was signed in 2002 by the major antagonists, the Sudan People's Liberation Movement / Army (SPLM/A) and the Government of Sudan (GoS), based in the capital Khartoum. This was followed by extensive peace talks conducted in Kenya, which resulted in the Comprehensive Peace Agreement (CPA), signed on January 9th, 2005. The crucial agreement was the right of the southern areas of Sudan to opt for either independence from or unity with the north through a referendum in 2011. On July 9th, 2011, South Sudan became an independent country. The remaining areas, namely the federal states of South Kordofan and Blue Nile, as well as the contested border region of Abyei, which were not clearly established as being controlled by either party, were supposed to engage in so-called 'popular consultations' about their future status.

This agreement did not stop the multitude of armed conflicts in the Sudan: In Darfur, a region that had suffered unrest for decades, a full-scale war broke out in 2003, and still continues.[9] In the Red Sea state, the Eastern Sudan Peace Agreement stopped the open, armed resistance of the Eastern Front in October 2006, but this cessation of violence remains uncertain. In Abyei, a small oil-rich region on the border between northern and southern Sudan, a clash between SPLA and the Sudan Armed Forces (SAF) nearly destroyed the central town of the region in May 2008, and new fighting in May 2011 led to the full military manifestation of accumulated tensions. In June 2011, South Kordofan was once again engaged in a full-scale war; Blue Nile followed in September 2011.

In spite of similar structural conditions underlying these recurring wars,[10] the way they are fought has changed immensely due to the advent of navigation by GPS, satellite telephone, and solar batteries. New technologies have not only multiplied the possibilities for information, they have also changed the organizational practices of those involved in the fighting. What has not changed, though, are the difficulties of providing food and water to those remaining in war areas.

This particular provision has always been a matter of concern in the region,[11] as it relates to the basic questions of human survival: how to make enough food and water available? How to know and decide what is 'enough'?

Neither of these questions have been answered in a such a way as to establish stable arrangements or non-violent contest in the region. The fragility of both previous and present arrangements leaves room for substantial improvement. A dominant concept used to describe such desired improvement is that of 'development'; the following text portrays some of the attempts at 'development' made in Heiban between the promises of a signed peace agreement (2005) and the restart of an old war (2011).

In a nutshell, I am interested here in the implications of development projects as emerging social sites in Heiban between 2005 and 2011. The analysis starts with the preconception that 'development', as an organizational field, is formed of intertwined political and technical processes. 'Political' in this context refers to the act of defining 'problems'; in other words, the process by which it is decided that something either is or is not a problem. 'Technical' here refers to the finding of solutions to these defined problems. In the course of the argument, prioritization is proposed as the element that makes their co-existence inevitable: Various decisions about what is more or less important define courses of action in both.

Because this decision-making process cannot be reduced to a set of simple, single organizing principles, its analysis requires various flexible perspectives. In consequence, the chosen textual strategy works with different points of view, in order to produce an analysis that is simultaneously both linear and cyclical – linear in its transformation of fieldwork-based anecdotal observations into a successive narrative; cyclical in the sense that it employs successive different perspectives in the process of doing so. Thus, rather than suggesting 'the' reading of 'the' situation, I present instead several different readings of situations and their context. To reflect this, the text is therefore organized in a particular form, reflected in the organization of the contents as a table displaying both rows and columns.

The rows in the contents represent case-studies based on specific issues, namely food production, water supply, extension of infrastructure, and processes of information.[12] Each row, then, can be taken to indicate the unfolding of a particular 'cycle' of interpretation, each corresponding to a specific issue, or identified 'problem'.

Following a theoretical introduction in Row 1, the main focus is on four development projects and their context in Heiban town and two adjacent villages, Abol and Kubang.

Row 2 discusses an initiative of migrants from Heiban living in Khartoum to establish a cooperative for agricultural production in their home region. The case study is presented on the background of existing organizational practices of agricultural production in Heiban and of international and national discourses on food security and agricultural modernization.

Row 3 looks at an attempt by two international organizations to solve problems of water supply in Abol, specifically through the construction of micro-dams and through the provision of a water yard. The background is given here through the mapping of existing water sources in the village, and a description of international and national programmes for water supply in South Kordofan.

Row 4 takes up the issue of rural areas' connections to supra-regional infrastructural networks through the case study of road construction in Kubang. The question of how connections are created is first outlined briefly through a glimpse at the Nuba Mountains' colonial history. This is then supplemented with an examination of larger-scale infrastructural programmes in the region.

Finally, row 5 redraws recent attempts to create a network of village development committees in and around Heiban through a programme instigated by the international organization IFAD. These attempts are viewed as connected with trial attempts at creating networks for development-related information flows. The structural problems involved in such trials are discussed through a staff member's experiences of data production in a South Kordofan-related development project, with the addition of short outlines of other efforts to create information management systems for the region.

The argumentative logic of the rows is thus problem-oriented: How to increase the output of agricultural production? How to increase the availability of water? How to connect rural areas? How to know what rural areas have and need?

The rationale of the columns is to focus attention on the particular perspective underlying their chapters. Two sets of perspectives are thereby developed. Columns 1 and 2 combine ethnographic observations and their analysis. Column 1 concentrates on narrative approaches to the raised issues by asking: What issues are of concern, and to whom, in situations that I, as fieldworker, have encountered? Column 2 contains systematic analyses related to these issues, yet also highlights the existing heterogeneity of epistemological practices.

Columns 3 to 5 relate form and content in a different way.[13] The elements 'situation assessment', 'definition of objectives', 'planning', 'implementation', and 'monitoring & evaluation' are the basic phases in many cyclic models of development project management (GTZ 1996, NORAD 1999, EU 2004). They are used here to indicate the various interrelated perspectives employed to analyse the implications of development projects on different scales: Column 3 discusses how the future is problematized in international and national development discourses by pointing at disparities between 'probably will be' and 'should be', referred to in this text as *projections*. Several models and practices of projecting scenarios of

the ‘future’ are presented in their relation to ongoing development programmes in Sudan, especially in South Kordofan.

Column 4 examines documentation relating to planning activities, such as governmental five-year plans, strategic maps, and programme outlines of international development organizations. It also offers a critique of the plans’ assumptions and their political implications. Finally, column 5 follows narrative accounts and my own observations of resulting practices in specific projects.

The resulting text does not endeavour to thoroughly discuss the complex theoretical debates touched on by the perspectives taken, but rather aims to instrumentally raise ‘conceptual awareness’ of the case studies. The terminology developed to this end consists of core elements (titles of the columns and introductory chapters), and auxiliary terms, which are employed only sparingly in the interests of legibility.

Acknowledgments

This thesis is the result of 4 years of research; I am greatly indebted to many people accompanying me in these years. I cannot mention them all explicitly, and I apologize to those I excluded.

I thank my two almīs matribus, the University of Leipzig and the Martin Luther University of Halle-Wittenberg, and the two lecturers, who influenced me most: Prof. Bernhard Streck and Prof. Richard Rottenburg. I thank for the financial support of the DAAD and the Studienstiftung des deutschen Volkes, as well as the administrative support of the University of Khartoum, especially Prof. Adam al-Zayn and Dr. Mūsa ᶜAbd al-Ǧalīl.

The thoughts expressed here are based on numerous dialogues with my 'hosts' both in Halle and in Sudan. I thank Paul Amphlett for his meticulous proofreading of these expressions.

In Halle, I thank first of all my supervisor and intellectual guide Prof. Richard Rottenburg, who directed me in the best sense of the word. I also thank Conny Heimann for her administrative patience, and my friend Ronn Müller for many fruitful coffee breaks. I thank the people of my academic environment for their intellectual impetus, specifically my colleagues in the LOST working group at the Max Planck Institute for Social Anthropology. My last eight years of research were only possible because of the stability provided by the DFG-funded SFB 586 ("Difference and integration"), and I am indebted to all colleagues I worked with during all these years, especially Sandra Calkins and ᶜAbd al-Raḥmān Bello.

In Sudan, I thank the people of Khartoum, Heiban, Abol, Kubang, and Kadugli who shared their time and thoughts with me. I express my special thanks to Kamāl Yussif, the family of Fānūs, Saᶜadiyya and ᶜIsa, Yussif Tiya, and Joshua Kodi. I am deeply grateful to my friend Ibrāhīm Kanno and his family in Kadugli, who were torn apart by a war, once again.

Above all, I am indebted to my families: my parents Marion and Rainer Ille, in Halle, my brother Steffen and my sister Katharina, who brought fourth a great part of how things are going for me in my involvement in the world; my parents Guma Kunda Komey and Hanan Timothous, in Al-Šuhadā', Omdurman, my five sisters and brothers Julia, Judy, Jessica, Jesse, and Jonas, who prepared all Sudanese grounds for me to stand on and whose people's suffering I share; my parents Maḥǧūb Šarīf and Amīra al-Ǧizūlī in Al-Ṯawra, Omdurman, and my sister May, who share my everyday life and my love for Mariam, who holds my world together in its inmost folds.

I dedicate this text to my three families, who struggle, each in their way, with 'the system'.

Halle, June 30th, 2012

Preface

Zamān mā kān ᶜindanā mustaqbil. (In former times, we had no future.)

Kamāl Yussif, speaking about a feeling of contentment that is past,
March 17th, 2008, Omdurman.

Two schools line the main road of the rural town of Heiban. The fresh white paint on the walls of one of them has not yet disappeared under a cover of fine brownish dust. The other school lies still in bombed-out ruins. The presence of both characterizes a place caught in cycles of construction and destruction.

On March 18th, 2010, the last day of my fieldwork,[14] I passed the morning in the home of my host family in Heiban. When I woke up, several hens were in my room pecking at the sorghum grains that had fallen beside the iron barrel containing the stored grain. I could hear the boar near the sorghum-stalk fenced bathroom as it tried to remove the bricks I had laid to prevent the pigs from digging in the wet soil. When I left the cool *ɾakōba*,[15] a sun-roof around my room, I saw *ḥabōba*, the grandmother, with a two-metre long hoe, as she prepared the field inside the courtyard for cultivation. She was probably well over 70, but she started the new agricultural year earlier than many others, who waited for signs of rain before beginning preparations. The last harvest had been good, but the timing and amount of this year's rain would determine to a great extent how scarce food would be the next season, and, therefore, whether livestock would have to be sold to buy grain.

I greeted Saᶜadiyya, the only daughter still staying with *ḥabōba* at home. In her language, *ḍaabəlâ,*[16] I said '*awɛŋɛrá*,' - 'Are you fine?' She answered '*ɲí gɛ́ŋɛr';* 'I am fine'. Two goats used the leather strings of a wooden bed, the *ᶜangarēb*, to scratch their back by passing beneath them; I chased them away before sitting down for the black morning tea. Saᶜadiyya waived a small fan, the *habāba*, to keep the fire going between the three stones on which the pot of water rested. Smoke from the burned wood surrounded her and did not bother the hens, who tried to take leftovers before being put to noisy flight over and over again. Jijiyya,[17] her youngest daughter, brought the glasses, while her son, Kuku, returned by bicycle from the market with milk powder and *ᶜēsh,* the round sorghum bread.[18]

The house was adjacent to a quarter called 'Fellata', after migrants from West Africa who had previously lived there, practicing mostly pastoral nomadism, and who had left the area during the war. In the few relatively stable years after 2002, they had returned to camps near the town. They had also resumed selling milk at some places, but my host family preferred the rather expensive, but non-perishable, milk powder from the national capital, Khartoum. Bread was also a rather costly pleasure, and most meals consisted of red sorghum porridge,

ᶜasīda, and thin red sorghum sheets, *kisra*, poured over with *mulāḥ*, a sauce existing in many variations, based on ladies' fingers, or tomato pulp, or spinach, among others.[19] Although meat was one of the most expensive items, whether mutton, beef, chicken, or pork, Saᶜadiyya, who owned a restaurant in the market and had worked as a cook for the organization NCA, managed to keep it on the menu, together with tomato salad and roasted potatoes. Fruits, however, remained a luxury during the dry season, apart from the occasional banana; mango and guava would be abundant in the rainy season, in June or July.

After saying '*maᶜa salāma'*, 'goodbye' in Arabic, I left for the market. I met the sister of *ḥabōba*'s husband's second ex-wife Ḥabība near the door. She had brought a 16-litre plastic barrel full of water on her head, as she did many times throughout the day. Many women were on the road, some coming to Heiban with something to sell, some leaving with something bought. On the way I passed the electrical mill of a trader, where mostly women and girls waited to get their grains ground into flour. On the other side of the road, another trader had stored the sorghum from his mechanized farm, and a red Massey Ferguson tractor rested in front of his house.

It was Thursday, the weekly market day, which filled the rural town with moving people and moving commodities. The market place was covered with little plastic-roofed shops, and, like most of their goods, the owners came from towns in the north: Umm Ruwabah, El Obeid, Kosti, Khartoum.[20] Goods from industrial production changed hands: sugar, sweets, and biscuits from domestic industrial production, and imported tea, coffee, and spices; but also vegetables, fruits, and grains from larger agricultural schemes with lower prices, which competed with small-scale producers for customers and land. Several boys stood in front of boards selling bread and groundnuts in little plastic bags, the latter of which had started to cover the grounds of the town. Girls assisted tea sellers, whose appeal was sometimes not only the quality of their tea and coffee, but also the chance of the occasional flirtation with their diverse customers. Beside one group of tea drinkers, an old man displayed a small heap of mangos from the tree he owned.

Near a small livestock market, boys were sitting around, enjoying small talk, playing cards, gameboys, games of skill with little stones, football, or playful wrestling. Others sat on donkeys with carts to transport purchases home; some of them had put an iron barrel into the wooden frame of their cart and brought water to homes and shops. While the majority of women and girls, and sometimes also men and boys, took the water from one of the scattered manual water pumps, the boys with donkey carts went to the water yard, called *donkī* or *siḥrīğ*. An old guard stayed there, collecting fees from the users. Each day a lorry with a tank came by, belonging to the Joint Military Units stationed outside the town.[21]

Hundreds of soldiers were supplied with this water, and their demand was more than once a source of grievances, when the water pumped up every night was no longer enough for all the other inhabitants of the town.

I arrived at the bus station to greet one of the bus line owners, who was busy arguing with the paid labourers who handled the luggage of people heading for Khartoum. Nearby new shops had been opened by young men, a studio with digital cameras, a motorcycle workshop with spare parts, and a mobile phone shop with recharging services for the multitude of mobile phone owners without electricity at home. The shops were colourfully designed with a mishmash of pictures and euphemistic names like *istudiū awlād al-rabb*, 'the studio of God's children'. A huge electricity station was situated nearby, the hardware of which had been installed in the early 2000s, funded by the central government in Khartoum. It was meant to ensure the political loyalty of a population surrounded by a ring of military posts and violent clashes, but it had never produced either loyalty or electricity. At that time the installation was finally complete, but work on cables to the houses was not finished by the time a new war broke out.

The town's new administrative structures had been established slowly throughout more recent years, without necessarily creating clarity and certainty: until 2009, Heiban hosted two separate, mutually hostile police forces; one stationed in buildings attached to the mosque, the other in the former, partly destroyed boarding school. Near the power station was a bombed prison; big warehouses opposite the market, once used by traders, still lay empty; like the many other deserted buildings, reminders of the latest war. At other places in the town construction was in full swing, as at the site of the new building for the locality's administration and that of a Christian theological college funded by the organization Samaritan's Purse.[22] Lorries filled with sand from a seasonal riverbed drove by, and many young men hung around hoping for work at a construction site. Near the riverbed, little kiosks for sorghum beer, *marīsa*, had been built by the town's administration, after the old private huts had been demolished.

Only two years later, bombs falling on Heiban tore down buildings again. Already during my stay, whenever I saw soldiers on leave walking around with their AK-47s, or land cruisers filled with soldiers leaving to their posts, I was reminded of the persistent presence of military rule, and how much it dominated Heiban. Military violence had overshadowed the town and the rest of the Nuba Mountains for far longer than the current troubles. Foundations and structures had been repeatedly destroyed or torn down even before the Second Civil War (1983-2005); and foundations and structures had been continually built and rebuilt before the most recent period between the wars (2005-2011). In the following text, I aim to illustrate some of these processes of destruction and construction.

1 Introduction

At almost any moment, people are up to something, pursing ends and carrying out projects. On encountering or learning about this or that, they hold up their activity, pursue different courses of action, alter plans, and so on. What I call the phenomena that “lead to” actions are the phenomena that induce people to hold up, divert, alter. These phenomena cause changes in the flow of action.

Theodore R. Schatzki, *The site of the social*
(Schatzki 2002: 42)

1A: Topography

Fieldwork has probably the most undisputed right to exist in anthropology as an academic discipline. A line could be drawn, for instance, from one of the discipline's mystical ancestors, Malinowski, and his introduction to "field work" in *Argonauts of the Western Pacific* (Malinowski 1922/1984), to one of the numerous recent publications about the redefinition of 'the field', such as James D. Faubion and George E. Marcus' volume about fieldwork as *Anthropology's Method in a Time of Transition* (Faubion & Marcus 2009).

I will relate here to three questions about fieldwork, in order to clarify the perspective I intend to take up under the title 'topography'. The scope of 'the field' has been increasingly debated during the last decades, specifically its spatiality, its temporality, and its division into observers and observed. Let me start with the spatial aspect, with the specific question: *Where* is 'the field'?

The 1990s, under the significant influence of what has been called 'globalization' saw an increasing questioning of one-sited ethnography; one possible solution to its identified limitations being a shift to multi-sited ethnography. An iconic contribution to this terminology was made by George E. Marcus, who demanded different "'tracking' strategies" to be followed (Marcus 1995: 95). Gupta and Ferguson too, questioned the utility of a "methodological commitment to spend long periods in one localized setting" (Gupta & Ferguson 1997: 4) and proposed adopting a "multistranded methodology for the construction of […] 'situated knowledges'" (Gupta & Ferguson 1997: 37).

This was not the first attempt to go beyond concepts of closed, ideally coherent 'local communities'. Another approach adopted was that of including 'the context', for example, by adopting an extended-case method.[23] The rationale for extending cases is the acknowledgment that 'the local' consists of not merely the observable present, but emerges from the situational interaction of structures and events on different temporal and spatial scales, thus providing locations, or sites, for specific social action. Since structures can only be derived from a number of local, situational observations, not only does the problem of aggregation appear, but also the associated question: *When* is 'the field'?

The answers that most closely approach what is intended by my argument oscillate between the terms 'situation' and 'process', in which the former is encountered and the latter drawn together[24]. Situational analysis, for example, is concerned with the relations of concrete social interactions to the social worlds they take place in.[25] In the form implied here,[26] situational analysis pays attention to the variety of narrative, visual and historical discourses involving and involved with that situation, including its non-human elements. This includes

the situatedness of the researcher, who aims to translate social situations into a textual representation[27], leading to the question: *Who* is 'the field'?

The relation between researcher and study objects/subjects is probably the most disputed part of anthropology. A substantial crisis was suggested by the so-called Writing Culture debate, the most valuable lesson of which is arguably the importance of remaining sensitive to the cognitive processes involved in fieldwork and ethnography, which suggests making the researcher visible without making him or her the main issue.[28] It is the latter that needs to be communicated, if fieldwork-based ethnography is understood as making sense of an interstitial space between cognitive and communicative processes in both a hosting field *and* in a hosting academic environment.[29]

In short, the practical problem considered here is that of formulating which issues relate my fieldwork observations and my academic environment through the text. In other words: What are the topics?

Following the previous lines of thinking, my formulation of topics begins with social situations, and attempts to determine what constituted their current appearance by relating them to contextual processes. This is necessarily connected with intersubjective exposure, which conveys a sense of recurrence and urgency of this or that topic. It is one of the challenges of qualitative research to represent this sense of recurrence convincingly outside the context of its occurrence. 'Topography' is the approach chosen here.

A conventional usage of the term 'topography' comes from geography, where the term refers to the description or mapping of certain environmental characteristics of a specific place, the 'world' as it is; the ontological stage of human action, so to speak.[30] The etymological root of the first part of this terminology, the Greek *tópos*, means 'place, location', and includes – via the designation of places where certain figures of speech were used – *these figures of speech themselves* (Kluge & Seebold 1989: 732). In relation to the preceding thought process, a *tópos* should therefore be understood, in the context of this text, as any locally recurrent feature that, through its consistent appearance in my long-term fieldwork, has come to be perceived by me as being of fundamental importance.

In this sense, my topographical narratives present the result of a filtering process, by which cognitive processes engaged in during my fieldwork were reduced to an itinerary that reflects how the conviction that 'such-and-such is an issue' came about. To this end, suggestive, 'thick' narratives[31] are formed so as to act, in a figurative sense, as 'reflective strolls': The narratives interweave conversations with descriptions to draw together a topographical site.

1B: Epistemology

The above description implies that the re-presentation of such a site also has a negative component – the result of excluding aspects. It is in this sense that John Law described (and questioned) 'method', when he stressed its performative character, in the sense that it "helps to produce realities" (Law 2004: 143). This happens through "a continuing process of crafting and enacting necessary boundaries between presence, manifest absence and Otherness", because "presence is impossible without absence" (Law 2004: 144). It is thus the process of making parts of 'what is out there' visible, while ignoring or rendering invisible others, that decides how *representations* of realities are produced. The absences, the invisibilities created by such representations comprise a contentious, political aspect.

Consequently, this pertains also to representational practices other than ethnography. Let me approach the implications of this aspect through some examples, which will also serve to prepare the ground for the topics to be discussed later on (agricultural production, water availability, extension of infrastructure, and data production).

The first example deals with the problem of modernizing agriculture, often connected to the question of mechanization. James C. Scott argued that so-called high-modernist agriculture implies "radically simplifying […] farms and fields so they can be more directly apprehended, controlled, and managed" (Scott 1998: 262). He outlined several aspects of agricultural production, where this simplification took place, namely the standardization through "monocropping, mechanization, hybrids, the use of fertilizers and pesticides, and capital intensiveness" (Scott 1998: 266). I want to focus here on the aspect of spatial organization, namely the development of "large, finely graded fields" and "uniform irrigation" (Scott 1998: 268).

In Scott's argument, the following happened in agricultural development interventions in Africa, continuing on from colonial experiments: The multiplicity of crops cultivated by 'the indigenous' on the same fields was perceived as indicative of a lack of ability to organize or even understand the process of 'taming' nature (Scott 1998: 273). The unpredictability created by "fugitive" fields in shifting cultivation was seen as challenge to the mapping and managing of land and population (Scott 1998: 282). The combination of different cultivation methods on single farms were regarded as inferior to the clarity produced by experimental farms with their presumed control of all significant cultivation variables (Scott 1998: 285). In short, instead of complex, experienced farmers with "something of a small-scale experimental station" in their own right (Scott 1998: 285), those interventions dealt with "fictional farmers" (Scott 1998: 299) and thereby missed the chance to create a cognitive and communicative link to the realities of their 'beneficiaries'.[32]

This has been debated as neglect of so-called indigenous knowledge, and gave way to concepts of epistemological plurality in development discourses.[33] In a more general sense, these concepts are critical of the exclusive claims of universal epistemological technologies such as 'scientific' methods, and their unquestioned superiority to allegedly limited, 'local' knowledge.

An example is the representation of 'reality' through maps. Tim Ingold described the situation of a stranger, who uses an artefactual map as a means of orientation, in contrast to that of a 'native', who finds his way without a map. The native may be regarded as having a mental map as guidance, but Ingold refuted such a supposition as referring to a system of coordinates comparable with the coordinates on the stranger's map. The native's places "do not have locations but histories" (Ingold 2000: 219), they "exist not in space but as nodes in a matrix of movement" (Ingold 2000: 219).

The gist of his further argument is "that no map, however 'modern' or sophisticated the techniques of its production, can be wholly divorced from the practices, interests and understandings of its makers and users" (Ingold 2000: 225). While this is a necessary point to question any illusions of representing "'the geographic facts' on the ground within a single, universal system of spatial coordinates" (Ingold 2000: 230), what happens in situations in which maps are supposed to answer specific questions?

In so-called natural resource management, for example, nature is divided into managed and unmanaged parts, suggesting different levels of predictability – degrees of certainty about what natural resources will be available, and about how, where, and when. In situations in which people draw their water from seasonally fluctuating sources, for example, this striving for predictability is an essential part of human ecology. Considering, then, the potential of maps and other technologies to increase predictability, it is no longer just an issue of *different* ways, but an urgent question of *better* ways.

Ingold distinguished between mapping, where maps are "by-products of story-telling" (Ingold 2000: 234), and map-making, "end-products of projects of spatial representation" (Ingold 2000: 234). In this terminology, the aim of 'story-telling' through maps is, in this case, the depiction of the cyclical appearance of water at different places, whose fluctuation is either captured in some way that allows enough sense to be made to guide action, or else not. Similarly, the creation of maps for development projects can be seen more as instrumental mapping than perfectionist map-making. This suggests asking what the 'story' is, who is telling it in which way, and how this relates to predictability of events in timespace.[34] A possible way to look at these 'fictions' and 'by-products of stories' is thus to regard them as strategic essentialism,[35] whose rationale and context have to be understood.

What is evident here is the strategic production of visibility, connected to the emergence of a social site. But the production of *in*visibility is also an intrinsic part of such an emergence. Trevor Pinch, for instance, made a point about infrastructure: that it becomes only 'visible' when humans make it an issue, during creation, or maintenance, or, more generally, within the framework of "the mundane politics of infrastructure" (Pinch 2010: 87). Without engaging here in what Susan Leigh Star called "ethnography of infrastructure" (Star 1999), it is nevertheless important to be reminded that the understanding of infrastructure as "part of the background for other kinds of work" (Star 1999: 380) tends to veil that "[o]ne person's infrastructure is another's topic, or difficulty" (Star 1999: 380).

Infrastructure, by definition 'underlying' other things, consists of technologies supposed to unobtrusively perform some function or task 'in the background', or 'underground'. However, like all technologies, it has inscribed demands of usage and maintenance, which can be misread or re-read. Madeleine Akrich proposed de-scripting such technologies, for instance, to capture the implications of so-called technology transfers to less-developed countries (Akrich 1992), or, in other words, to "follow the device as it moves into countries that are culturally or historically distant from its place of origin" (Akrich 1992: 211). What happens in such cases is "the creation and extension of networks that simultaneously define both the social and the technical" (Akrich 1992: 213), as soon as users relate to devices. As devices are designed with an intention to relate users and devices in a specific way, the 'script' of the technology is intended to structurally restrict this interaction. In the case of a successful "stabilization", as Akrich calls it, the technology becomes "black boxed" and invisible, and neither the designer nor the user then needs to explicitly mediate between technology and user (Akrich 1992: 211).

On the other hand, such a stabilization may never occur, with the result that the technology remains constantly visible, a continuous renegotiation of the process of a technology irritating its users. Nevertheless, the concept of technology's 'domestication' may serve as a caveat against underestimating the creative, problem-solving process of usage, which "may change the form and practical and symbolic functions of artifacts" (Oudshoorn & Pinch 2008: 553). An important part of such a process is the placing of "attention on the ways in which technological objects are used and incorporated into the routines of daily life" (Oudshoorn & Pinch 2008: 553). The challenge is thus to understate neither the normativity implied in the creation and usage of technologies, nor the conditions of possibility of users' creative re-definition of inscribed intentions.

A wider definition of 'technology' helps to relate this also to the basic problems of development projects' epistemologies. 'Technology' is defined here as a set of procedures that enables or supports directed actions to produce a specific outcome. This includes

epistemological technologies, which are supposed to translate 'reality' into manageable representations. If one presumes that projects are always built around explicit purposes, often described as 'objectives', the translation of the supposed core of a project into linguistically bounded objectives is thus based on another translation that provides the sense of showing objective reality, an ontological stage on which the project will be performed.

There are established technologies, formats and genres for translating this fundamental reality into written artefacts, such as surveys and reports. This process of translation was a subject of Richard Rottenburg's argument about the creation of *metacodes* (Rottenburg 2009). The part of his argument that is relevant to the perspective developed here concerns the process that establishes a site of intervention in a way that is translatable to the communication processes at the managerial centre of a development project, which Rottenburg calls the "center of calculation", an "institution that collects *far-fetched facts*" (Rottenburg 2009: 87, following Latour 1987).

Rottenburg's argument contemplates the astonishing paradox of an organizational field – development cooperation – that shows in its results "that social development does not follow predictable rules and hence cannot be established according to a plan" (Rottenburg 2009: 178), but nevertheless continues to operate "according to a *technical game* oriented around the central dichotomy of effective-ineffective" (Rottenburg 2009: 177). A proposed explanation for such an apparent paradox is that the operation of a heterogeneous field such as development cooperation requires the adoption of some kind of communicable consensual representation of reality in order that explicit directions of collective action can be formulated.[36]

This attempt at communicable consensus can be illustrated using several conceptual metaphors, such as metacode (Rottenburg 2009: 180), reciprocity of perspectives (Rottenburg 2009: 193), pidgin trade language (Rottenburg 2009: 194), etc. The core situation remains that "[d]evelopment cooperation occurs in a global arena in which players seek to cooperate under conditions of *heterogeneity*" (Rottenburg 2009: 191). The basic caveat of the underlying argument is that there lies a powerful tendency in the technical game and its language to overlook what invisibilities, and thereby inequalities, they both create *and* are created by.

Together with the other critical lines of thinking sketched here, this caveat leads the subsequent perspectives. The analyses under the title 'representation' combine both my own propositions as to how to represent sites of development intervention *and* observations of the epistemological technologies of those involved in such sites.

1C: Anticipation

‘Development’ is conceptualized here as perceptible change of a current situation toward a situation that increasingly resembles a desirable, projected ‘future’.[37] This concept touches one of the basic sources of heterogeneity in development cooperation, namely the question of what is regarded as more desirable, as better than what is. This heterogeneity not only manifests in differences between principles of organization and ideas of how society should be, how social co-existence should be organized, how valued goods should be distributed, etc.; but is also expressed in differences between individual and group, between fuzzy ideas and objectives, and in the emotions and instincts of need and desire, among others.

Although I concentrate, within the framework of this thesis, on what is brought explicitly into the social site of development projects to foster cooperation, this also indicates who and what may be implicitly excluded from the site of such cooperation. The perspective of ‘projection’ is a first step to problematize this exclusion.

Projections, in the sense employed here, are attempts to anticipate the future. In demographics, for instance, prospective population numbers are derived from existing statistics by a projection into a ‘future’; projections in economics use aggregate data to construct a possible ‘future’ based on different scenarios, each in turn based on different expectations of changes. The semantic core of these projections could be described as ‘flattening of complexity through fragmentation followed by aggregation to make it representable’ - analysis, synthesis, and presentation. Projections are thus the claimed reduction of the degree of uncertainty about the future, the transformation of the unknown into an expression of measurable risks for managerial purposes. In order words, these projections carry an intellectual assessment of the present toward a potential ‘future’, thereby making the comprehensibility and visibility of the future their purpose.

However, projections are not only connected with exploring available options for action and attempting to support decisions to be taken. In the projected ‘future’, supposedly (according to the projection’s self-ascribed purpose) significant aspects of the current situation are highlighted and implicitly set above other, less significant aspects. Furthermore, the necessarily fragmented bases of projections touch what Nelson Goodman formulated as a general problem of projection, namely the “problem of defining a certain relationship between evidence or base cases on the one hand, and hypotheses, predictions or projections on the other” (Goodman 1954/1983: 84).[38] A visual equivalent, for instance, would be drawing a line between singular statistical data in a coordinate system, as if all intermediate values existed – the actually discrete, momentary, or ‘dotted’ character of one’s observations is dissolved, in order to picture correlations and continuous developments.[39]

One research question that can be formulated based on these conceptual considerations is: What kinds of actions are performed in the field of development cooperation with the intention of creating or increasing the predictability of future events and processes?
In this sense, projections combine epistemological practices – to know what is –with the search for, and claim of, anticipatory knowledge – to know what (potentially) will be. The relevance of such a perspective can be seen in the communication of lack, which relates a perceived need to resources able to cover that need, and – in an ideal case – also initiates the appropriate processes to create a connection between both.
Let me take as an example the supply of food and water. Food and water for the human body need to be balanced in both quantity and quality. But the differences between individual human bodies leave a degree of uncertainty as to what, exactly, 'balanced' is. What seems to be at stake is the relation between need and supply, and whatever actions bring both together. From a technical point of view, the task at hand is thus assessment, production and distribution, and how to organize them. This appears as a managerial problem: Needs are simply the result of perceived discrepancies between 'should-be' and 'is', which invite actions to 'improve' the situation: to minimize these discrepancies.
While this *can* be understood as a technical process (the balancing of need and supply), it is just as much connected with a political process (prioritization): How to make sufficient food and water available for an individual human body as well as for larger groups is connected to the differentiation of *how much* and *what kind* of food and water suffices *for whom*; in other words, to contested issues of prioritizing consumers. This process of differentiation marks the point at which projections become more than mere exercises in prediction.
To summarize the argument: Development interventions relate basically to three questions:

1. What has to be changed?
2. What would be better?
3. How can the latter be achieved?

Since each intervention constitutes an effort, which must be legitimized, this also implies an answer to the question of what happens if no intervention takes place. An anticipatory technology employed to answer the latter question is that of projection. In the perspective developed here, projections are seen as technology to (try to) anticipate future events; to forecast, to predict. These projections come together in development discourses with both implicit and explicit normative judgments of the relative merits of both the current situation ('what is') and projected, desirable situations ('what should be').
Projections are examined here to indicate the intrinsic link between a political aspect ('what aspects of the 'future' are chosen to view?') and a technical one ('how are those aspects of

the ‘future’ viewed?’). This link is a practical and inevitable one: In a heterogeneous arena, it shows not only the empowered technologies of anticipation, but also on which explicit versions of ‘future’ development cooperation may be based, each with its own implicit invisibilities, contestations, contradictions, etc. In the following case studies, this thought process is formed into short analyses of the developmental concepts of food security, safe water, sustainable growth, and evidence-based development in their relation to projections concerning South Kordofan.

1D: Teleology

Planning, as a teleological technology, presumes that the future can be transformed through intentional intervention. Development planning, by extension, presumes that development can be achieved as the intended consequence of purposive social actions.[40] The attempt to turn ideas into actions, in this case to translate 'projected development' into social action, calls for organization. What is crucial in the following is this process of translation of a directional thought – a developmental idea of a desirable future – into organizational directives.

This starts with the assumption that the present field of development cooperation operates under the hegemony of managerial thinking;[41] the projectile language of development planning speaks much of its background in strategic management.[42] An observable change in post-1989 development discourses is the increasing deprecation of *central, governmental* planning[43], but also a stress on the central role of *strategic* planning in (large-scale) *management*.[44] In the end, the emphasis shifted not away from planning altogether, but rather differed in who is doing the planning for whom, and how that planning is done.

John Martinussen distinguished the different directions by the terms "imperative planning" and "indicative planning" (Martinussen 1997: 227) with state-managed development as a focal point. The continued practice of creating five-year plans with a focus on macro-economic models, according to Martinussen, was due to there being "no obvious alternatives to the models used in economic planning" (Martinussen 1997: 231). However, the obvious shortcomings of planning schemes led to debates in which it was "stressed that planning is a complex and multifaceted social process, in which the actual preparation of the five-year plans is reduced to a single stage among many" (Martinussen 1997: 231).

To clarify my perspective on planning, I want to think through three lines of approach, viewing plans:

1. as instruments of control and directive coordination;
2. as artefacts of communication in organizations;
3. as objects of negotiation of power in the creation and use of the former two.

1. A strong line in organization studies has been established around the observation that "[i]n most organizations the goals toward which participants direct their behavior are different from the goals that motivate them to participate in the organization" (Scott 1981/1987: 269). This line establishes planning in the framework of "integration of behavior" (Simon 1945/1976: 96), based on decisions and choices made towards attaining objectives. There is thus a potential conflict between individuals and organizations concerning different objectives,

which calls for management to secure the continued survival and performance of organizations. In this sense, plans are instruments of, or at least experiments in, control.

Peter M. Blau and W. Richard Scott discussed “central planning” as one of the possible concepts of managerial control, whose focus is “the coordination of operations through advance planning of the work program” (Blau & Scott 1963: 167). This focus is built on the assumption that management can pre-define the structures of operations, pre-creating a flow of actions by a set of interrelated directives; in other words, create a ‘real plan’. Blau and Scott highlighted the difference of this “assembly-line” procedure – the structure of the workplace directs the actions of the workers – from “job-lot” procedure – the actions of the workers are constantly directed through a hierarchy of directives (Blau & Scott 1963: 167).

Planning is in this case the anticipation of the means of deployment of human and other resources in order to achieve a predefined goal. This concept is connected with many assumptions concerning both the power of top-down management and human behaviour.[45] It assumes also that plans are created within, and are addressed to, a more or less closed system. The following two perspectives question these assumptions.

2. A different way to describe plans is to look at them as artefacts. Strategic plans in particular can be seen to picture “an organization as an actor with clear goals and with the capacity to achieve those goals” (Hokyu & Suarez 2005: 73). But even operational plans do not, according to Karl E. Weick, fulfil the function assumed by the concept of “central planning”. He argues “that plans are symbols, advertisements, games, and excuses for interactions” (Weick 1969/1979: 10). Plans signal efforts to be undertaken in the face of doubt about the organization’s performance; “they negotiate a portion of the reality that then comes back and rearranges the organization” (Weick 1969/1979: 10). In this sense, plans try to establish a perception *about* the organization. But they can also be used to examine such a perception “because they are often to test how serious people are about the programs they advocate” as whoever proposes a programme “should be willing to spend the effort necessary to justify the program and to embed it in a plan” (Weick 1969/1979: 10-11). But as artefacts to be created and interpreted, plans also “induce conversations among diverse populations”, which may have positive, albeit mostly unplanned consequences (Weick 1969/1979: 11).

For what follows, it has to be noted that Weick operates also with what he calls “’real’ plans, those that bid the energies and time of people” (Weick 1969/1979: 10). This ‘bidding’ has its limits, too, and, in an advisory turn of his argumentation, Weick warns that “[i]f administrators are overconscientious about trying to plan rationally for the future, they may produce a plan that artificially simplifies the complexity involved and unnecessarily admonishes people to work toward goal consensus and consensus on values”. Even more, he adds, “[a]ttemps to

make a structure ‘understandable’ to everyone could lead managers to introduce excessive simplification and limited linkages among people” (Weick 1969/1979: 103).

This leads to the recognition of a more complex aspect of plans, namely the principal-agent problem.[46] In a simplified form, this problem concerns the inevitable distance between different levels of an organization. Somebody giving somebody else a task will not necessarily stay in the location where the task is done, as delegation is a way of freeing oneself from a task. This freedom does not, of course, include freedom from the responsibility to perform, which means that either trust, or control, or something between the two, must bridge the gap between the principal’s being here and the agent’s being there.

The necessity of thinning the upward flow of information then arises, as many accounts of different operations come together on the principal’s desk, who cannot work with the same complexity of information about each single operation in this multitude. The ‘reality’ of each operation has thus to be communicated in an aggregated way, which creates another gap; again, something between trust and control must provide a bridge.

Plans can be regarded, then, as attempts to create such an ‘infrastructure’ between principals and agents; a template of control, so to speak. However, this perspective still operates with the presumption that an organization exists as an entity and that plans are (multi-functional) expressions of top-down managerial activities within this organization. The first presumption will be discussed in the next chapter; let me concentrate here on the second presumption.

The principal-agent problem already points to ambiguities in the power structure of this arrangement, as ‘aggregation’ means also the creation of invisibilities, which can be a powerful act. What if the basic direction of a plan – somebody plans for somebody – is also questioned regarding the embedded power structures - in other words, the politics of planning?

3. A possible approach would be to point out the inherent inequalities created through planning. The politics of planning include what has been referred to as ‘the dark side of planning’ (Allmendinger & Gunder 2005): the suppression of interests and participation of some on behalf of some others; abysses of planned destruction; social exclusion as an intended or unintended consequence of spatial planning; etc. Disparities existing in any representation of the many by the few can be seen in planners’ claims to have superior abilities to construct a line of actions leading to identified objectives. Inequality existing in any social formation can often be found hiding behind the claimed ‘objectivity’ and well-meaning character suggested by the rational form of planning’s artefacts.

However, Allmendinger and Gunder suggested moving away from a terminology that invokes, as Derrida pointed out, a “reliance on preferential binaries” (Allmendinger & Gunder

2005: 97). What *kind* of destruction?, What *kind* of exclusion?, What *kind* of inequality? – These are the questions that must be addressed in valuing "the nuances and shades of everyday planning" (Hillier 2002: 17).[47]

Considering these aspects for development projects, another question appears: On the one hand, these projects are supposed to be the result of defined objectives and organizational consequences drawn from these objectives. On the other hand, these objectives are supposed to be in the interest of those for whom – and, ideally, with whom – these projects are undertaken. What kinds of communities or groups are thus engaged in these activities? Who is defining whose interests?

These questions lead me to discourses surrounding the term 'participation'. In most cases, these discourses relate to "a recognition of the solidly substantiated fact that the development process does not automatically distribute the benefits *according to need*, merit or effort" (Martinussen 1997: 236; emphasis by author), but that this process is *related to the power* to control distribution. A subsequent change from a top-down to a bottom-up perspective assigns the strife for equity to the self-organization of interest groups (Martinussen 1997: 236).

This confronts us with a puzzling question: How can such interest groups, presuming they exist, acquire the skills to organize themselves, when the exclusion from skill development is the main reason for those groups to be formed? And by extension: How can the inequalities that caused their strife in the first place be reduced or even eradicated by development projects? Development projects, so it seems, are hybrids of managed, temporally limited units with objectives supposedly based on shared interests. However, a basic question of participation remains: who defines the conditions of participation, and thus the organizational frontiers?

One of the ways to address this issue is a recent increase in project management models that include the participation of 'beneficiaries' in the planning.[48] A subsequent fundamental paradox seems to emerge when the definition of beneficiaries, and the development of their abilities to create and implement plans become explicit objectives of the development intervention: The teleological character of development projects points always back to the defining reasons for their existence. In the development plans, this reason is explicit and formulated into objectives, which display the claim that the project has an axis holding it together, a visualization of its claim to exist.

A complete analysis of projects would therefore have to scrutinize the creation of such artefacts. However, the intention here is to use this perspective as a means of examining inequalities travelling with the created artefacts, which often remain the only accessible manifestation of the process. Instead of trying to deconstruct a process from such artefacts,

the perspective proposed here looks at the realities drawn by such teleological documents, realities that are displayed as possible bases for collective action in projects.

It is the temporal concentration of ideas that counts here, the intellectual process of contraction, of drawing things together, of levelling out uncertainties into a plan, surrounded by its inevitable dispersal into more or less 'messy' practices. The analysis thus deals with a situation of documentation and communication which has only limited stabilized, long-term accessible nodes, all of which refer in some way to plans, be they reports, or brochures, or interviews: The plan is sought in order to be enacted, although, so it seems, everything else except the plan is enacted. The plan promises to describe a clear line between now and then, between here and there, but it is in fact a symbol of unfulfilled prophesies, an ephemeral mandala of intentions: carefully and expensively brought together, beautiful and admired for its clarity of structures, yet easily lost on the wind.

It may be that the fragility of the selected development projects themselves makes the analyzed plans so fragile, in which case their fragility is little more than the result of self-fulfilling prophecy or circular argument. Even more, it seems self-evident to (almost) anybody that no plan will necessarily work out exactly according to its own predictions.

But this 'circular argument' allows two things: First, bringing to light the essential fragility of these plans also highlights which externalities make them fragile. This course leads beyond the self-referential reality presented by the plan and touches on many uncertainties that characterize the social worlds these plans are intended for *and* the social worlds these plans come from. Second, a field as dominated by planning activities as asymmetrical development – somebody develops somebody else – can probably not be understood when manifestations of such activities are kept outside the focal centre of analysis.[49]

In the following, governmental and INGO plans are thus discussed as attempts to organize development, or to support at least the perception that such attempts are made. This leaves open, however, the question of what happens when the organizational framework for the implementation of these plans – in this case projects – still needs to emerge.

1E: Praxeology

Project management has been described as dealing with basically two problems, namely cooperation and coordination (Söderlund 2011: 46). Both are marked by the specific teleological character of projects: "[P]rojects are created, shaped, and designed to die. They differ considerably from convential ideas about organizations as following the principle of 'going concern'." (Söderlund 2011: 54).[50]

In other words, projects emerge from short-term cooperation and depend on the definition of a temporarily shared interest, whose pursuit must both result from *and* simultaneously create the conditions for the coordination of collective action. Several models have been developed to analytically deal with these basic conditions of projects, differing in the stress they place on application or analysis. A common feature of these approaches, however, is to look at projects as emerging organizations (Morris et. al. 2011: 2).

An operational view on projects is, for instance, provided by concepts of so-called Project Cycle Management (PCM). In the guidelines of major European development organizations, projects are depicted as additional, positive input to an ongoing situation. A diagram of the German GTZ, for example, shows a large arrow representing the "self-help process" of the target group, while another arrow, representing a project or programme, enters the picture, supported (or pushed?) by "technical cooperation", and merges with the self-help process in direction of the development goal (GTZ 1996: 2).

EU guidelines noted that the project-based approach has been "at 'the cutting edge of development' for many years, primarily because it has helped meet the accountability requirements of donors" (EU 2004: 9). A critical perspective emerged, however, which questioned issues such as the idea of 'local ownership'; the duplication of management structures by overlapping, but independent projects; the undermining of 'local' structures and skills by an 'external' labour force; and 'fungibility': the government's reduction of financial means supposed to fund the public services the project is providing (EU 2004: 9-10). The avoidance of fragmentation of interventions is here addressed by attempting 'policy change', which points at the change of underlying structures rather then at specific products or material transfer.[51]

This leads me to examine the structural context of such projects. One of the dominant models of objective-oriented planning in development discourses, the Logical Framework Approach (LFA), operates with the category 'assumptions' which refers to those parameters that "describe conditions that must exist if the project is to succeed but which are outside the direct control of the project management" (NORAD 1999: 48). This is a managerial way of 'bringing in the context'. What was intended as a tool used to filter projects that are more

likely to succeed in their implementation environment from those less likely to do so, also serves to indicate the importance of elements that allow a certain kind of social interaction to occur; in other words, ontological presuppositions.

This aspect is pursued here in a direction similar to that taken by Schatzki with the concept of "site ontology" (Schatzki 2002), in which he defines social sites as "the context, or wide expanse of phenomena, in and as part of which humans coexist" (Schatzki 2002: 147). Leaving out here the complex theoretical placement that precedes this definition, it is important to note the reduction of analytical intention to "*nothing but* constellations of inter-related individuals", or the "'hanging together' of human lives" (Schatzki 2002: 147). I take this as admonition to pay attention to the interactions of individuals in social situations without either reducing individuals to situations ('the individuals act in this way, *because they are in this situation*'), nor situations to individuals ('the situation is like this, *because the individuals act in this way*').

In this sense, the perspective 'projects' is informed by discourses about practices[52], here referred to as praxeology, in reference to Bourdieu.[53] The so-called practice turn in social theory (Schatzki et. al. 2001) has as its minimal consensus an understanding of practices as "arrays of activity" (Schatzki 2001a: 2) which cannot be fully analyzed either by social structure or by individual actions, but are "embodied" (Schatzki 2001a: 2), while interconnected practices are "mediated by artifacts, hybrids, and natural objects" (Schatzki 2001a: 2).

In defining practices, let me follow Schatzki, who describes them as "organized nexuses of activity" (Schatzki 2001b: 48). This concept connects also the organization of actions with a person's mental states, which Schatzki broadly defines as "how things stand or are going for that person in his or her involvement in the world" (Schatzki 2001b: 49). In such a way, mental states "inform activity by determining what makes sense to people to do" (Schatzki 2001b: 49).

Following Weick, both individual and shared sense-making is, furthermore, understood here as one of the basic functions and requirements of organization (Weick 1995).[54] Weick describes practices in organizations with the term 'thrownness', "a mixture of unknowability, unpredictability, and enactment" (Weick 2003: 457). Practices take place through patterns of relationships that are "unknowable, since to measure something is to change it", and "unpredictable, since very small differences in initial conditions can lead very quickly to very large difference in the future state of a system" (Weick 2003: 458). Under such conditions, he comes to the conclusion that "sensemaking is all we have" (Weick 2003: 458).

The organizational form 'development project' must deal with these conditions in a heightened way, as it emerges from collaboration under conditions of substantial

heterogeneity and inequality.[55] The conjunctions created and used during such collaboration are depicted in the project's artefacts as sharing a unidirectional trajectory, but in fact have a complex permeability: Assigned organizational borders are transgressed by the boundaries of practices. This demands a flexible in/out-perspective, which is facilitated by the term 'emergence', which describes a process of coming into being in general.[56] This abstraction is intended to avoid the uncritical acceptance of certain assumptions about leading forces, or presuppositions about this coming into being; for instance, the dichotomy of developers and underdeveloped.

In this sense, it is the emergence of development projects as temporary organizations which is to be studied here. Although a development project exists as a bordered entity in the framework of plans, and in terms of references, working contracts etc., its practical implementation consists of offers to collaborate with various disparate and distributed roles, donors, implementers and beneficiaries. A basic task of the emerging organization is to find an interface to work with in this situation of heterogeneity and inequality. The development project is supposed to create such an interface not only for the purposes of communication, but also to facilitate change of or exert influence on behaviour, in direct connection with a change of material flow.

Development projects can thus be regarded as attempts to organize temporary aggregations of social actions and thereby to influence the emergence of new normalities that define how social action is effectively aggregated. They are organizations directed towards the extension of organizing principles, which differ from previous organizing principles, on which, however, they also partly depend.

Since the project has to be based on its existing context, it must possess both innovative and conservative qualities. This means it has to reproduce as much of the existing context as is required to preserve the conditions of its own existence; at the same time, it must also create something new.[57] The view that the context both *shapes* and *is shaped by* the social site – the project – supports the dissolution of an inside-outside dichotomy suggested by projects' self-representation.

The lack of attention to context in many project assessments has been addressed, for instance, under the term 'project ecology', which tries to integrate the context of these 'temporary organizations' and their internal processes (Grabher & Ibert 2011). Regarding the projects of established, long-term organizations, though, a central aspect of development projects is missed here: Even when there is a clear-cut project implementer, the objectives supposedly justifying the projects' existence refer to still non-organized participants – the so-called beneficiaries – whose changed behaviour is at the same time a projected outcome of

the project. The beneficiaries thus have both fundamental importance to and limited impact on the critical assessment of the project.[58]

A similar conceptual problem must be solved in the case of the formulation of objectives.[59] Let me reiterate the description of the temporal and teleological conditions of development projects: By definition, their 'life' is defined by goal-attainment; they live only as long as is required to fulfil an objectified need. They are created as an environment of interaction, as a self-referential system with verifiable outcomes, yet they also exist in order to change the development status of others who are simultaneously both the subjects and objects of the project ('beneficiaries').[60] This implies also that to a great extent those defining the project will not be part of the established structures after completion of the project. The establishment of independence, the institutionalization of solutions, and the substitution of inputs are thus all essential aspects of the attempt to ensure the lasting impact of such projects ('sustainability').

The structural ambiguities outlined above collectively define the problem of the emancipation of the new, whose political implications will be the background to what follows. According to the quoted GTZ document, a normal supply of those resources that cover basic human needs through 'self-help' is presupposed to exist. An intervention would thus have to *improve* the conditions of availability of, for example, food, water, etc., not to provide it completely. The point in this case would be not to eliminate uncertainties in supply, but to manipulate them in a desirable direction. However, a significant source of inequality originates from the different 'starting points' occupied by the various actors, as both facility and opportunity to manipulate supply are distributed differently and unevenly. Even if this is regarded as a purely technical problem, the differences in how the development site is entered by different actors remain as a potential attractor of the development process toward a trajectory of perpetuated inequality.

A development project is thus a fluid organizational formation in which the final recruitment of participants is not the beginning but the end of the process. Potentially, this recruitment never succeeds. The specific characteristic of development projects is that the kind of social formation that is necessary to enable the project to be implemented is at the same time the stated aim of the project; in other words, the aim of the project is to alter the social formation in such a way as to render the project obsolete.

Development projects are thus the simultaneous result of both creative and productive processes. Such cyclical conditions necessitate cyclical implementation. At the same time, the linear structural setup (implementers accountable to donors) inevitably imposes a variation of the principal-agent problem.[61] The coexistence of linear and cyclical elements in

development projects is reflected in the simultaneously linear and cyclical aspects of the structure of this text.

To summarize: The following case studies look at people trying to achieve something they call ‘development’ through the implementation of something they call ‘project’. The proposed perspective is about developing narratives following the translation of going concerns into specific goals, the further translation of those goals into the formulation of plans, and the consequences of these translations for practices. The narrative starts from situations of obvious disparity between expectations and outcomes, and tries to reconstruct how they came about, by asking two simple questions:

What was supposed to be achieved? What actually happened?

The pursuit of these questions brings together different positions on the subjects of who and what are considered a matter of concern, who and what might lead the way to something better, and what actually happened during the courses actually taken. The resulting practices to be observed move between order and disorder, consensus and contention, anticipation and surprise. Facilitating the comprehensibility of some of these dynamics is the purpose of the following text.

2 Food

They make sure we know the machines exist. From then onwards working without one is harder. Not having the machine makes the father look old-fashioned to the son, makes the husband look mean to his wife, makes one neighbour look poor to the next. After he has lived a while with not having the machines, they offer him a loan to buy a tractor. […] When he has bought the tractor, they say: Now to use the tractor fully you need the machines to go with it, we can lend you the money to buy the machines, and you can pay us back month by month. Without these machines, you are not making proper use of your tractor! And so he buys a machine, and then another, and he falls deeper and deeper into debt. Eventually he is forced to sell out.

John Berger, *Pig Earth*
(Berger 1979/1992: 73-74)

2A: Fields

On January 30th, 2010, I was led through agricultural fields around Heiban by *ḥabōba*'s husband's sister's son ᶜIsa, a small-scale subsistence farmer who lived next door to her. We set off in a north-easterly direction. We came across some barely perceptible ruins, which he identified as the former Fellata settlement, established in the 1960s but abandoned during the war. He himself came around this time to Heiban from the nearby village of Abol, but in 1966 went to Madani and in 1968 to Khartoum, where he lived in Baḥri Ḫatmiyya, near the market, where his son Waḥīd now lived, 40 years later. For one year he worked there as a house servant, then in 1969 he entered the army. In 1975 he came back and settled in Heiban. At the beginning of the war in the region, he went with the family to Kadugli, established a house in the quarter Tillo and stayed there for 12 years. In 2002, he came back to Heiban and settled at his current home. He maintained a deep mistrust of SPLM, comparing the slow development in their areas with what he perceived as NCP's achievements in booming Khartoum. What other life could be preferred?

Nowadays he feels detached from the details of the problems in his birth village; although he was interested, as he said, to help 'in kind and in mind', '*madiyyan wa ᶜaqliyyan'*. But the many little issues of village life were issues of the village's representatives; his immediate interest concerned the details of his own subsistence farming.

While we walked through the fields, where only the long, reddish-brown sorghum stalks remained after December's harvest, ᶜIsa showed me his small plots, most of them fenced. Fields here were often regular and even, in contrast to those in the mountainous areas, where the landscape necessitates finding space between the irregular rock formations. The fields are smaller there, and circular, descending through terraces and surrounded by stones, or sometimes covering a slope down to a dry river bed, a *ḫōr*. Still other forms appeared with the arrival of mechanized farming, which needed large areas cleared of trees, bushes, and other vegetation: it occupied land in a different, more imposing and exclusive way.

When we crossed his motherbrother daughter's plot, we saw that she had only managed to cultivate a third of the area during that year. Divided from her crops by a small clear corridor, an Atoro from a nearby village had cultivated on the rest of the plot. ᶜIsa's opinion about that was ambiguous: If land is not used, why prevent others? At the same time, industrious cultivators from other places had taken over most of the land, and extensive mechanized farming encroached into Heiban's lands, too.

This also brought new forms of agricultural labour. When he reflected about how the differences in agricultural labour in former times and the present, he mentioned how work ethics had changed. When sorghum beer, *marīsa*, is served, the communal labour parties,

nafīr, become more like drinking and chatting parties; in former times, the work was finished fast, in spite – some say because – of the beer. Now paid workers became much more convenient. But the people from Heiban and Abol have always been lazy, he said, and still don't do such work, living in the towns more like the *ǧallāba*, the Nile Valley traders.

His thoughts were expressed jokingly, but they reminded me of other conversations that related how manual agricultural skills had diminished. In Abol, a group of older men just returning from a longer period of living in Khartoum agreed that all the people had become lazy, *kaslānīn*, today, both those who had migrated to towns and those who had lived during the war from very small plots and forest fruits in the mountains.[62] They were unable to do work as they had in the old times, when one person could cultivate a whole hill slope alone. Furthermore, *nafīr* had then been more frequent. Now it was rather unpopular, because people would come, eat a lot, and work little, while paid labourers work immediately, efficiently and, for the most part, with more experience.[63]

In the words of others, the question of physical skills became a question of identification: When I went on foot from Heiban to Abol, I was asked on the way where my car was, and on answering that I could go the short distance to Abol by foot, I was congratulated on having become 'Nuba'. In Abol, an old man with a dynamo radio told me that he has neither time to listen to the educational programmes broadcasted from Kauda nor do 'Nuba' do things like this.[64] In Kubang, a woman I had wanted to speak to, but who had no time for me, claimed that 'Nuba' work from dawn to dusk, because the heat causes one to fall asleep once one sits down.

What shone through in these comments about physically hard work being associated with 'being Nuba'? Was it really such a definite indicator of social identity, what kind of work was done, and how it was done? And conversely, how did social identity influence who could be brought to do a particular kind of work in a particularly organized way?

2B: Organization of space

The spatial dimension of agriculture varies basically in the size and shape of cultivated land and the structure of cultivated crops, while the technologies used determine how this spatial dimension is managed. In this sense, manual, small-scale shifting cultivation scattered between other vegetation and with multiple mixed crops differs to a large extent from mechanized, large-scale monoculture cultivation in rectangular fields cleared of any other vegetation that might otherwise compete for nutrients. The main tool used in the former case is the hoe, together with knives and sickles; in the latter, it is the tractor, together with disker and harvester. One is connected with intensive subsistence cultivation with a high ratio of labour-time investment to output, the other to extensive commercial cultivation with a comparatively low ratio of labour-time investment to output.

In case studies, it soon becomes necessary to regard the variables of this differentiation as more or less flexible elements of singular combinations. A crucial aspect is, for instance, the kind of social relations associated with different forms of production, and the specific availability of and preference for one or the other in various settings. A basic example is the recruitment of labour force, which can take place through reciprocal social ties, by payment, or by use or threat of physical violence.[65]

In this perspective, the observed landscape of agricultural production in and around Heiban showed various cases displaying a complex mixture of these variables. Two examples of agriculture and three examples of horticulture will be analyzed here, with specific regard to their spatial organization, in order to depict this organizational plurality. Epistemological technologies used by the farmers themselves to conceptualize their way of doing things will be juxtaposed against two-dimensional visualizations based on GPS measurements.

Example 1

The first example is that of a subsistence farmer, who distinguished five plots as his property, which he owns by usage, rather than through registration.[66] According to him, people know approximately how much land they have, and each year cultivate a changing proportion of it. The most common unit is *ḥabl*, literally ‘rope’, which is both a linear and a square measure. In his view, a *ḥabl* is 25 or 25 x 25 paces, where a pace is supposed to equal about a metre.[67] It is thus a semi-standardized unit, since the method of measurement is agreed upon, but the measurement unit itself is subject to slight, negotiable differences. Another measurement unit occasionally used is *feddān*, which is about 70 x 60 m, or 4200 m² (4.2 ha), more generally used throughout northern Sudan, and therefore taken as comparative unit in this assessment.

The first of this particular farmer's plots is around his household's living space, about 86 x 81 m (6966 m² = 1.66 fd, plot I); the living space occupies about 25 x 25 m.[68] The inner space is for his wife, three daughters, two younger sons and two children of a daughter; outside there is the sorghum storage and the toilet, which is also used by the neighbours. The household has been placed next to the farmer's motherbrother, who had moved there from the nearby village of Abol. The space around the courtyard is used to grow some sesame and sorghum, and four mango trees, as well as grass as pasture for the goats.

The nearest orchard is about 500 m from the house. It is divided into two plots by a fence with a gate. One plot consists of an irregular area of about 7053.75 m² (= 1.68 fd, plot II), part of which is encroached upon by a riverbed; sorghum is cultivated on about a quarter of the area, while the rest is unused apart from some stored wood. Next to it there is a vegetable garden (3900 m² = 0.93 fd, plot III), with tomatoes, chilli, okra, portulaca, and groundnuts. Figure 2B.01 shows the shape of the plot and the predetermined frame: a road on the one side and a riverbed on the other, whose irregular shape is the result of its manipulation through trenches that sometimes changed and sometimes obeyed the natural watercourse.

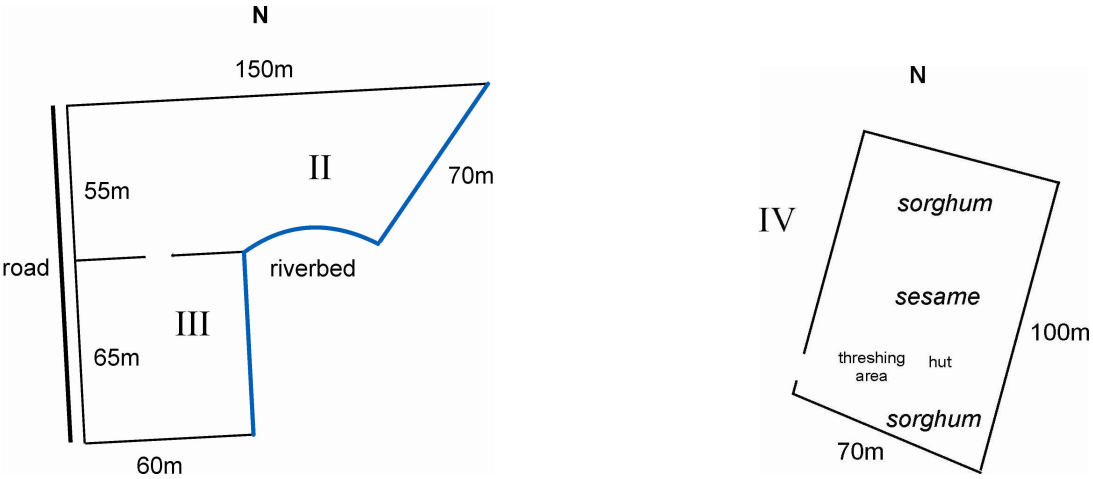


Figure 2B.01: Food producer in Heiban, example 1, plots II, III, and IV (Source: own fieldwork).

The fourth area is about 3.5 km from the house[69] and forms almost a rectangular area, half of which was cultivated with long and short red sorghum (*karmakka*),[70] a quarter with sesame, and smaller area with a mixture of heavy short *karmakka* and *muqud*, with some space left for threshing and a hut. This is his main plot for staple crops, and he estimated it to be around 1.5 to 2 fd. Based on GPS measurements, the area was about 7000 m², which corresponds to 1.66 fd (plot IV).

A fifth property was located near to the mountain of Ebaŋ, where a Theological College had established a large orchard financed by the American organization Samaritan's Purse (see below). This farmer had not used it for decades, and now regards the time to demand compensation to be over.

The main context for the establishment of plots like these is a complex landscape of used and claimed pieces of the overall land area. It is this landscape, which is linked with contested and differing sets of knowledge, which has become more complex and uncertain as the population has become more complex and uncertain.[71] Part of the scramble for land to be used is linked with the assessment of soil quality. The farmer exemplified here distinguished only two soil types for Heiban, namely *nīliyya* (Nile-like), a black clayey soil that he also called *ġurīn* (silt); and *qūz*, which is sandier.[72]

On these soils, he had established a cultivation system mixing routine with experimentation.[73] While the northern sorghum and sesame part of plot IV, for instance, was planted only with known varieties, the southern mixture, with the addition of a white variety of sorghum (*muqud*) was an experiment prompted by the big success of a soldier from a different region who had been deployed in the Joint Integrated Units near Heiban, and who had cultivated the white sorghum variety *wadd Aḥmad*, which grew rich and tight. The farmer's own experiment resulted in a small yield, though, and was thus not repeated.

The relation of temporal and spatial organization to risk thus exhibits a complex interrelation between concentration and fragmentation: One annual cycle of cultivation allows only one trial of crop organization, which concentrates the risk of a low harvest. The area of experimentation was therefore limited to a small portion of the available space, while this space as a whole was divided into many parts with only roughly estimated size, allowing thus only estimated relative yields and thereby only limited comparability of productivity.

This diversification of risk is also shown in considerations of how to organize additional labour force: here the focus is on the relation between spatial organization and labour recruitment. In the year before the assessment, the farmer had let a group of 4 paid workers clear his major acreage (plot IV) for 250 SDG as an accord payment (*muqābil*). The workers had refused payment per *ḥabl* (25 SDG per 625 m²), which would have resulted in an overall amount of 7000 m² / 625 m² = 280 SDG. A third form of payment is daily wages (*yawmiyyāt*). Among the possible units of paid performance – completed work, spatially measured amount of the work, temporally measured amount of work – the last would be the farmer's preferred option, since day-to-day control is possible, providing both an undisputable measure and a means of compartmentalization. Because the number of available free labourers is high, the threat of being substituted is a realistic one.

But there is pressure on both sides, since though there is a large number of workers in the labour market, only a small proportion are considered good workers.[74] There is competition for the latter, who can thus afford to change jobs day-by-day to seek better pay. In this particular farmer's view, however, it is predominantly the clients' behaviour towards their contractors that decides issues of loyalty. When workers receive friendliness and additional

benefits, such as tobacco or good food – for instance, bread instead of *kisra*[75] – they will be more inclined to be committed and available the next year.

He did not rely completely on paid labour. The tasks of harvesting and threshing, in contrast to that of clearing the land, were accomplished by communal labour (*nafir*)[76] with his motherbrother's daughter, the motherbrother daughter's son, and a non-related neighbour with friends in the armed forces. In his opinion, though, communal labour no longer works well, because society has changed. This is reflected in the low response to invitations to engage in such work and thus to the rules and ties of reciprocity they entailed,[77] but also in low work performance, now compromised by beer consumption, which was considered to have been rather an energizing element in the past.[78]

His valuation of paid vs. communal labour relates in its quantitative measurement, among others, a temporal variable such as 'a day's labour' to a spatial variable such as 'x *ḥabl* finished'. In this sense, the workers resisted the fragmented, day-to-day assessment and payment of their work, and preferred a concentration of control through a working contract, possibly in order to maintain control over the specific spatial and temporal organization of their labour, maybe even to allow them to shift to working on another contract in between for an additional income.

Similarly the farmer's own income structure was highly fragmented and showed a high degree of diversification. To give a few examples: Apart from his own agricultural and horticultural production, he also worked for a migrant from the region, who had a stable income as accountant in the University of Juba in Khartoum. The farmer took care of the migrant's orchard, initiated clearing, fencing, etc., for which he received a small additional income of 50 SDG per month. Furthermore, occasional remittances came from relatives living in urban settings, for instance, from one of his sons and one of his motherbrother's sons. After the groundnut harvest, he and his family peeled and sold the groundnuts in little bags for 0.5 SDG to tea sellers in the market, getting 5-6 times more than the price of unpeeled groundnuts. While the farmer's elder daughter was teacher in a nearby primary school, his younger daughter sold tomatoes in the market, some of which they cultivated themselves, and some of which they bought from a larger horticultural project nearby (see example 3 below). The same principle was followed here: Tomatoes bought as a whole box were divided into small heaps of three or four pieces and sold at a relatively higher price.

This profit by splitting corresponded to purchase in small quantities: Instead of buying larger amounts of vegetables, fruits, sugar, soap, etc., everyday walks to the market were taken to purchase goods for the day's consumption. Not only could perishable goods simply not be stored without access to cooling devices or even the electricity required to run them,[79] but the storage of goods like sugar and salt were also under constant threat from competing

consumers such as rats, insects, etc. Furthermore, the accumulated cash was saved for special occasions and celebrations, when such relatively large purchases were necessary.
Finally, this farmer had also nominally entered a cooperative, which was supposed to provide access to larger fields and mechanized farming. But since no clear signals of success had come from the cooperative's activities, he neither actively participated nor made this rather large investment a priority. The small experiments with more or less known varieties on his fields were not comparable to the perceived risks involved in larger investments: The first were embedded in many little fragments of income, whereas the latter would concentrate a lot of unpredictability into a single place.

Example 2

In the first example, vegetables and fruits had the status of an additional benefit, especially during the rainy season, when both grow naturally without requiring further care or effort.[80] During the dry season, when sorghum is still abundant from the harvest, vegetables and fruits are difficult to get and traders come in to cover the demand, more or less.[81] While small-scale rain-fed orchards have had a long existence in the region, irrigated schemes are a newer arrival, which were especially hampered during the war.[82]
In the years before 2010, some experimental attempts appeared to establish irrigated horticultural production.[83] One example is a small orchard, built by a Fur from Al-Jinayna experienced in horticulture on behalf of, and on land owned by, a SPLA soldier from Heiban.[84] The latter had bought an electric pump and a generator, and the horticulturalist prepared a manually dug well. In the first year he only burned bricks,[85] then he fenced about 0.5 fd for irrigation, about 2/3 had been prepared or was in use at the beginning of 2010. The further extension of the garden was limited by the small initial investment, which opted for a relatively shallow well that provided insufficient water. The engine was rather small, too, so the constant water flow could only cover the area it did.
Figure 2B.02 shows elements framing the cultivated land similar to plot II in example 1: The road runs parallel to the northern boundary of the plot; plots owned by others define an irregular form. The development of the plot is from north to south, as can be seen by the parts used formally for sorghum, maize, and water melon. The brick-works had also used some of the former cultivation land, which the farmer had since tried to reclaim for sweet potatoes. The southern extension, both east and west of the irrigated part, also shows signs of the gradual claiming of 'wild' land for rain-fed cultivation, with the constant 'danger' of nature reclaiming it again.[86]

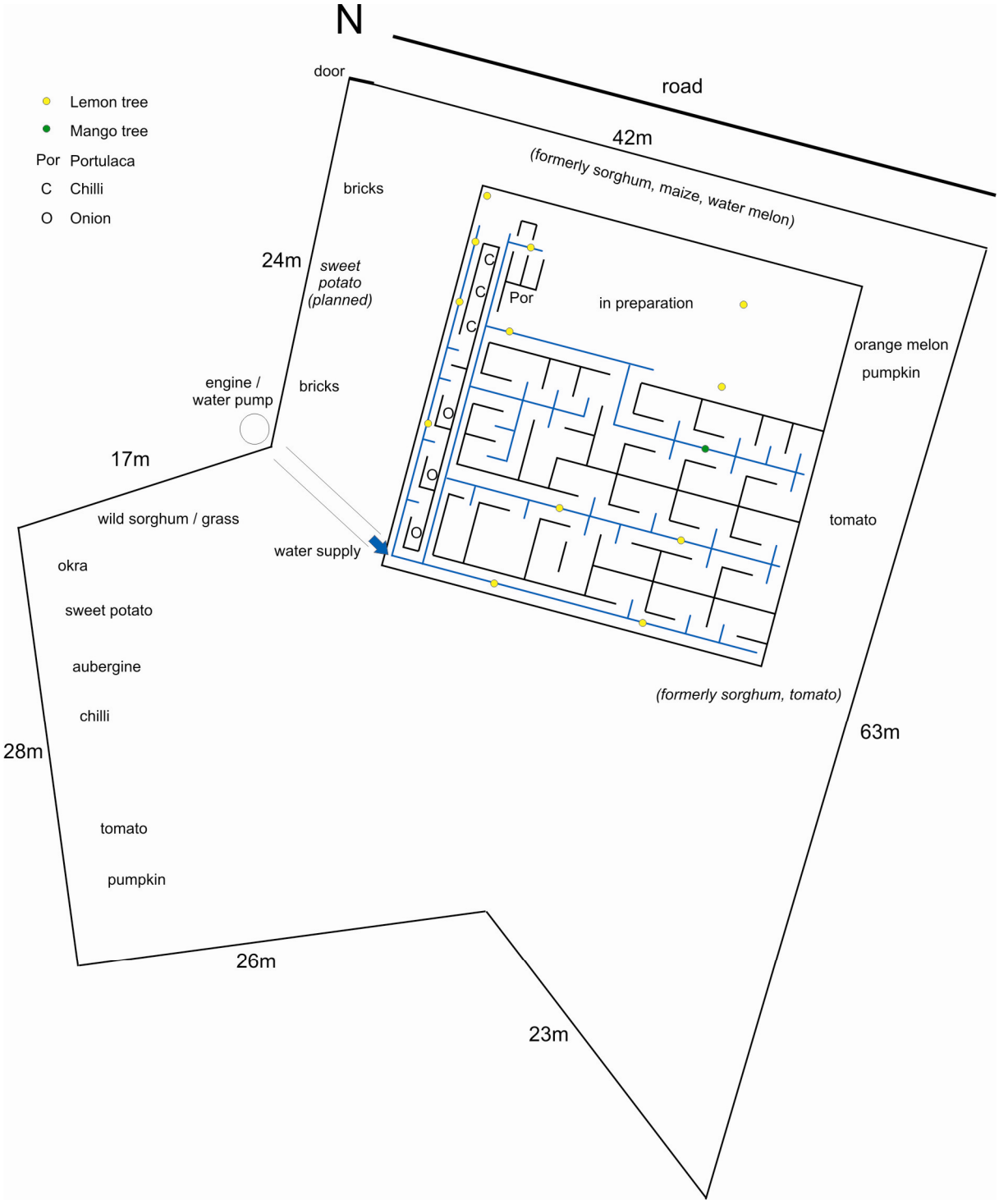


Figure 2B.02: Food producer in Heiban, example 2, showing in blue lines the approximate extent of controlled water flow (Source: own fieldwork).

The largest transformation, however, had occurred in a regular space of about 25 m x 25 m, which was supposed to be an expanding experiment. The water inflow at the south-western end was the starting point, with a preliminary channel running from west to east; the water fell first on *delēb* palm leaves framed by bricks. The channels and fields were created here by excavating the ground and leaving ‘walls’; at the edges of the fields maize and okra was

planted until preparation of proper fields is finished. The successive stages of development by an ordering force can be seen in the larger system of channels: While the western part shows many different, fragmented patterns, toward the eastern areas the patterns becomes more and more regular, appearing like big ‘C’s and ‘E’s. The narrow set of fields running from south to north consists only of regular patterns; the first crops, onions and chilli, were produced here.

It is notable that even the more regular patterns have an element of irregularity, which is caused by the unevenness of the ground: By trial-and-error the horticulturalist found where best to open and close the channels to the individual fields, i.e. at the beginning, the middle, or the end of the channels, according to where the ground is deeper and thereby allows water to flow in the intended direction with the minimum of intervention.

A defining element of this work is the relation between an unskilled land owner and a skilled horticulturalist, the latter of whom works on commission. The specific terms of this commission are not formalized by a contract and remained unclear, as the horticulturalist had paid for all petrol, oil, food, and seedlings up to now, but hoped only unilaterally that this will give him the right to 2/3 of the profits once production starts.

The experiences and questions connected with this arrangement are a regular topic in ‘break talk’ between several horticulturalists in this position, most of them coming from other areas. In one such conversation, a Tagoi from Al-Feid, for instance, described his own cultivation of fruits and vegetables on the land of an owner who lived in the national capital but had an agent in Heiban. This horticulturalist operated an electrical pump with pipelines to distribute the water, and a pesticide spraying device.[87] He complained about the lack of greater investment by the owner and speculated about the latter’s motivation – does he want to trade, or only do experiments (*muğarrib*, literally ‘tester’)?

The possibility of developing these small experiments into marketable size was discussed, however, under the impression that the local market had no consumer basis for huge amounts of vegetables and fruits, more due to lack of demand than lack of purchasing power. Expensive transport would therefore be needed to reach larger consumer groups in northern towns, especially during the difficult road situation of the rainy season, when vegetables and fruits would be abundant everywhere, given the fertile soil of the region. Currently, according to the horticulturalists’ review of the situation, the demand for what could be sold was already covered by commodities coming from Abu Jibayha and Karshola during the heat of March and April, when only irrigation makes the crops grow.[88]

However we choose to value these statements, they highlight the role of intended outcomes in deciding the means invested in spatial extension, beyond the relation of the size of irrigation systems to the skills necessary to manage them. This investment concerns not only

the actual workforce needed to manipulate the ground in such a way as to allow controlled water flow. The water flow itself must also be secured through the combined investment in and use of an engine, an electrical water pump, and a well allowing access to sufficient underground water resources.

Example 3

This kind of investment is treated in the next example.[89] The situation follows basically the same arrangement as in the previous case: the land belongs to a renowned trader from Heiban, who left it at his four sons' disposal, as a kind of early inheritance, in order to enable them to work with it. One of the sons set up a brick-works, which he had since developed into one of the largest businesses in Heiban and also one of the main employers for daily wage labour.[90]

According to his own account, he had bought an engine, a generator and a pump;[91] together with the costs for a borehole and a pipeline to the groundwater he invested a total of 7000 SDG, which he got on loan from a bank.[92] He lived for some time from his income as bricklayer – a profession he continued now as foreman of his own group. His choice of brick production was based on the observation that the price of bricks brought from Khor Delēb and Al-Feid was 185 SDG / 1000 pieces, which he hoped to undercut. He had produced about 150,000 pieces in the first year and paid off his debts with the profit.[93]

The bricks are produced by mixing cow manure and very wet soil in standardized forms, and burning them in towers of 20,000 pieces after they have dried for some time in the sun.[94] The elements influencing production costs are thus petrol, cow manure, timber, and payment of labourers. The first, petrol, is needed to operate an engine pumping underground water up, in order to keep the soil continuously wet enough.[95] The second, cow manure (*zibāla*), is brought from places with large-scale, stationary cattle farming, where the manure is kicked smooth and kept moist by the packed animals. It was used both together with the soil to form the bricks, and as a 'cloak' around the tower to concentrate the heat more during the burning.[96] The third element, timber, is the fuel used to fire the bricks; it is transported by workers from nearby forests. This takes advantage of the formerly absent and currently ineffective forest administration, which is supposed to take fees for the felling of trees. In the case that this situation changes, he will try to compensate by using gas burners. The price of labourers, finally, fluctuates with the price of sorghum.[97] In conclusion, if any of these elements caused a profit lower than his expectations, (c. 17,000 SDG at that time), he would look for other areas in which to invest, for instance in new land property.[98]

The brick production has left his portion of his father's land with a hole several metres deep, which makes any future cultivation impossible. Next to it, however, one of his brothers

initiated a horticultural project, whose water flow is provided by pumping using the brickworks' engine. This arrangement is an extension of another agreement between the brothers, in which the younger also uses the elder's Komer lorry for his transport business, thereby extending their father's logic of providing family resources as stimulation for finding away to financial independence. A horticulturalist from Kass, between Nyala and Al-Jinayna, has been commissioned to design and run the orchard, and a larger investment in fencing was made. The horticulturalist lives permanently near the garden with his son, and although the exact nature of the agreement was not revealed, in his view the income from production had started to pay off.[99]

2009 / 2010 was the first season of this project. Figure 2B.03 shows the irrigation system in February 2010, when the third experiment with channel organization was nearing completion. The overall area was estimated to be 1 fd, which comes very close to the result of a GPS-based measurement.

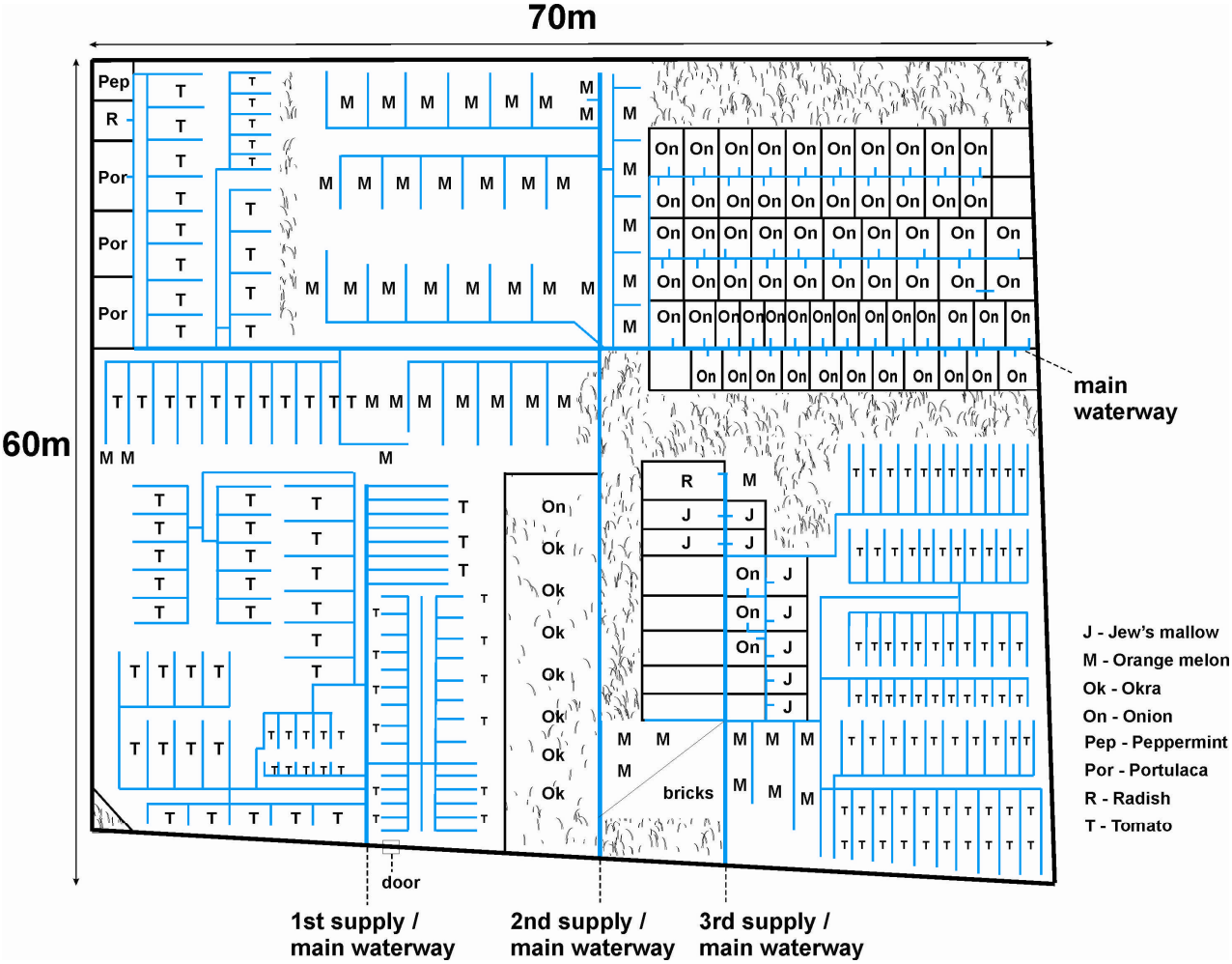


Figure 2B.03: Food producer in Heiban, example 3, showing in blue lines the approximate extent of controlled water flow (Source: own fieldwork).

The history of this season's attempts can be read from left to right, starting with the first supply point near the gate. What is most evident is the 'rake' pattern of tomato cultivation, in which the plants are grown on small elevated ridges kept moist by water in the channels between them. The specific patterns are erratic and manifold: according to their designer, evidence of an earlier experimental stage (*tağriba*). The second attempt, starting at the second supply point, targeted the complete length and width of the fenced area. The left wing shows a similar overlapping of irregular spaces between the channels, as also does the right wing, with area fields for onions, which have the same size only in the upper pairs around the channels. Finally, the third part, which the designer regards as a success to be replicated in all other parts, shows the arrangement of tomatoes in multiple copies of the same channel structure, with parallel arrangement of the area fields for radish, Jew's mallow and onions.

The 'development' supposed to take place here, from the viewpoint of the designer, is that of developing regularity of spatial organization. This not only increases the structural clarity of a model for future extension, it also makes it possible to follow a routine when opening and closing the channels for irrigation. This task occupies much of the day, and spatial complexity limits both the speed at which it can be performed and the ease with which it can be delegated to others: Only the designer of the complex structure can direct its adjustment, as it necessitates an approach informed by understanding. The mechanical character of work in simple structures, however, allows delegation with a single operational model describing unchanging procedures.

Example 4

An even greater distance between land owner, designer, and operator is given in the fourth example.[100] One of the major construction projects in Heiban was the Theological College, which was funded mainly by the American organization Samaritan's Purse. One of the side projects was an orchard about 1.5 km northeast the College, for which permission was acquired from Heiban's Native Administration. The focus of the project was fruit trees, although the possibility of vegetable production was explored, too; the main idea was to plant an area Samaritan's Purse could afford to finance (22 fd, 1000 trees) to produce fruits and vegetables for local and other markets.[101] The intended administrator was the College, and securing this institution's financial independence was one of the objectives of the project.

The preparations started in August 2009, with the first trees planted in October. A wire mesh fence, a gate, and a wall were built, the last with granite from the nearby Ebaŋ mountain, involving significant costs of transport and cement.[102] The preliminary space for the first years was set at 9 fd (180 m x 210 m), the aim being to plant 350 trees in this period. In fact,

15 lines, a total of 303 trees, were planted, with regular space between trees of the same species, which varied according to the expected spatial needs of each species:

Line	Species English, Origin (Arabic, botanical)	Spacing	Number
1	Mango (*manga baladī*, Mangifera indica)	14 m	12
2-4	Mango (*manga baladī*, Mangifera indica)	14 m	39 (3x13)
5-7	Mango Tommy Atkins, South Africa (Mangifera indica)	10 m	54 (3x18)
8-9	Guava (*ǧawāfa baladī*, Psidium guajava)	7 m	44 (2x22)
10-11	Lemon (*limūn baladī*, Citrus x limon)	7 m	50 (2x25)
12-13	Custard apple (*qišṭa baladī*, Annona senegalensis Per.)	6 m	54 (2x27)
14	Grapefruit, Khartoum (*grēba*, Citrus x paradisi)	7 m	25
15	Orange, Khartoum (*burtuqālī*, Citrus x sinensis)	7 m	25
Total			303

Table 2B.01: Food producer in Heiban, example 4, showing lines of fruit trees, spacing, and number (Source: own fieldwork).

Furthermore 1.5 fd were planted with vegetables and other crops (hibiscus, onion, tomato, radish, portulaca, pineapple) as experiment. By the end of January 2010 the structure shown in figure 2B.04 was implemented.

At this point, the trees were watered by hand from barrels twice a week, with 48 litres used per tree. This work was done by 10 workers, who filled plastic containers with the water and poured it manually. The plan for future irrigation was to build a water tower to supply water through pipelines to 5 water stations; further pipes would then direct the water to the trees. This was meant to be finished in October 2010, two years after the start of the project; in autumn 2011, the first harvest was expected.

The fundamental difference between this and the former examples is the element of anticipatory planning before implementation: The spatial organization was arrived at by calculation, and the spatial extent of the plot was defined by pre-calculated financial means, rather than by reference to neighbouring plots or a more ‘feeling based’ perception of what size could be handled.

The architect of this orchard was a recent graduate of agriculture from the University of Madani, who had originated in the region. He was also employed by the International Fund for Agricultural Development’s (IFAD) office in Heiban and was approached by Samaritan’s Purse’s administration on the basis of this background. His employment in the orchard includes a 13 year contract as supervisor (*mušrif*), connecting his capacity as spatial organizer with a long-term temporal perspective.

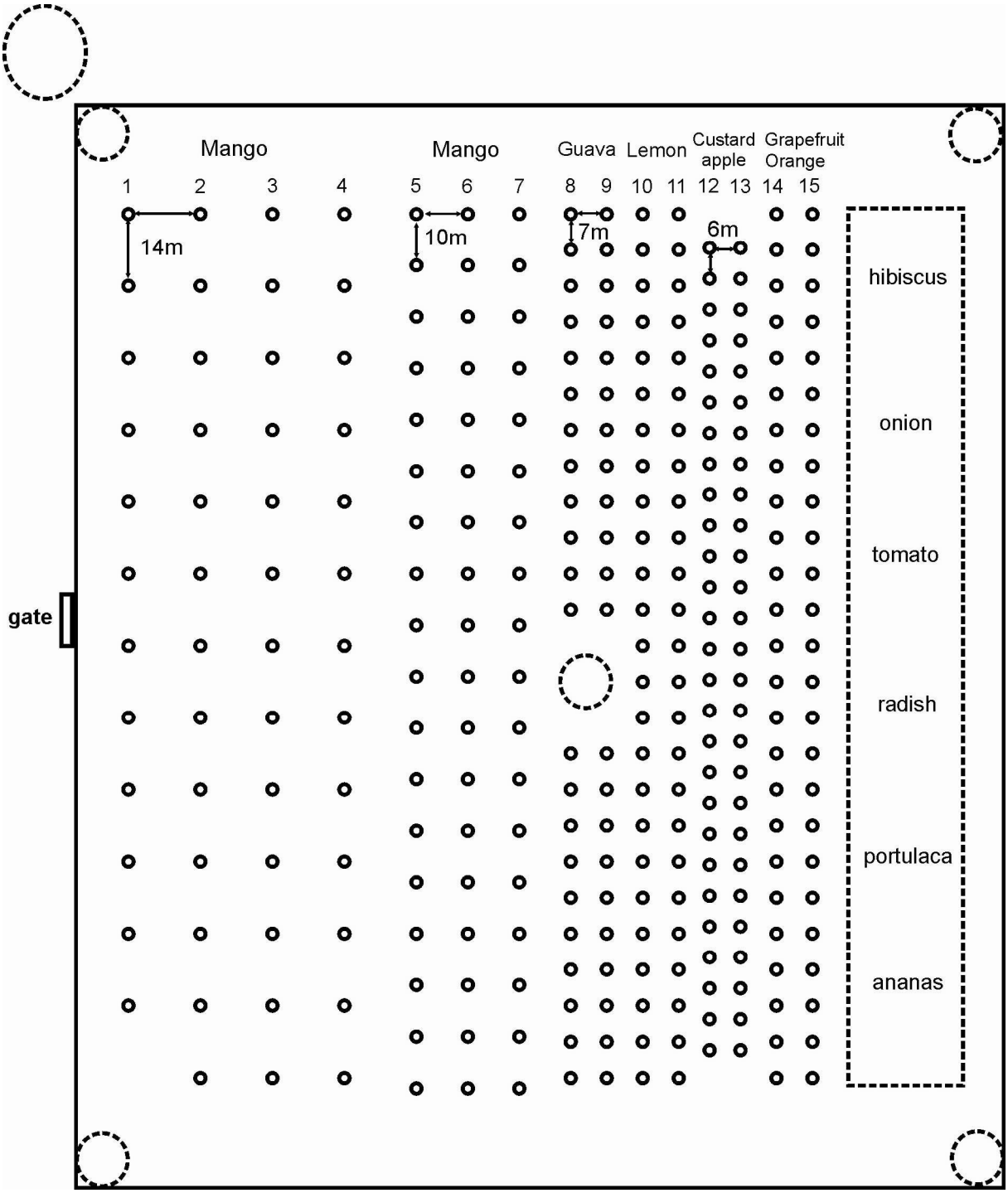


Figure 2B.04: Food producer in Heiban, example 4, showing, in broken lines, experimental and planned elements (vegetable garden, water tower, water stations; source: own fieldwork).

The latter aspect distinguished his position from that of the doorkeeper and the workers, who were employed on a short-term contract and daily wage basis, and who he regarded as replaceable, in contrast with himself. Furthermore, the planned change to pipelines would reduce the need for workers to one or two, while the duties for monitoring and maintenance would grow. Only a short walk through the rows showed some broken seedlings and trees lost to termites, and the value of the losses represented by such damage would certainly be

multiplied with an increasing number of trees. The spatial simplicity of the orchard thus not only had the function of allowing a large-scale operation based on clear structural principles, but the visual control of the area was also made easier.

The realized design was not, however, the result of a two-dimensional anticipation on paper, but only of the imposition of certain spatial principles that related specific species of trees with a specific distance that single trees of that species should have from others. In consequence, the designer could not tell beforehand the exact number of planted trees; his information allowed only the calculation of the approximate number of trees in a given area using the overall dimensions of the area and the standardized distances. Similarly, the monitoring of the actual situation of the trees was not connected to a data management system that could relate the expectedly high number of monitored events to a system of response that was capable of functioning independent of one specific user.

This combination strongly personalizes the interactions between the horticulturally organized space and its long-term observer. It thus depends strongly on a continuity of personnel, in order to avert decay in the early stages and therefore allow longer-term development.

Example 5

Knowledge of potential investment is not necessarily what limits actual investment, however. For instance, the farmer in example 1 perceived a ring of significant agricultural fields around Heiban, starting in the northwest in the direction of Abol, then going in the direction of al-Azraq, including Nyakamma and Serrēf, touching Kalogi and Abu Jibayha in the east, bordering al-Kuk and Talodi in the south, and ending in the west with Indarāfi (see Figure 2B.05).

In spite of this knowledge of potential land for large-scale cultivation, two variables limited investment before spatial organization even became an issue: the access to property, or at least usufruct rights on land, and the financial means to transform this land one way or another. Similarly, the farmer in example 1 had once used a part of the land occupied now by the Samaritan's Purse project, but either those in a position to give the land away did not recognize his usufruct rights or they were not aware of this claim.[103] In any case, the claim did not lead to recognition as legitimate owner.

The same farmer also consulted the land owners in example 3 inquiring of the orchard owner in Heiban as to what kind of electrical pump and well to install on his land. The market producers discouraged him from adopting a small-scale approach and digging a well by hand, as in example 2, but rather advised him to invest more in the beginning to keep options for later extension open.

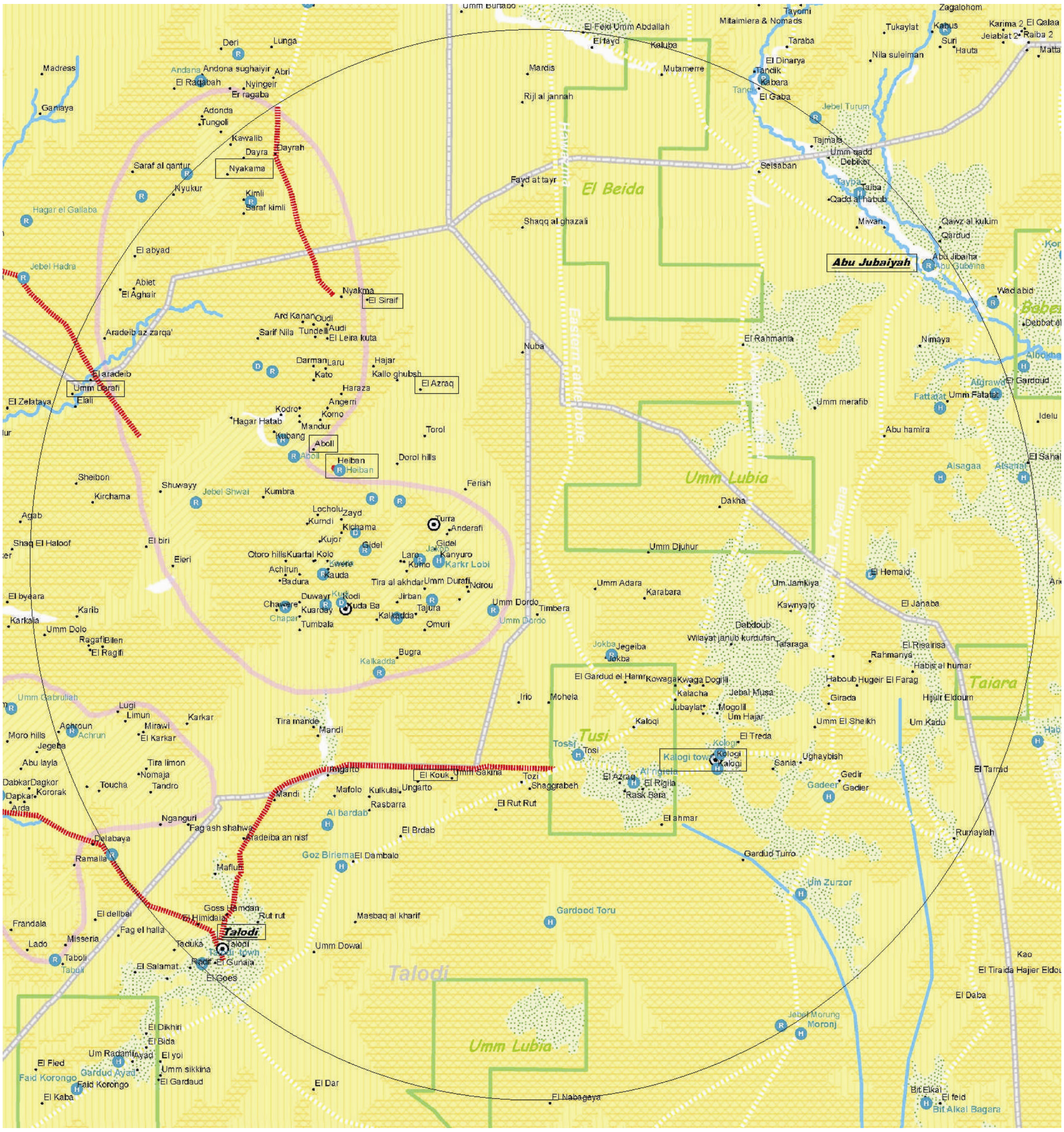


Figure 2B.05: Farmer 1's mental map of main agricultural land around Heiban translated into a circle on a reduced map of UNDP's Threat and Risk Mapping and Analysis (Southern Kordofan and Abyei, Transhumance and land use, 17 October 2007; the white areas with green dots depict agricultural land according to TRMA, the green-framed, rectangular areas large-scale mechanized farming).

Both elements, the 'occupation' of land by general claim or by production, and the option of extension established by the structural setup of an initial investment, are central to the producer in example 5.[104] He is a trader who owns a mechanized farm northeast of Al-Azraq. He was born to Leira parents and had already worked in the shop of a relative in Ḥājir Bago as a boy; later he joined the Sudan Armed Forces in Khartoum. After the military coup in 1989, the new regime introduced food rations for the population and special distribution for the army through the so-called Military Cooperative Organization (*al-mu'assassa al-*

taᶜwūniyya al-ᶜaskariyya). Each month it distributed additional rations of sugar, one sack for four persons, which meant about 7.3 *malwa* per person. A few soldiers, himself among them, had the idea of buying additional rations from other soldiers, for instance 25 sacks from 100 people, and sold them to civilians at up to 350% of the price they had originally paid. This worked for some time and gave him enough capital to open a shop in Umbadda Karor in Omdurman. The system began to be corrupted, though, by cheats selling their rations twice to different traders, and came to an end.

After some years, the trader left the army and took his accumulated capital to Heiban in the mid-1990s, while the war was raging. He became one of the few traders operating in the area and enjoyed an oligopolist position, which was challenged by competitors only after the war had ended. He was also the chairman of the Trade Chamber (*al-ġurfa al-tiğāriyya*) in Heiban until its dissolution, and remained one of the dominant traders in the local market.

In 2010, he had two shops, a restaurant, a bread stove (*furun*), an agricultural project that had been running for four years, and a new horticultural project. A portion of the stored goods was furthermore used for private consumption and to supply other branches of the business, for instance, bread production helped to feed the workers in his agricultural project.[105] The business formed thus a circle: The agricultural production of sorghum was the basis for bread production, whose results were sold in the restaurant and the market, but also formed, together with the shop, the basis of the meals for the workers on the fields. The extension of this circle was limited, however, not by financial ability, but by a 'demography of trust': He begun to make preparations to leave his oldest business, the shop, after he had started to pass on his skills to his son, who worked as his assistant.[106] But since his son already worked in a second shop, selling the products of his horticultural project, he now lacked persons he felt he could trust to work in the first shop, a category he connects closely to family relations.[107]

He therefore increased his focus on agri- and horticulture. In his definition, there are three categories of agricultural spaces: More than 200 ha (500 fd) constitute a 'project' (*mašrūᶜ*); between 200 ha and 21 ha (8.4 fd) are considered 'agricultural fields' (*zirāᶜa*), and less than that are viewed simply as 'pieces of land' (*bilād*), this last category with connotations of 'traditional' small-scale cultivation. His intention was to create a 'project'.

To get access to enough land, he approached the Leira Native Administration in Al-Azraq and communicated his need.[108] His rationale was to occupy land in two different ways. On the one hand, in his view, the first-users' claim to specific land areas will limit where others can extend to. Furthermore, the ownership of the land around Al-Azraq is contested;[109] the Native Administration of both Heiban and of Leira claim primary ownership. His approaching the Leira was thus also a political statement. On the other hand, the establishment of a new,

land-planning based administration had yet to be prepared, under which productive usage of previously unplanned land would, so he hoped, allow users to register the same land as their own property (*milkiyya*).[110]

Both principles – usufruct rights on communal land and use as basis for formal registration – prompted him to concentrate his investment in spatial extension. This concentration led also to avoidance of work-intensive sectors such as gum Arabic cultivation, which would diversify too much of his capital.

The starting point was the frame defined by the Native Administration in Al-Azraq, which set two points on the main road between other plots as limits to east-west expansion (see figure 2B.06). North-south expansion, then, would only be limited by other producers.

The prospected area had been unused for decades and was full of bushes and trees; the first step was therefore extensive clearing. The labour force was recruited exclusively from the mass of free workers in Heiban. He established a base near the road where workers would stay and could be provided with food (bread, okra, etc.) and water.

He calculated using three units, *muḫammis*, *feddān*, and *ḥabl*. The first equals 0.7 hectares, and is used widely in northern Sudan, as is the *feddān*, which he calculates as a hectare divided by 2.5 (= 4000 m²). The unit *ḥabl* corresponds, according to him, to 30 lengths from finger tip to elbow (i.e. cubit), while 6x4 *ḥabl* equal 1 *muḫammis*. The *ḥabl* is thus about 17.1 m, while a cubit is about 0.57 m. The payment of workers was done in SDG per *ḥabl* and employees worked as a group under a foreman. In February 2010, the following negotiation of spatial measurement and payment was observed:

The landowner formed groups of 6 workers, each subdivided into 3+3. Every subgroup was assigned a strip of land, which it had to clear, working either towards or from the road. He then went with the workers of each subgroup through their whole strip, and ‘easy’ and ‘difficult’ parts were identified. In the first subgroup, these areas were identified as being in two blocks: the price for clearing the easier block was settled at 60 SDG, that of the more difficult at 85 SDG. This was the result of a negotiation in which 2 of the 3 concerned had demanded 65 for the easier part, but withdrew their demand when the landowner offered to increase the original 80 SDG for the difficult part to 85 SDG. The second subgroup identified large variations in difficulty throughout their whole strip; the overall agreement was 75 SDG.

Whenever somebody wanted to quit, his work was measured by *ḥabl*. Here this measurement was completely standardized using the iron towrope of a tractor, on which 30 ells taken from the arm had been measured and permanently marked. In comparison with the different payment methods specified above, the spatial measurement was the ‘hardest’, allowing the tightest control of performance by the employer. The employer in this example implicitly admitted this advantage on his side, with the saying ‘*al-ḥabl dahab’*, ‘the rope is

gold'; explicitly he stressed the clarity the rope provided. All additional benefits provided by the employer (tea, sugar, chewing tobacco), referred to as *mukayyifāt,* were counted as advance (*salafiyya*) like pre-paid money; this excluded occasional gifts like fish from Abu Jibayha. The trader estimated that most labourers used up about 50% of their wages in such advances; some receive at the end less than 50 SDG. As he was able to cover both food and advances from his stores, they remained for him part of a shift of resources in business-to-business transfers.

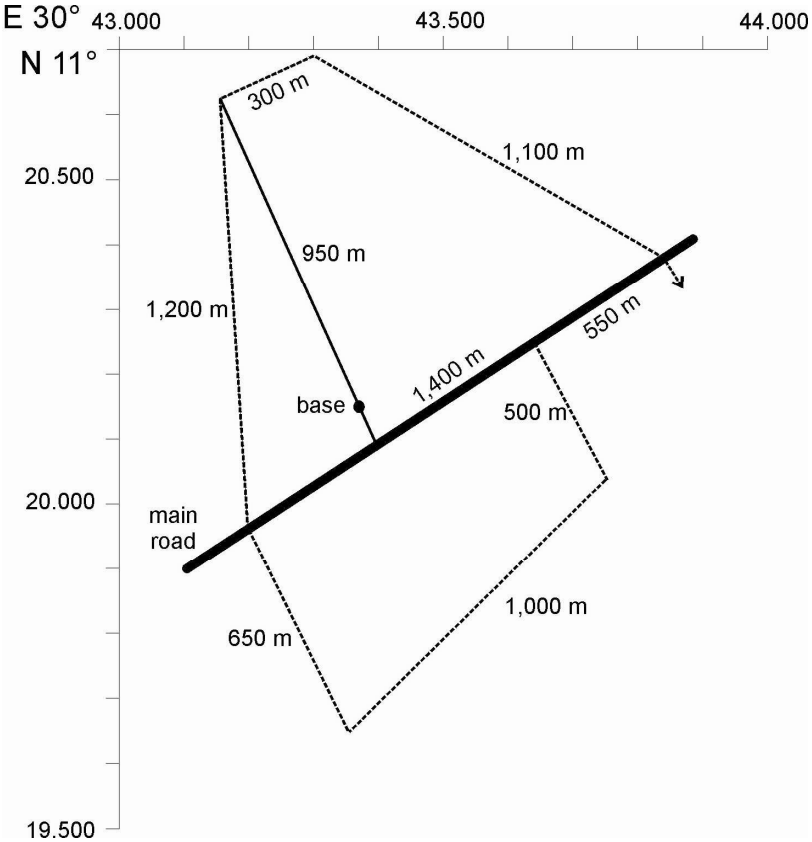


Figure 2B.06: Food producer in Heiban, example 5, showing in broken lines the approximate distance between perceived end points of own cultivated land (the arrow shows starting point and direction of extension; source: own fieldwork).

Overall, at that time he employed 12 workers, with foreman, three tractor drivers, two more permanent workers for the 'old' areas, and six workers for the new land. But in spite of the basic power asymmetry, the trader felt dependent on the workers, which required him to keep them content with good prices, even if this meant a cut of profits in the end. What seemed to drive this feeling was the principle of spatial extension in limited time, associated with an awareness of the limits of control of any principal-agent relation, which necessitates a certain amount of trust. In consequence, he tried to secure the loyalty of his trusted workers by promising them the yield of a new part of the agricultural project, which after each clearing

is extended into a new lot up to the new border. A labourer could also choose to work on his own account on these lots, though at the time none had yet done so.

After all, he regarded it as a success when at least three weeks are worked through, even in circumstances that limited productivity, such as drunkenness of labourers. This was a frequent element reducing both ability to work and income for the rest of the workers' households: The trader complained about his more experienced, faster tractor driver, who often missed work because of his frequent drunkenness. In other parts of his conversation with the workers, one of them was mentioned as spending up to 40% of his wage on alcohol, leaving only the remainder for his daughters. Another circumstance limiting performance was that of illness and injuries from accidents; the trader claimed to pay in case of the latter, a claim that could not, however, be verified.

In short, according to the trader the overall costs for clearing fluctuated between 40-60 SDG/*muḥammis* for 'easy', previously used land with only a few bushes, to up to 100 SDG for difficult, uncultivated land. The average price for the second clearing during the rainy season was 75 SDG/*muḥammis*.

The processes of tillage and sowing, on the other hand, were fully mechanized. The landowner used a Disker TG-100, two trailers, and a Massey Ferguson 275.[111] The tractor, so he said, he had bought used for 22,000 SDG, invested 14,000 SDG for repairing and cleaning, and now has a well-working machine. Over the years, he reflected, his experience grew, and his trading contacts in North Kordofan provided him with additional knowledge –for instance, to fill the disker with herbicidal powder to kill germs in the soil. Through accumulation over the years, he owned the land shown in table 2B.02.

The comparatively low productivity evident in the table was a frequent topic of discussions about the merits of tractors in 'agricultural small-talk' among manual cultivators in Heiban. The higher yield of red sorghum, which reached 8 to 15 sacks per *feddān*, was only one of the counter-arguments. The new white species was said to have no consumer market in South Kordofan, as it does not work well for preferred meals and beverages like *balīla*, *madīda*, and *marīsa*. The tractors were claimed to cause more growth of grass, and to exhaust soils after 2-3 years. The sowing machine was also considered to sow too tightly, with the result that less seeds succeeded in growing.

But the reservations about tractors were also connected with more differentiated considerations about the characteristics of mechanized farming.[112] In the opinion of the subsistence farmer from example 1, the deep ploughing causes *less* grass growth, while manual work necessitates 2-3 clearings; according to him the tillage also conserves the fertility of the soil. On the other hand, he stressed the multiplicity of land usage before the advent of monoculture with tractors, with crops combined with fruit trees, grass etc. during

which times the yield of intensive manual labour was far beyond that attained by extensive mechanization.

2008/ 2009	Crop	Land (mu)	(fd)	(ha)	Yield (90 kg sacks)	(kg)	Productivity (sacks / fd)	(kg / fd)
	sesame	10	16.7	7	42	3780	2.5	226.3
	sorghum (*kullum*)	60	100	42	260	23400	2.6	234.0
	sorghum (*tābad*)	10	16.7	7	67	6030	4.0	361.1
	sorghum (*wadd Aḥmad)*	10	16.7	7	71	6390	4.3	382.6
Total		**90**	**157.5**	**63**				

2009/ 2010	Crop	Land (mu)	(fd)	(ha)	Yield (90 kg sacks)	(kg)	Productivity (sacks / fd)	(kg / fd)
	sesame	16	26.7	11.2	61	5490	2.3	205.6
	sorghum (*kullum*)	70	116.7	49	300	27000	2.6	231.4
	sorghum (*qatembeliyya, feterīta*)	10	16.7	7	65	5850	3.9	350.3
	sorghum (*tābad / wadd Aḥmad*)	10	16.7	7	35	3150	2.1	188.6
Total		**106**	**185.5**	**74.2**				

Table 2B.02: Food producer in Heiban, example 5, showing crops, land size, yield, and productivity (Source: own fieldwork).

These arguments show that the introduction of mechanized farming is a complex one, with many currents and counter-currents. The principle of spatial extension is an important element in this process, increasing the ratio of land to cultivators, and the lines drawn around areas of mechanized farming are more than just a spatial exclusion of other forms of cultivation: They show the success of occupation, which concentrates the business of food production into the control of fewer people.

Apart from the sheer amount of concentrated income he received from his mechanized cultivation, the trader's ability to diversify it was also considerably extended. To give some examples: On his agricultural fields, he employed his foreman, a Fur, to burn charcoal for him, which added to the range of goods he could sell. He started an orchard and employed a

group of boys to control who accessed its grounds. He considered lending his Toyota pick-up truck by contract to the local officials, who had until then only used it by way of borrowing, just as the trader ran his own little errands on a borrowed motorcycle.

Finally, he took over another tractor, which had been bought by the Leira Native Administration in Ḥağir Bago, but broke down after one and a half years, as only inexperienced drivers, who worked without payment, were used. With an investment in good drivers, in the landowner's opinion, one could avoid complicated problems with tractors, for which no mechanics exist in the local market, whereas the workshops dealing with motorcycles and spare part businesses had increased.[113] In any case, the extension of agricultural projects through mechanization seemed, to him, to be the only favourable option available.

2C: Food security

An expert group meeting in January 2008, organized by FAO and UNIDO, stated that "[i]t is only through appropriate mechanization that African farmers will be able to feed not only themselves but also the continent's burgeoning urban population" (FAO & UNIDO 2008: 1). The question, what "appropriate mechanization" means exactly and how it relates to the availability of food is a core issue for a wide field of development discourses.

Many solutions have been proposed to the problem of manipulating nature in order to grow the largest possible yields of targeted crops, all of which deal in different ways with questions such as who will do the mechanical labour and who will benefit from the harvest. Although small-scale subsistence agriculture remains an unavoidable practice for a significant proportion of Earth's human population, there are relatively few projections of future economic activities that include this kind of agricultural production as a desirable element. At the same time, the dominant model of commercial mechanized large-scale farming is heavily disputed, with regard to both its ecological and distributive aspects.[114]

The development discourses involving organizations like FAO approach the issue with a certain assumption, which I want to highlight here. Globally speaking, the term that currently has the highest currency for addressing desirable food situations is that of 'food security'. Food security, according to the operational definition of FAO, describes a situation in which "all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."[115]

In other words, each individual must be able to eat as much as he or she needs in whatever form he or she prefers, so that lack of food is not the limiting factor preventing this individual to be what is called 'active' and 'healthy'. This definition interconnects certain values, which can be understood as results of self-evaluation, or rather as values of a general human condition, e.g. 'sufficiency' or 'dietary needs'. Nevertheless, since the basis of FAO's food security assessments are, in the main, nation states, they obviously must use some way of aggregating individuals into groups, which can then be evaluated collectively as either 'food-secure' or 'food-insecure'. Even more, they deal with concepts that relate a demarcated territory to a single governmental administration.

The experts' statement quoted in the beginning of this chapter came at a time, when the international financial crisis that began in 2007 escalated pre-existing trends of food price instability. Global markets had been experiencing sharply rising prices since 2006; the FAO Food Price Index, one of the main references for such issues, shows this development very clearly:

	Food Price Index	Cereals Price Index	Sugar Price Index
2000	90	85	116
2001	93	86	123
2002	90	95	98
2003	98	98	101
2004	112	107	102
2005	117	103	140
2006	127	121	210
2007	159	167	143
2008	200	238	182
2009	157	174	257
2010	185	183	302
Jan 2011	231	245	420

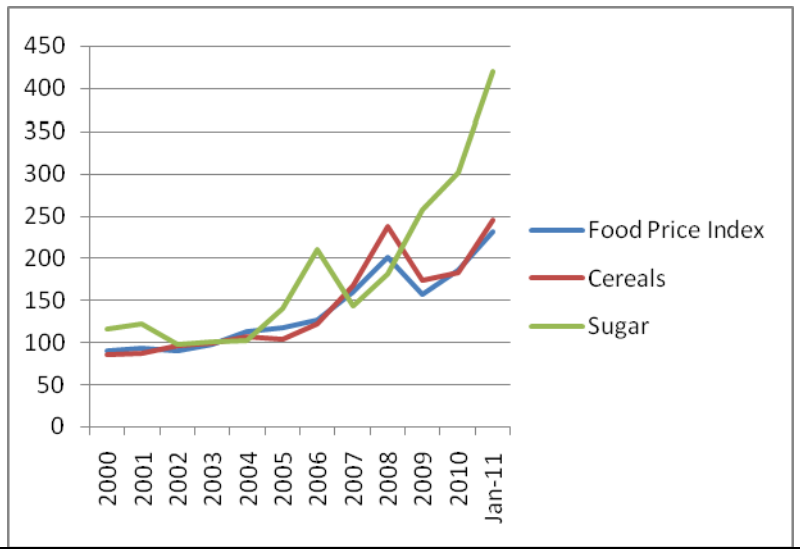


Table 2C.01: Global food price development, 2000 to January 2011 (Source: FAO Food Price Index. <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>, retrieved 31-3-2011).[116]

In contrast to what was then perceived as a temporary global market crisis, FAO regarded 22 countries as being in protracted crises concerning the nourishment of their population. The situation in Sudan was included under the umbrella category of "recurrent natural disasters and/or conflict, longevity of food crises, breakdown of livelihoods and insufficient institutional capacity to react to the crises" (FAO 2010: 12). According to FAO's figures, 62% of the official development assistance to Sudan between 2000 and 2008 had been given as humanitarian aid (FAO 2010: 13), indicating both a constant food crisis and the government's inability to deal with it independently.

How is a food security status identified on such a basis? A comprehensive report on the food situation in northern Sudan's 15 federal states noted at the beginning of 2011 that "a significant increase in harvested areas in the rainfed sector and better management in the irrigated sector have increased production considerably […] in the summer season of 2010" (Robinson 2011: 8). Still, it concluded, the relation between "income and wealth distribution is skewed" and "[i]rrespective of the national balance, food insecurity will be a problem for many households in 2011" (Robinson 2011: 9).[117]

This distinction between production and distribution is also reflected in the report's argumentative structure, which starts with the socio-economic context, continues with the results of agricultural production, then goes on to describe the market situation and, at the end, refers to food security status and prospects. Within the framework of this argument, harvested areas appear divided into two sectors, namely rainfed agriculture and irrigated

agriculture, the former being further subdivided into traditional and semi-mechanized methods:

> The rainfed sector, which accommodates widespread opportunistic planting in marginal semi-arid zones as well as more regular production situated below the 12th parallel, is subject to huge production fluctuations owing to variable rainfall. The semi-mechanised sub-sector practised by large-scale business enterprises is historically a low-input: low-output system, while the traditional system is conducted in smaller units by households using greater levels of labour input, and usually receiving greater returns in terms of yields per ha. The irrigated sector is made up of small to medium-scale mechanized, commercial farms on large-scale, gravity-fed schemes, now mostly released from tenancy restrictions and obligations to grow cotton; and, privately-owned pump-schemes growing, commercially, mixtures of cereals, vegetables, legumes, fruits and oilseeds (Robinson 2011: 13).

The report thus not only notes a higher productivity by (mostly) manual agriculture compared with the forms of mechanized agriculture practiced in rainfed areas;[118] but it also points out the difficulty of clearly distinguishing between the subsectors of rainfed agriculture, since the 'traditional' sector is also increasingly using larger mechanical tools such as tractors. The differences are therefore perceived in terms of size (small-scale vs. large-scale) and of partial / exclusive use of mechanical tools for the various labour processes (Robinson 2011: 14). The acknowledgement of such graduations does not change the further analysis, though, which deals with these categories as given, not least because they are the categories used in data collection.[119]

The further market-based assessment looked for existing stocks at the end of 2010 and concluded that "the northern states of the Sudan are able to cover all of their summer cereal requirements for marketing year 2011" (Robinson 2011: 36), while "at household level, the conflict in Darfur and uncertainty and inequality elsewhere still leaves thousands of households, who depend on purchasing power to buy food with insufficient access to food" (Robinson 2011: 37).

After distinguishing thus the different abilities of different production sectors to contribute to the overall available crops of the national state, the report states here the different abilities of individual consumers to gain access to these crops and, subsequently, their different degrees of vulnerability.[120]

The category 'vulnerability' highlights a temporal implication of FAO's food security definition. The temporal extent of the desirable situation is without gaps or limits – 'at all times' – which means, if all uncertainty is to be removed, that the observations on which the evaluation is based must likewise have no gaps or limits. If this is not the case, then an approximation is all that can be achieved.

Indeed, the huge apparatus of assessment tools and projection methodologies employed by organizations like FAO and WFP operate as technologies of approximation. WFP's website notes several assessment types, each with a different temporal scope and involving more or less effort in data collection and aggregation.[121]

So-called Emergency Food Security Assessments (EFSA), for instance, are analytical tools to indicate and specify the prospective needs of target populations in a specific season that cannot be covered by the national government and, subsequently, require WFP's intervention.[122] An EFSA for South Kordofan in October 2010[123] drew a 'most likely' scenario, which predicted an increase of conflicts in a situation of already chronic food insecurity,[124] due to "[t]he ethnic complexity of the population, conflicting interests arising from disputes on migration routes, the frustration in accessing basic services, in addition to the denial of access to the nomadic groups to water and pasture in the South" (WFP 2010: 15). The South's referendum was seen as another source of conflict "due to border closure and insecurity" (WFP 2010: 16).[125]

The related guidelines suggest that such a forecast is complementary to situation analysis, which is intended to facilitate immediate response, and that it is necessarily uncertain:

> Uncertainty can be reduced by using the best information available and rigorous analytical procedures. There is always an element of **judgement**, however. Analysts must decide what they consider the most likely outcome, based on the available information. The forecast should then be qualified by the reliability of the information on which it is based. A forecast includes **assumptions**, which must be clearly documented in the assessment report, along with the process through which conclusions were developed (WFP 2009b: 170).

One of the constant *implicit* assumptions seems to be that the identification of a need through sophisticated analysis will trigger a national government's response to fill gaps by using all available capacities to provide enough food for its citizens. At least, this provision is regarded as an essential part of governmental responsibility.[126]

2D: Agricultural production

During the last decade, planning activities were in full swing in the Sudan: planning frameworks for post-war rehabilitation (Koop 2001), planning for voluntary return (IOM & UNDP 2003), an agricultural revival programme (Council of Ministers 2008), national and federal five-year plans, etc. Indeed, the Comprehensive Peace Agreement (2005) was a huge set of more or less detailed pre-planned procedures for the so-called transitional period (2005-2011).

The CPA seemed to present the chance to redefine power relations and principles of governmental rule. In actual fact, the Republic of Sudan experienced several dynamics of disintegration in an administrative territory that had never been fully consolidated by a string of successive central governments. While the southern states declared independence after 55 years of struggle with various changing regimes in Khartoum to emancipate what they considered common ground, several groups kept on fighting for position in the networks of power distribution.[127]

In this framework, two major developments became the concern of northern Sudan's national economic policy in 2011: the significant reduction of oil revenues and the rising prices of imported goods. The economic field in Sudan, like the political field, had been marked by several waves of crises, and in both cases the consequences were unequally distributed. The regime change in 1989 was also accompanied by a major economic crisis, which seemed to repeat itself after ten years of international isolation, amidst an economy of scarcity and food ration cards. Around this time the oil business in Sudan made a major leap, which had been on hold since Chevron's departure in the 1980s. The resulting oil revenues, however, were channelled primarily into mega-projects,[128] and funded investment into national security and the armed forces as well as into an inflated civil service machinery.[129]

But the separation of South Sudan, with a large percentage of oil fields on its territory, initiated a clear turn towards diversification. Attempts to compensate included land and mineral concessions to foreign investors[130] and privatization of formerly government-owned companies and projects; for instance, the Al-Gezira irrigation scheme.[131] This strategy received a major push throughout the year 2011.[132]

On January 5th, 2011, the northern Sudanese National Assembly agreed to a number of economic measures proposed by ᶜAli Maḥmūd Ḥassanayn, then Minister of Finance and National Economy. The Minister argued in his address to the Assembly[133] that the increase in prices of some essential goods, especially basic food items, made it necessary to consider measures to improve the economic situation. This sudden adjustment at the beginning of the new year was unavoidable, he stated, because the 2011 budget had been formulated based

on the assumption of a united Sudan, while the major political and economic changes in and outside the country made it necessary to rethink it. This particularly concerned what he called the 'productivity, monetary, and financial crises'.

The 'internal changes' mentioned to by the minister in this context refer to the imminent separation of the South, which would reshape the economic variables to a large extent; the 'external changes' hint at the international financial crisis and its aftermath, whose consequences were first perceptible in the Sudan in the sharp increase of prices for imported goods. The Minister explicitly mentioned wheat, whose price rose by 40% and which had to be subsidized by import credits of the banks, decrease of import fees and related controls and restrictions, as well as the turning of increased efforts towards production of this grain. The intention, he claimed, was to secure a steady price of bread for "the citizens".

Presuming now that "the citizens"' access to bread as a commercial good is the Minister's foremost concern, the question arises as to who exactly is affected when the bread prices rise, and, considering the predictions of instability, what is to be done to prevent or minimize it. The economic element leading to the necessity of this argument is, according to the initial statement, an increase of prices of "essential goods". There is thus an intention to display, in front of the audience, a national parliament and governmental public media, an interest in the availability of basic consumption goods for a social group, here referred to as "the citizens". The prioritized aim he mentions is a steady price for bread, which presupposes the foreseeable availability of bread as a commercial good.

The second explicit example after wheat was sugar, which reached a price "unseen for thirty years"; here the Minister blamed the gap between Sudan's national production and the demands of the population. Because the latter continuously exceeded the former, sugar had to be imported into Sudan at a higher price from global markets. Only suspension of import taxes and trade fees of about 815 million SDG, i.e. about 270 million EUR, allowed traders to offer the imported sugar to the domestic customers at prices close to the price of domestically produced sugar. The domestic production would have to be increased in the future to keep sugar at low prices *and* to stop suspension of taxes and fees.

The third example mentioned was petrol, the incessant subvention of which arguably caused the biggest gap in the national budget– estimated 6 billion SDG (2 billion EUR) – preventing other expenditures "for the good of the people". The Minister claimed that this subvention benefited "undeserving" parts of society (*ġayr al-mustaḥiqqīn*), and he explicitly named non-Sudanese organizations that profited from petrol-related products at domestic prices, such as gas, and electricity. The international price had to be subsidized, too, because it could not be afforded by "ordinary citizens" in Sudan.

In short, he concluded, there would be no alternative to a partial cut of subsidies on these essential goods. The unquestionable hardship for the "deserving parts" of the population, the Minister continued, would be compensated by an increase in income for government officials and in the pensions of ex-officials, by more benefits from social insurance, and by an increase of domestic production, especially in agriculture and animal resources.

The measures unfolded by the Minister are based on the three initially stated crises: finance, currency, and production. According to his argument, the gaps in the governmental budget are mainly caused by spending on governmental organs and subsidies on non-essential goods, which had to be reduced. But those measures produce effective consequences only in the context of a stable currency, whereas the Sudanese economy had been in crisis for years, connected to a serious under-supply of foreign currency. Furthermore, according to the minister, the measures he suggested would have to be subsidized in the interest of "the citizens". These additional expenditures, once again, would have to be met by higher domestic production, which would in turn be supported by subsidies for electricity and petrol-related products used for irrigated agricultural projects and to support the productivity of the rainfed sector and projects involving animal resources. This was to be achieved by an Agriculture Fund of US$ 150 million financing agricultural inputs. A similar fund was planned for the industrial sector.

What appears throughout this discussion, albeit in different forms, is the question of production, and thus of productivity. Within the general metaphor of a state feeding its citizens, this state has to secure sufficient food production inside its territory to be independent of imports. In spite of his stress on domestic production, the final element in the Minister's speech was the attraction of investments and funds by international companies and organizations, both for the recovery of foreign currency stocks and to boost the productive sector, and the Minister cited the special decision of the President to favour Arab investors in this process. The speech thus implicitly claims that an increased presence of large-scale foreign and domestic investors is not in conflict with the food supply for 'the citizens', but that the two develop in parallel. How is this 'co-development' to be achieved?

In 2008, the Sudanese government initiated an Agricultural Revival Programme (2008-2012), which was supposed to re-establish the economy's focus on agriculture as a driving force of economic development, quite apart from industry, in order to limit dependency on the oil sector.[134] The main report outlining the Agricultural Revival Programme confirms this projected direction for the agricultural sector, defining "the national strategic plan for agricultural development" (Council of Ministers 2008: 10).[135]

The committee in charge of creating this plan is claimed to involve "all stakeholders", specifically "politicians, executives, producers, university professors, researcher, private

sector, civil society organizations, farmers' and pastoralists' unions" (Council of Ministers 2008: 9). No details are given, however, about how such a representation was organized, since "all" obviously does not (and cannot) mean that the committee is directly accessible to every individual.

To assess the status quo, the plan uses a so-called SWOT analysis, which attempts to identify Strengths, Weaknesses, Opportunities, and Threats. 'Weaknesses', optimistically sub-titled 'opportunities for change', are dominated by the purportedly low productivity of traditional producers, and lack of financial and administrative infrastructure, lack of effective research and coordination activities, but also include "weak linkages between stakeholders" and "rivalries between professional and trade union organizations" (Council of Ministers 2008: 12). 'Threats', however, include such variables as a financing infrastructure inappropriate for agricultural producers, climate change, difficulties arising from nomadic forms of animal production, trade barriers of developed countries, and deterioration of natural resources "associated with insecurity and tribal conflicts over resources" (Council of Ministers 2008: 13).

The argumentative narrative then places - in a language compatible with the international development jargon[136] – under the banner of 'vision', "a comprehensive national socio-economic development led by a dynamic agricultural sector capable of rapid and sustainable growth and biased towards the weak and vulnerable sectors of the population" (Council of Ministers 2008: 14). The 'mission' is the transformation of "a sector dominated by subsistence production to a modern sector responsive to market signals" (Council of Ministers 2008: 14), by, for example, the facilitation of capacity-building for producers through institutional reforms and the "modernization of agricultural systems", i.e. increase of productivity and efficiency, industrialization and technologies. The 'strategic objectives' also include "balanced growth in all regions of the country with the view to encouraging settlement in the rural areas" (Council of Ministers 2008: 15).

From the broad landscape of success factors that should facilitate such a mission, three are of specific importance here: financing policies, land rights, and knowledge transfer. The financing policies are put under the title "Conducive Production Environment", which includes "[a]dequacy, stability and sustainability of growth of the sector and the economy as a whole" (Council of Ministers 2008: 16). Matrices, labelled from A to S, are then defined, each of which represents certain systems or programmes necessary to "prepare the ground for the intended agricultural revival" (Council of Ministers 2008: 16), in other words, these matrices indicate the assumptions of the programme.

Matrix B, Financing Policies, identifies the Agricultural Bank of Sudan as the institutional basis for supplying so-called smallholders with credit; this supply is supposed to be

increased by not less than 100% up to 2012. “The village centre” appears here as “an instrument to promote the ‘mobile credit’”, albeit with priority given to “producers organized in production and marketing organizations”(Council of Ministers 2008: 19).

Based on such an environment, according to the plan, land usage, among other aspects, must be reformed, as “existing procedures and practices which control land use are not conducive to agricultural development” (Council of Ministers 2008: 30). Since lack of agricultural development is considered as reducing the probability of foreign investment, the following steps are proposed to change land use patterns:

- Study the existing land laws in consultation with the representatives of rural communities and derive lessons from successful local and international experiences.
- Implement land use policies including:
    - Ratify the Land Commission and law and establish the Land Commission
    - Complete the land use map for the country
    - Legalize of land rights of the people and demarcate agricultural lands for each village.
    - Take stock of the lands free of any titles for allocation to investors (Council of Ministers 2008: 30).

The remaining, now governmentally managed land is then supposed to be used in the ‘best possible’ way, which calls for the modernization of existing practices. “The village” reappears again, now as “the centre for dissemination of information and distribution of inputs, agricultural services, credit, training and extension” (Council of Ministers 2008: 31), augmented by local research and educational programmes.

Both framework and direction of development are fixed here: A national economy serves as the basic unit, whose continued existence, reproduction and growth is the primordial – and unquestioned – interest. This national economy is ‘rightfully’ represented by a national government, which owns and manages a national territory. At the same time, this government is the propagator of support services, which transfer superior scientific knowledge to “the village”, considered as an arena of so-called sustainable development. The benevolence of each element in this scenario seems to be an implicit assumption of this plan, excluding the possibility of hostile competition, exploitation, or structural or physical violence.[137]

The financial structure of the resulting action plan was then supposed to facilitate these and other objectives. The two major items of the planned total budget (2008-2011) were 1) food security through poverty reduction and rural development, with 29.4 % (1417.2 million SDG),

and 2) infrastructure; namely water harvesting, irrigation & water resources, and agricultural roads & bridges, with 45.7% of the total (2202.1 million SDG).

However, in spite of the recurrent reference to the importance of projects "which benefit the majority of the people in the rural areas" (Council of Ministers 2008: 9), the main input for agricultural revival was given to the large-scale irrigated sector. A Crop and Food Security Assessment Mission report of January 2011 noted:

> The Five-Year Agricultural Revival Plan will end next year with most of the US$ 5 billion funds allocated to the irrigated sector to enhance water control, rehabilitate irrigation schemes and complete a multipurpose dam project at Merowe. The provision of short-term agricultural credit through the Agricultural Bank of Sudan (ABS) is a regular operational procedure in both the irrigated and rainfed sectors, particularly the entrepreneurial mechanized subsector. Loan uptake for cereal production is generally by entrepreneurs with strong business connections with the ABS and other banks; farmers in the traditional subsector are rarely able to raise the necessary collateral, and this year is no exception, despite a stated willingness to make loans available to smallholders, few if any examples have been noted by AM teams (Robinson 2011: 17).[138]

2E: Agricultural cooperatives

In 2005, a group of migrants born in Heiban formed a cooperative, the Heiban Cooperative for Agricultural Development (*ǧamaᶜiyya haybān lil-tanmiyya al-zirāᶜiyya al-taᶜāwuniyya*), in Khartoum, with two main objectives.[139] The first was to organize and enhance the sense of belonging among members of the clans of Lebaŋ, the people (*qabīla*) of Ebaŋ mountain;[140] the second was to create an organization in whose name land around Heiban could be registered in order to protect it from foreign acquisition.

This specific way of addressing the land issue had been proposed by a former employee of the Agricultural Bank of Sudan and the Ministry of Rural Development. He outlined in two written proposals his considerations connected to this foundation.[141]

The explicit issue of the first proposal, a draft, is integrated development (*tanmiyya mutakāmila*) of the Lebaŋ. The text introduces the *ᶜumudiyya* Lebaŋ as body that had existed since before the 19th century, whose boundaries were clearly defined in connection with the appointment of *mak* Kambucho Komey in 1927 by the British authorities.[142] These boundaries are N 11°12' to 11°28' and E 30°12 to 30°45, defining an area covering about 850 km²[143] (see figure 2E.01); only Heiban (as Irral), Al-Azraq (as Gudowa), and Kubang are specified as settlements inside these boundaries.

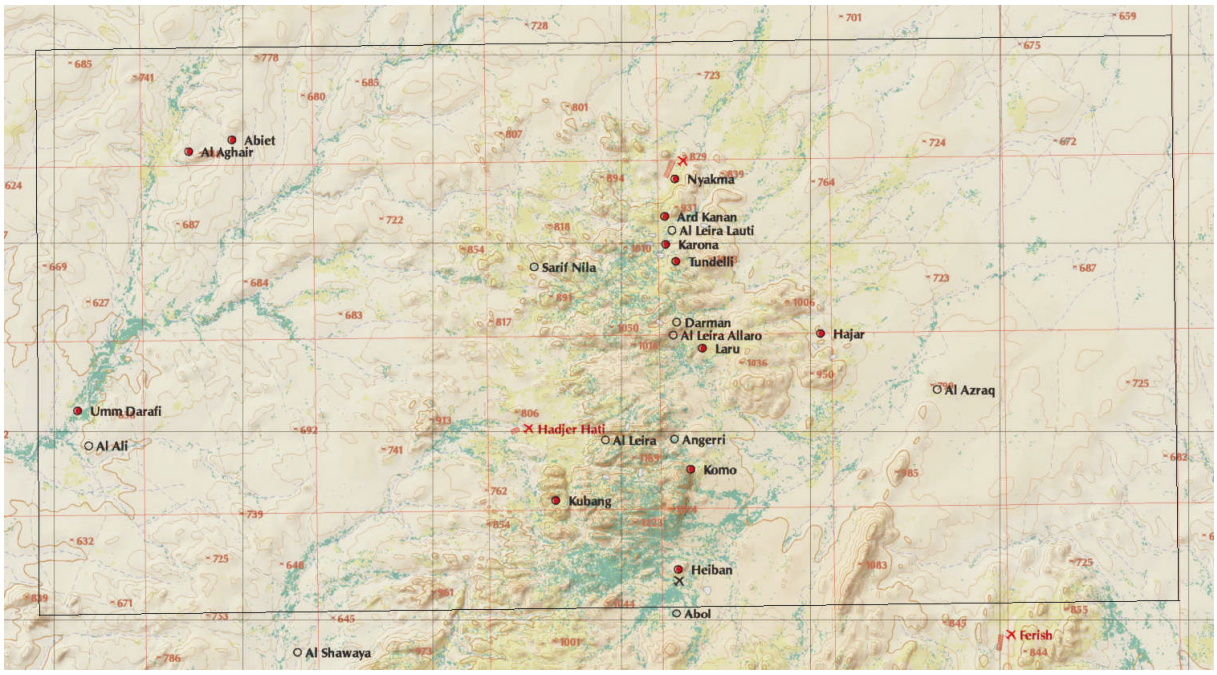


Figure 2E.01: The *ᶜumudiyya* Heiban according to a proposal for the development of the region through the Heiban Cooperative (projected as a rectangular frame on the Topographic Field Map, The Nuba Mountains 1:250,000 km, Centre for Development and Environment, University of Berne, 2005).

The explicit aim of the proposal was to initiate a programme to organize cooperatives and support them by training, better infrastructure and modern techniques, as appropriate. Investment in 'integrated agriculture' (*zirāᶜa mutakāmila*) and cooperative marketing were seen as the appropriate ways to accumulate the capital needed for further development. It argues that the form of these cooperatives will ensure that opportunities and profits will be distributed widely, for instance by helping to prevent the price dumping during the hunger period before harvest. Increased production[144] and the subsequent associated income could even be used to create new, more equal credit systems that undermine the present system of *šayl* and *salam*.[145] This financial stability would, it is argued, also provide securities when dealing with banks.

A second, more elaborate proposal set out to establish a model farm (*mazraᶜa namūḏiğiyya*) for horticulture and animal husbandry in Heiban. It outlined a five-year plan (2008-2012), specified beneficiaries and successive levels of implementation, and presented a detailed budget plan including the prospective sources of finance, specifically the Ministry of Rural Development, the Ministry of Agriculture, FAO, Care International, and community contributions.

This second proposal was presented, in the name of the Sudan Agency for Relief, Rehabilitation & Development (SARRD) to the General Director of the Ministry of Agriculture in November 2007. In the letter to the General Director, SARRD is introduced as a coordinating body mediating between the Heiban Cooperative and the funding institutions (*mu'assassāt mumawwala*), and a mobile number written by hand below the initiator's name points to a personal contact to support the formal proposal. Furthermore, the written proposal was accompanied by a letter from the Executive Director of the Vice Governor's office, which conveyed the wish of the Vice Governor to treat the proposed programme as a priority in 2008's Ministry budget. This additional reference point did not have the desired effect, however, either because the proposal did not make it into the budget, or because in the end the money went somewhere else. In any case, the proposals and the work that went into planning had no significant consequences: By mid-2010 not a single *feddān* had been cultivated by the cooperative, nor had a model farm been started.

What happened?

The first proposal contained a section setting out factors that would lead to failure of the proposed cooperative. On a general level, the author identified: 1) lack of 'cooperative awareness' (*al-waᶜī al-taᶜāwunī*), especially without sufficient training, which may lead to the selection of a chairman and an administration for the cooperative based primarily or even solely on their availability due to their having no other commitments. This may result in work

being concentrated on individuals who are either not necessarily qualified to perform it, or who lack active support from those who delegated the work to them. Further factors identified as potential threats to the success of these initiatives were: 2) lack of capital due to the condition of financial institutions, which may result in a lack of means to cover losses and thereby to manage risks; and, finally, 3) prevalence of individual over group interests and the lack of support by elites in training and guidance. In the specific field of agricultural production, the greatest dangers identified were: 4) failure of members to give harvested crops to the cooperative, due to directly seeking their own benefit, and the overestimation of the possible production, which might result in the cooperative accumulating debts not payable by the income.

Following this specification of dangers, the proposal builds up a plan of the administrative structure of the cooperative, with detailed competencies, a plan for a training centre, and finally, in the part about agricultural production, progressive, quantified steps detailing how to build up a sufficient area of cultivation. Only the first of these proposed steps actually materialized, however, and examples of each of the reasons for potential failure identified in the proposal can be traced in the cooperative's development. Still, it seems that even this plan was drawn with some implicit presumptions that were, in fact, contrary to the context in which the organization was supposed to emerge.

Social recruitability[146]

The founding document of the cooperative, produced after an inaugural conference on 30th of September, 2005, starts at a very different point: The initial sentences lay out an intention to revive 'Lebaŋ' (*abnā' lībānq*) as a significant identity within the context of the plurality of Heiban town's society. The cooperative, according to the text, is only one of the initiatives intended to produce this result, and it concentrates on the improvement of livelihoods (*al-waḍ^{c} al-ma^{c}īšī*) of its members, specifically of their food security (*al-'amn al-ġiḏā'ī*). By investment in agriculture, animal production, marketing, storage facilities, and small handicrafts, it suggests, a general contribution to the development (*al-tanmiyya*) of the region would be made. Achieving this necessitates clear and elaborate planning (*ḫuṭaṭ wa barāmiğ madrūsa*) together with strict and controlled finance and administration (*lawā'iḥ māliyya wa 'idāriyya ṣārima wa muḥakkama*) to ensure real improvements and sustainability (*taṭawwur wa 'istimrāriyya*) of the cooperative over successive generations.[147]

The document had an attached priority list for distribution of the cooperative's shares. The first eight categories were reserved for the families of the tribal group, followed by the migrant associations (*rawābiṭ*) of Heiban (Irral, Leira, Shawaya) and other charitable organizations (*ğama^{c}iyyāt ḫayriyya*) that contributed to Heiban. The next extension was

planned for the extended kinship groups (*ʻusra ᶜašīra*), like Umjang, Abol, etc.; other tribes resident in Heiban (Atoro, Tira, Leira, Shawaya); those belonging to Heiban (*abnāʼ haybān*) but living in towns of the northern states (Kadugli, El Obeid, Wad Madani, Port Sudan, Atbara, Dongola, Kassala, et. al.); and finally any other resident (*muwāṭin*) of Heiban, the number of whose shares were limited to ten per person, however.

The excluded categories are as interesting as those included: Neither the communities abroad nor those residing in the south are specifically mentioned; nor are those groups whose stay in Heiban may not be permanent, such as the nomadic Fellata. The limitation of 'foreign' acquisition to ten shares per person highlights the ethnic definition of membership.

From the beginning, the definition of this circle of beneficiaries was entangled in contradictions stemming from the difference between intention and practicability. The category of *muqāʼimīn haybān*, 'residents of Heiban', was, for instance, intended to describe the core group of the cooperative, but most principal founding members lived and worked in Khartoum. It took until 2009 to prepare the formal registration of the cooperative in South Kordofan and to hold the first assembly in Heiban, so the idea circulated at first almost exclusively in meetings in Khartoum. One of the reasons for this was the unexpectedly slow selling of the basic stock of shares.

An administrative council was formed and a veto right was given to the eight clans of Lebaŋ, which were allocated 40 shares each. Individuals could then buy shares, but the process appeared to have had difficulties: The practical organization of the dissemination of both the idea and the shares started with the appointment of a person in charge (*ᶜamīd*, pl. *ᶜumad*) for each clan, who was to search for those interested and convene meetings with them based on their supposedly high status in the families. Many influential persons refused to participate, however, pointing out the insecurity of Heiban, and often merely wealthy individuals got involved, who were appointed as *ᶜamīd* but were often absent and not effectively active. In other cases, the *ᶜumad* of some of the clans did not actually hold monthly meetings. In reaction to this situation, the group of initiators agreed to exclude everybody who did not buy shares immediately from the administrative council for the next 5 years.[148] The initial exclusion of communities around Lebaŋ, such as Abol and Kubang, was then scrapped in a new constitution allowing any interested organization, company, and individual to buy shares.

While the principal initiator saw a problem of commitment here, he did not infer the possibility that the model of belonging adopted by the initiative may itself have been problematic. Those first years were marked by a fluctuation between an ideological exclusion based on ethnicity, and a practical inclusion when this presumed social circle proved ineffective in creating a capital basis for the cooperative. The latter was also related to challenges from other

organizations claiming representative functions for Heiban; first of these being the Heiban Association, which had already been registered in 1999.[149] After the leading members of this association had expressed resistance to the formation of an independent body, some of them changed then their attitudes and bought shares as individuals. Those members of the cooperative with close relations or even membership in the association then convinced the rest even to accept advances from the association to buy shares as an organization.[150]

Nevertheless, the issues of membership boundaries and belonging remained a part of the members' discussions and led to irritations with those who used a different framework of reference from that discussed in the cooperative to define its activities. On April 29th, 2009, the cooperative had its first general assembly in Heiban in order to complete the necessary procedures for registration in the Union of Cooperatives of South Kordofan.[151] The meeting in Heiban involved the presentation of a tractor programme by an employee of the Union. There were 200 tractors from the company Central Trading (*tiğāra al-wuṣṭa*), which is the agent for LG and New Holland in Sudan. A programme by the Ministry of Agriculture and Forestry, the Agricultural Bank of Sudan, the Union and the company tried to disseminate the tractors through cooperatives in the state to support the mechanization of agricultural production.[152]

The employee of the Union suggested during the assembly that they enter the programme of tractor acquisition, which was in its initial stages at that moment. In order to legitimize it as favourable for 'the community', he added that three agents of the Central Trading Company were even 'sons of the region' (*awlād al-balad*). Just before this presentation, the assembly had discussed again whether other clans should be allowed, indicating the ongoing negotiation of inclusion and exclusion, so an older man from the assembly stood up and asked about the clan those 'sons' belong to, and the confused addressee of the question answered with the regions of the Nuba Mountains the agents variously came from: Talodi, Kadugli, etc. Now the confusion was on the side of the old man, and others had to intervene to explain in order to resolve the misunderstanding.

The background of this misunderstanding is a disparity of frames of reference. The official spoke as a representative of an administrative system, which tries to incorporate a cooperative of federal state citizens, and thus regards them first and foremost as citizens, with the federal state as the primary frame of reference. The old man, on the other hand, referred to the central social layer incorporated into the cooperative from the point of view of its members. This disparity of the reference frame of belonging also reflects other disparities: The primary interests of the cooperative's members amount to something quite different from the large-scale implications of the governmental programme of tractor distribution.

The assembly agreed to the official's proposition, and the following developments reflect some of these further disparities. Soon after the meeting, the first instalment was paid and

formal procedures for land registration, setting up a bank account, and insurance for the tractor and a driver were completed. Despite the official's promise that 200 tractors were ready for distribution, it took until August to get access to a tractor, at which point the season for tillage and sowing was regarded as being over. Furthermore, the tractor would have been of no use without tillage machinery, such as the most commonly used disker, which had to be rented. All this put the cooperative in a precarious financial situation.

Capital and risks

The assembly was not the first time that Union officials had approached the cooperative, but before their contact with it was the initiator of the idea, chairman of the Administrative Council of an organization that officially still did not exist. He had been mandated, though, to register the cooperative, and so he postponed any agreement with the Union until the general assembly.

It took the board of the cooperative three years to finish the actual process of selling shares and to fulfil the formal requirements for registration, among them the opening of a bank account and receipt booklets issued by the Central Bank of Sudan. The first general assembly in Heiban, which took place in April 2009, was also the first formal inclusion of the inhabitants of the home region into the internal proceedings.

The course taken by this administrative odyssey can be retraced by examining the documents of the cooperative. It took two years to receive the receipt booklets from the tax authorities (*daywān al-ḍarā'ib*). On December 16th, 2007, the cooperative was registered in Kadugli. On May 20th, 2008, a bank account was opened in the Kadugli branch of the Agricultural Bank, specifically a current account (*ḥisāb ǧārī*). On September 27th, 2008, a meeting was convened to prepare for the first general assembly and thereby mark the formal start of activities for April 2009.

In the initiator's opinion, there would be no success without training; therefore courses in production and marketing (the final goal) were supposed to take place first; i.e. courses in tractor usage and repairing, accounting, animal husbandry, leather production etc. Accordingly, he considered the existing three-day training programme for cooperatives set up by the Ministry of Agriculture as hasty and useless, and its specification of programmes for GoS- and SPLM-areas as indicative of its politicized origin.[153] When the tractor programme was presented and accepted at the assembly, however, internal training had not taken place, neither had a calculation been prepared and discussed, as if success would automatically materialize along with the tractor.

The financial structure of the offer was that a tractor would be delivered that same year, upon payment of a low first instalment, 6000 SDG. In the following 5 years, assuming production

took place, annual instalments of 14,000 SDG were due, until the overall price of 68,000 SDG had been covered.[154] The only income of the cooperative before production came from the selling of shares; individual shares à 25 SDG plus 10 SDG fees, family shares in packages of 40 plus 100 SDG fees. At the founding of the cooperative, the following subscribed shares were noted:

Family / individuals	**Number of shares (à 25 SDG)**		**Fees (in SDG)**		**Total (in SDG)**
Lebaŋ families	320	(8 x 40)	800	(8 x 100)	8800
Individuals	136	(136 x 1)	1360	(136 x 10)	4760
Individuals	46	(23 x 2)	230	(23 x 10)	1380
Individuals	9	(3 x 3)	30	(3 x 10)	255
Individuals	68	(17 x 4)	170	(17 x 10)	1870
Individuals	15	(3 x 5)	30	(3 x 10)	405
Individuals	60	(6 x 10)	60	(6 x 10)	1560
Total	**654 = 16,350 SDG**		**2,680 SDG**		**19,030 SDG**

Table 2E.01: Shares of the Heiban Cooperative subscribed in 2005 (Source: Internal document of the Heiban Cooperative).

This pre-calculation was accompanied by different considerations, which showed the 'projection character' of different members of the Executive Committee. The Financial Secretary, for instance, reflected later that they had presumed 9 clans to exist, each of which would take 40 shares, and that in addition about 600 individuals would also buy shares. Together with a loan, the resulting budget of 30,900 SDG could then have been used to buy a tractor for 51,000 SDG. Then the government's programme 'intervened', and because the selling of shares had been slow, this chance to acquire a tractor directly was taken because, it was assumed, once machines appear in front of people's eyes they would join in enthusiastically. Strangely enough, the Secretary, who also ran a ticket shop for the travel lines Kadugli-Jao and Kadugli-Heiban, would never apply this financial optimism to his own private business. He kept correct books for the cooperative; the validity of his presumptions, however, was questionable.[155]

The chairman of the Administrative Council refuted the 'once before the people's eyes' argument, because according to him one cannot wait for something to happen if that event can only be instigated by one's own actions. He made the claim, however, that if every one of the estimated family members bought only one share, with the addition of the 1100 SDG from each family the total would exceed 50,000 SDG. Once actual production started, there would be no problem, anyway.[156] Another member of the Administrative Council calculated, with me, that an overall number of 1000 shares could be sold at 25 SDG plus 10 SDG fees,

giving a budget of 35,000 SDG. The area to be cleared for cultivation could then also be used for selling timber, further clan members in other towns could get involved, and so on.[157] Another member of the Council had been against investing in the tractor, but failed to convince the other members.[158]

Based on the receipt booklets, the list of shares actually purchased and paid for at the time of the general assembly is shown below:[159]

Family / individuals	**Residence**	**Number of shares (à 25 SDG)**	**Fees (shares x 10 SDG)**	**Total**
Lebaŋ families	Khartoum	188 = 4700 SDG	1880 SDG	6580 SG
Individuals	Khartoum	97 = 2425 SDG	970 SDG	3395 SDG
Lebaŋ families	Kadugli	10 = 250 SDG	100 SDG	350 SDG
Individuals	Kadugli	37 = 925 SDG	370 SDG	1295 SDG
Individuals	Heiban	15 = 375 SDG	150 SDG	525 SDG
Total		**347 = 8,675 SDG**	**3,470 SDG**	**12,145 SDG**

Table 2E.02: Shares of the Heiban Cooperative sold in 2009 (Source: Internal document of the Heiban Cooperative).

The resulting financial situation was as follows: In 2009, the average price for sorghum directly after harvest was 100 SDG / sack. In order to ensure a clear profit of 14,000 SDG each year, 140 sacks would have to be produced, if net proceeds equal gross return. The average productivity of soil in the area was about 3 sacks per *feddān*, entailing the requirement of about 45 *feddān* of successfully cultivated soil. In January 2010 it was still unclear how such cultivation would be organized. Although a delay of one year was granted by the Agricultural Bank, consideration had to be made as to where money would have to be taken from in order to pay the instalments. In case of inability to pay, the executive committee would be legally liable, with the risk of imprisonment.[160]

A discussion of the appropriate economic strategy could include the cultivation of other crops, exploring further models of credit and investment, and diversification of the usage of the tractor, among other things. What happened, however, is that no such strategy was initiated, at least not on the level of collective decision-making. This failure was partly a consequence of the leadership structure of the cooperative.

Leadership

In order to prepare the intended space for agricultural production and to start cultivation, a significant labour force had to be recruited. To understand the cooperative's difficulties in recruiting this labour force, it is necessary to look at the organization of leadership and representation.

To quote again the founding document: Three categories of leadership were defined. The first, 'head of the family', was described as a representative chosen by the whole family, who was authorized to transfer the collected money for shares from the family's treasurer to the cooperative's treasurer. In return, this representative would be responsible for both communicating decisions and distributing profits back to the family. The second, a 'model person' with larger financial means, was expected to help the rest of 'the community' both financially, even if by offering loans, and intellectually. Finally, a 'person in charge of family affairs' is described as an extraordinarily active person (*al-'insān al-našṭ*) responsible for the collection of share money and the propagation of the cooperative's programme, occupying thus a pivotal role (*miḥwar ra'īsī*) in the successful implementation of both processes.

Once again, these intellectual, conceptual abstractions pointed the direction to be taken, while implicitly presuming the possibility of identifying and recruiting committed implementers based on written definitions. In fact, the actions and strategies of individual members were highly diversified. In meetings, young members in particular failed to appear and were criticized for being inactive.[161] Meanwhile the leading members themselves went in the direction of individual market-oriented production and superseded the framework of the cooperative. Even more, one of the founding members of the cooperative, the *ᶜumda* of the Lebaŋ in Khartoum state, admitted that one of his intentions had been to reduce the financial pressure on well-off community members by empowering the poorer ones.[162]

However, the upper organizational structure of the cooperative suggested a unified body (arrows indicate authority to issue directives):

General assembly *(al-ğamaᶜiyya al-ᶜumūmiyya)*

⇓

Administrative Council (*mağlis al-'idāra*)

⇓

Executive Committee (*al-lağna al-tanfīḏiyya*)

⇓

General Director (*al-mudīr al-ᶜām*)

General Secretary (*al-'amīn al-ᶜām*)

Financial Secretary (*al-'amīn al-māl*)

In fact, the cooperative developed a functional dispersion into three sites: it was registered and administered in Kadugli, that being the home of its main initiator; its economic backbone and efforts to sell shares were located in Khartoum; while the project was of course planned

for implementation in Heiban. A closer look at these three administrative levels of the cooperative shows how private strategies kept pushing collective productive action aside:

The three-fold structure resulted from the distribution of capital, administration and agricultural land. Those living mainly in Khartoum were addressed from the beginning as the main shareholders, who would finance the operations of the cooperative. Three supervisors were appointed to the Administrative Council to organize the recruitment of these shareholders and the collection of membership fees. Nevertheless, 'registering' was often simply the agreement, through informal channels, to be put on a list, which did not establish institutions of enforcement and control beyond those of the social groups that the cooperative tried to empower.[163]

At the same time, those able to divert a part of their incomes, mostly members of professional elites, were not in need of a low-level income source such as a cooperative. Their only incentive to invest was the relevance of the social objectives, which could not be of urgent economic interest to these elites, because their financial success was based on their establishment of social ties other than those promoted by the cooperative. These circular dynamics stopped payments after a period of initial support, because the membership fees represented only one of many diversified investments in social links, and the cooperative showed no signs of building additional momentum.

This fragmentation of commitment also exposed a crucial asymmetry within the organization: While the cooperative was merely a sideline for those members with a stable income, whose risk in investment could be balanced, for subsistence farmers, who became involved by investing their main source of income, it would be difficult or impossible to balance the risk of failure of the cooperative.

Most formal procedures took place in Kadugli, the capital of South Kordofan. Four years had passed between the initial meeting in Khartoum and the first general assembly, because the formation in Khartoum took so much time and no bureaucratic infrastructure supported a swift registration. From the viewpoint of one of the three supervisors in Kadugli, however, the three-fold structure itself delayed or even prevented effective action. His main criticism was the coordination between Heiban, Kadugli, and Khartoum, which made urgent meetings very difficult, while some basic issues could not be solved by telephone.

For instance, clearing was necessary, but this task could only be undertaken in Heiban, after seeing the area in question. To this end, one of three basic strategies had to be chosen, i.e. clearing by owners as accord, work in exchange for the wood cut, or payment of free labourers, and this decision had to be made collectively. In the same way, a delegation with an engineer of the Ministry of Agriculture and Forestry had to be organized on a date that suited all involved, necessitating coordinated decision-making between all three sites.[164]

Heads of the organization in Heiban, Kadugli and Khartoum blocked their expertise, and the responsibility for decisions was pushed from place to place. The cooperative's accountant in Khartoum, for instance, maintained that specific calculations had to be done by the implementers in Heiban, while he also admitted that the competency to do so was concentrated in Khartoum.[165]

The delay in production necessitated looking for other sources of funds; the only sources available were the UN agencies and international non-governmental organizations. So the initiator of the idea submitted his training programme proposal once again, this time with AECOM of USAID; when I talked with him he was still awaiting a reply.[166] One of the supervisors in Kadugli was preparing applications to FAO, NCA, Care Switzerland, and others, although he doubted that the cooperative would pass a formal evaluation, even with the existence of registration, bank account, shareholders, and assets as a good starting point. He considered that even these steps needed, nominally, the agreement of the members, which was difficult to organize.

The cooperative therefore turned in circles, even though it was initially considered that the tight definition of membership 'should' have provided a strong sense of unity, with clarity of land ownership inside the project, which, it was thought, 'should' guarantee communal, familial, not pecuniary decision-making. Further, the social embeddedness of the cooperative 'should' have established a sense of morality and social control, which was supposed to prevent amoral profiteering. In the end, however, these assumptions seemingly hindered economic rationality.[167]

In fact, the individual members adopted multi-directional economic strategies, as the example of the main architect and head of the Administrative Council of the cooperative shows. He had studied insurance and banking and had been an employee of the Agricultural Bank of Sudan for 12 years. In the 1990s, he had been involved in a programme of credit cooperatives in Al-Nahūd,[168] and based on this experience he was able to present the most comprehensive idea in the Khartoum meeting in 2005, which largely defined the course of action.

Strangely enough, like many other administrative members of the cooperative, he showed an undifferentiated economic optimism about the potential attractiveness of the cooperative, yet still diverted his own attention to private projects: He neither provided or pushed the other members toward producing a clear calculation of the financial prospects and needs; and he negotiated, parallel to the instalment payments for the cooperative's tractor, access to land for the tractor he privately owned with one of the cooperative's supervisors in Khartoum.[169] This way, he simultaneously juggled various possibilities of renting land north of Kadugli

along with the cooperative's options to cultivate on planned land in Habila, or south of Abu Jibayha, or in unplanned land near Al-Azraq.

Land

In short, the links activated here lead to banks, non-Heiban official Native Administration leaders, INGOs, organs of public administration, and private businesses; the prospective social framework of the cooperative was not only superseded, but became irrelevant. This is all the more surprising considering the starting point of the initiative.

Several interviews with founding members contained statements to the effect that the cooperative had been founded in reaction to the observation that more and more people were taking over the 'ancestral lands' of the Lebaŋ, most of whom lived outside Heiban as voluntary migrants or refugees.[170] What made this perception of endangerment of the 'ancestral land' seem more urgent was the perceived approach of urban planning in Heiban town and the increasing influx of 'outsiders' into the town during and after the war.

The founding document corroborates these statements, but dresses the territorial claim in a technical, generalized language. The tool for the preservation of customary land rights was thus to explicitly support certain forms and titles of ethnic representation, in this case the clans of Lebaŋ, which had dominated Heiban originally. Developments after 2005 suggested, furthermore, that registration of land was necessary for this preservation, whose basis was the registration of an officially acknowledged organization, the cooperative.

What was achieved with this initial claim of 850 km² ancestral land (about 200,000 *feddān*), was the official registration of 3000 *feddān*, confirmed (*muṣaddaq*) in 2010.[171] Not only was this registration dwarfed by large-scale land contracts, which in the same year signed over as much as 100,000 *feddān* between Abu Jibayha and Talodi to Central Trading and three other companies,[172] but it also remained without tangible consequences for those actually depending on agricultural production.

Let me return to the small-scale subsistence farmer ᶜIsa, who due to his background and means of livelihood was a member of the main group of explicitly targeted beneficiaries of both the government's and the cooperative's programmes, and look at what happened from his point of view. In a half-hearted attempt to engage in mechanized farming, he had entered the cooperative, but it remained for him a hybrid being: Access to machinery clearly could not be managed with the resources at his disposal; he depended on the pooling of resources provided by such organizations. At the same time, the cooperative consisted of structures and had institutional links that were intangible from his point of view. What were tangible were the specific requirements, the calls for work, and the payment of fees, and these joined the assembly of work and payments that constitute his economic existence.

We discussed why he still did not pay his share, and he explained it as being down to 'lack of interest' (*ihtimām*). By this he meant that he would save money as soon as he had some spare, but thinks first about things other than this investment in something essentially new. A further reason, from his point of view, was that 'those in charge' (*al-mas'ūliyyīn*) were supposed to come to explain in more detail how everything worked, and they 'who held the issue' (*al-yamsiku al-mawḍūʿ*) would have to mobilize for the necessary activities; for instance, the clearing of a field. But work for the cooperative was additional work, payments are additional payments.

The first tangible problem was the preparation of a field. ʿIsa joined a group of 100 people, who visited a potential field of 500 *feddān* in January 2010, but they returned with the realization that only hired labourers could achieve the clearing of such an area.[173] The area had been left uncultivated throughout the war, and the preparation of the plot for tillage required the clearing of bushes and trees, which had grown closely.

However, the cooperative's chairman in Heiban had still hoped that it would be possible to rent a lorry and go to the project site as *nafīr* of a group of men every Saturday to clear; charcoal production from cut trees and 100-120 sacks of sorghum would be enough to cover the next instalment. On a Saturday at the beginning of March 2010, about 30 men went by lorry, rented for 200 SDG, to the field, and there discussed whether they should perhaps go there three times a week to finish the work, but finally decided to write a report to Khartoum and Kadugli to the effect that further financial means would be required in order to complete the clearing, or at least to rent the vehicle regularly.

In the end, the financial dilemma of the cooperative called for a form of production that did not fit the original objectives of the cooperative: cultivation on land outside the neighbouring Al-Azraq (rather than land undisputedly belonging to Heiban), achievable only with hired labour (not by Lebaŋ working together out of a feeling of belonging).

In this situation, ʿIsa remained in a position of waiting, looking for indicators of success; indicators that additional effort would bring additional benefits. He did not only apply these considerations to his subsistence farming, because the cooperative's only additional benefit would be to supersede this framework. The indicators were directed by the hope for something different, better, yet their realization was held back by the ambivalent potential of 'difference'. The trust or mistrust towards this new frame of reference was a wavering vessel on the lookout for indicators of trustworthiness: trusted propagators, trusted procedures, trust in continuity and prevalence. At the time when I spoke with him, such a trust had not materialized and he continued working into the new season with what methods had worked before, with little experiments at the sidelines.

3 Water

Ask rain from the LORD in the season of the spring rain, from the LORD who makes the storm clouds, and he will give them showers of rain, to everyone the vegetation in the field. For the household gods utter nonsense, and the diviners see lies; they tell false dreams and give empty consolation. Therefore the people wander like sheep; they are afflicted for lack of a shepherd.

Zechariah 10: 1-2
(English Standard Version Bible, 2001)

3A: Seasons

In Abol, a village about six kilometres west of Heiban, the availability of water became an urgent issue during every dry season.[174] On February 10th, 2010, when I was about to leave Abol for the last time, it was still several months before the rainy season was due to come, and the driest months lay ahead. Any possible source of water would be utilized to cover the needs of the village until the relieving rains arrived in May or June, and continued until October, during which time many shallow dry riverbeds and watercourses would be filled for some months by the downpours and the water running from the mountains.[175]

During the days before my departure, I embarked on some tours, accompanied by guides from the village, around the mountains that form the hinterland of today's main settlement area of Lower Abol.[176] We followed the pass between two rock formations, TÚRUM to the east, and GRÚ to the west, where a small path wound tortuously uphill, allowing human feet to pass up and down only with effort. We climbed continuously, though with rather heavy, bumpy movements around the rocky obstacles; a gathering of slippery giants and unsettled dwarfs. Green plants grew bravely from the unwelcoming ground, proclaiming the presence of water concealed in the hollows of massive rock formations. Then, behind the ridges, it became easier to move on the more level paths, across plateaus and basins, the lebensraum of past times, which the recurring military violence returned repeatedly to the present.

Here my guides started to indicate where water could be found. Some way down, stones surrounded a pool that was inaccessible until the rains caused its water to spill over its edges. On the right side of the pass a further hole containing a reservoir could be entered, but its supply, fed by last year's rainfall, had already dried. We turned left, and continued into the fertile plateau behind GRÚ.

To the east, in the distance Heiban was hidden from view behind a mountain marked with a panorama of ridges and valleys. The first net of watercourses meandered around the straight path or ran parallel to it. Its main tributary gave water to the spring NDÍ, where water was hoped to flow until December. It went into a bend, and at its end we encountered an inhabited cave, home of the old man Ṣalāḥ. He had gone to market in Heiban over the black back of the eastern mountain, and the only signs of his presence we found were the plastic containers and *buḥṣa*, gourds, in which he stored fresh water from caves. A look inside the cave revealed a few square meters of living space and storage space for agricultural tools, and a bedroom with a big flat sleeping stone. A few steps from his home, he cultivated sorghum and vegetables in the rainy season. Attempts to grow sugar cane, my companions told me, had not succeeded, probably for want of water.

We went on, crossing ruins of houses, and on the way John, one of the guides, recounted how he had been *mandūb*, contact person of the village to SPLA during the war. When the army demanded wood, livestock, water and so on, he had organized the necessary labour force.

In his narrative, the army had been a benevolent force, demanding but not excessive, and forced marriage or rape did not occur, or did so only in isolated cases. The SPLA he always portrayed with a certain sense of distance: *dēl ᶜamalū*, 'they did', was the expression used to refer to the forces' activities. Also the description of places was still carried by war memories of close, yet unfamiliar movements: West of GRÚ, a big, almost flat rock, DÍBUṚU, served as landing field for helicopters, from which point supplies were brought to the SPLA camp at the mountain of NDƐṚALAŋ, and further to the soldiers' houses at neighbouring GÚDLƐLƐŋ, where the indentations from the milling stones could still be seen in the rock.

At the same time, the soldiers were actively engaged in protecting the villagers. They saw the patrols of the central government's army in the distance and warned those working in the fields below about the approaching enemy. Although almost every male villager was armed (most with only an old one-bullet Remington) fast uphill flight was their only possible response to the ground and air attacks: The mountains protected them, otherwise so he said, they would be *ŋalāṣ*, finished, by now.

In other accounts, enemy and protector are not so clearly distinguished.[177] In the mid-1990s, village life was managed by a group of elders, who had been soldiers themselves and who succeeded in preventing the intrusion of the SPLA with its forced recruitment, death threats, and violence. By the end of the nineties, however, many of these elders had migrated to the towns, and the remaining leaders were not able to secure the village to the same extent, so the villagers suffered from periods of harassment, especially by untrained, undisciplined young soldiers.

Life in the hills also meant a focus on the immediate environment for daily needs: Ashes of *delēb* palm leaves or powdered goat horn were used as salt substitute, wood ash substituted for soap. The thin plateau soils supported only limited crops, so human food came to include grass, and, in addition to pigs, sheep, goats, and cattle, other animals such as snakes, mice, insects, etc. were also eaten.

Amidst these threats and scarcity, water was never a difficult issue, and only became one when people started to settle in the lowlands again.[178] One of the cave systems that was a focal water point during the highland times was GƐƐṚÁ, so our tours were continued in order to visit it.

GƐƐṚÁ has both a higher and a lower access point, the former outside, the latter in a cave. When we arrived at the higher access point, the water was only a puddle containing black

suspended matter, but there was a line on the mountain wall about 2 metres higher, showing were the water would be during the rainy season; the mountain wall cleans the water, John told me. The lower access point, inside the cave, had slightly milky water, about 75 cm deep at the entrance point, and belonged to a wide natural cistern carrying water all year. When we went back, a trap at the edge of the path indicated how Ṣalāḥ hunted small rodents; a little stick was stuck in the ground, with a snare made out of plastic line.

Another tour led me to GIṚIIR, which was still used as an everyday source of water. Two ways led there; an upper path over rocky ground, which was used by goats and cattle, and a lower one, which went parallel to the mountain, inside of which a large, but inaccessible cave system connects GIṚIIR and GELṚÁ. When we arrived, we saw a woman taking water from a pond that extended out in front of a large entrance to a cave, only a few steps from a watering place for livestock. Inside the cave, after winding and climbing, another cistern appeared on the right, and a third to the left.

A path over stones and grass then led to a platform. Here three stones surrounding a patch of ashes and the discarded plastic wrappings from milk powder spoke of the excursions of youths from nearby Kubang, whose water yard could be seen from the path. Twelve access points were distinguished here, so my guide Muḥayy al-Dīn said, and the more water disappears into the mountain during the dry season, the higher one has to climb. Inside the caves, under low ceilings and in tight space, water was taken from the shallow pools using bowls made from halves of the shells of baobab tree fruits, or *kongles*. After a 16-litre plastic container was filled, it was either handed along a human chain until it reached the lower regions of the cave, or else one individual had to climb down slowly, step by step, lugging the heavy load.

GIṚIIR had been the major source of water throughout the war, not only for Abol, but also for people from neighbouring Kubang, Leira, and Shawaya, who had found refuge nearby. There were still ruins of abandoned houses, one with a little sorghum stored inside. They reminded me that the settlement history here was full of cycles of uphill and downhill movements, and migration forth and back.

About a year before, I had talked with three men who had spent their childhood in the hills, then moved down, migrated to Khartoum and now were considering coming back to Abol again.[179] They remembered their years in Abol as a succession of up-down movements. The first downhill settlement was said to have been around 1971, remembered due to some individuals building their new homes down in the valleys after marriage. These movements took place until about 1989, when the war started to affect the village and most went either to northern towns or up into the mountains once again.

They estimated today's population to be only about 120. Reduced by years of war and emigration, the continued existence of even those remaining few was repeatedly threatened. When the cessation of violent hostilities prompted some to risk building their houses in the valley once more, they were soon confronted with the problem of lack of water.[180]

One of the three men, my host Yussif, remembered that he came back to Abol in 2002 to find only seven families left there. He suggested to them that they should move either to Kubang or to Heiban, but they refused and told him their plan to build a well, without tools if necessary. Yussif collected money from migrants in the towns and abroad, and brought tools from Khartoum. When they failed to construct a reliable structure, the organization NCA stepped in and supported them.[181] This effort brought them a well, which, however, had such a low level during the daytime in the dry season that women had to fetch water from it late at night or early in the mornings. Again some time later, UNICEF funded a manual water pump, which worked well at first, but began then to give yellowish water with a bad smell, and later reddish brown water with a metallic taste.

Every year, these concerns diminish temporarily with the heavy rains beginning in May or June. During the rainy season, the net of watercourses running through the village are filled with water, to such an extent that trees in riverbeds that are dry for much of the year sometimes have dead branches and leaves caught in their own branches up to 2 metres from the ground, speaking of the huge volume of water that has flown over them during the rains. Cultivated terraces on the hillsides are flooded, and when the water level subsided, leaving the soil still moist, but not wet, some small vegetable gardens in the riverbeds flourish with onions, tomatoes, and sweet potatoes, and mango trees blossom. Only a few people use the drain water from the pump and water scooped from the well to keep gardens all through the dry season.

Where the two major watercourses in the village meet, one of several churches stands in an elevated position, on a hill near the road to Heiban, at the same place as a ruined church from the colonial period. The new church was financed by the American organization Samaritan's Purse, and became a popular meeting place for men, especially for little slaughtering feasts. It is the last of several public buildings around the main road: a primary school built in cooperation with UNICEF, another stone-and-grass-roof church aside another Samaritan's Purse-financed construction site, and the market, with an unfinished women's and community centre.

The market consisted of only two shops. One has only a few shelves and an electrical mill belonging to a trader from Heiban. The other consisted of sacks and boxes, and had only recently been changed from a wooden to a brick construction. Similarly, most buildings in the

village were roundhouses of piled stones, but some people had begun to build with bricks, and a few even with cement.

But this settlement is only the lower part of Abol, also called *ḥayy* (quarter) Qamr, and it is not the place where most of its population grew up. With Yussif I followed a route near the church which was used every day by some school children coming from *ḥayy* Naṣra. There, about 5 km from the school, around 300 Atoro had been living since the war. According to Yussif, the quarter was named after a church that a priest had established there during the later years of the war, in about the year 2000. The Atoro, according to their present *šayḫ*, had previously lived in Heiban since the mid-1970s, but moved to Naṣra in 1989, where they established house farms with sorghum and sesame.

Before these migrations this area was called GÚBƐ and had been the main settlement of the parents and grandparents of the current adult generation, who had lived here from the end of the 1940s until the end of the 1970s, and then moved downhill in the direction of Heiban. Near Naṣra there is also a wide valley called ŋÍLMI, which had previously been, and partly still was, a place where children and youths spend their leisure time. People still used the place to water cattle and scoop water for their homes. However, more stones filled the all-year riverbed in this area, and pollution by plastic bags had set in.

But ŋÍLMI is not only one of the most fertile areas; it had also been a direct connection to several communities of Atoro and Shawaya. In contrast, today roads have become the main form of connection between villages, and young men from the region become known through their constant movement as lorry drivers. Accordingly, goods needed are expected to be brought on those roads, rather than over the hill.

3B: Organization of timespace

The following mapping of water resources in the lower part of Abol is an attempt to integrate residents' perceptions with GPS measurements to form a complementary visualization. A second stage of this mapping relates the water resources' geophysical positions to the labour time necessary for the transport from the source to users' households. This complementary mapping is thus intended to act as an instrumental background to the further discussion, and is not intended either as a normative demonstration or argument as to what may be considered 'better' visualization techniques, or as a particularly sophisticated form of data production.[182]

The mapping of available surface water resources was attempted by recording the points of actual access and the main watercourses per GPS device; the latter were walked over and thereby recorded. The redrawing of these recorded points and lines was done in two steps: first on graph paper with 1 millimetre representing 10 decimal minutes,[183] the second into a digital vector graphics editor with a millimetre grid.[184] The drawn maps develop a geophysical visualization step by step.

Figure 2B.01 shows the main road, around which the central buildings of Lower Abol are positioned. In the section north of the road, the central points of access are water outflows from the mountains (GƐƐṚÁ, GIṚIIR, NḊÍ, GINYÚ). The water sources in the mountains occupy relatively stable spatial positions, but the temporal availability shows strong seasonal fluctuations: At the time of access (February), the water level at the upper access point of GƐƐṚÁ was only about half a metre, about 2 metres below its rain season height, was very difficult to reach and contained significant amounts of visible particles. The informants asserted that the water would clear up later, but because of its high and difficult position, it was not usually used by the village community. An all-season source, GIṚIIR, showed the same temporality. Although there was still water at the lowest level in February, there were accounts of a successive 'redrawing' of water into the mountain. Twelve different caves that contained pools of water were identified, distinguished not only by location but also by the increasing difficulty required to access them, especially with the plastic barrels used for transport.

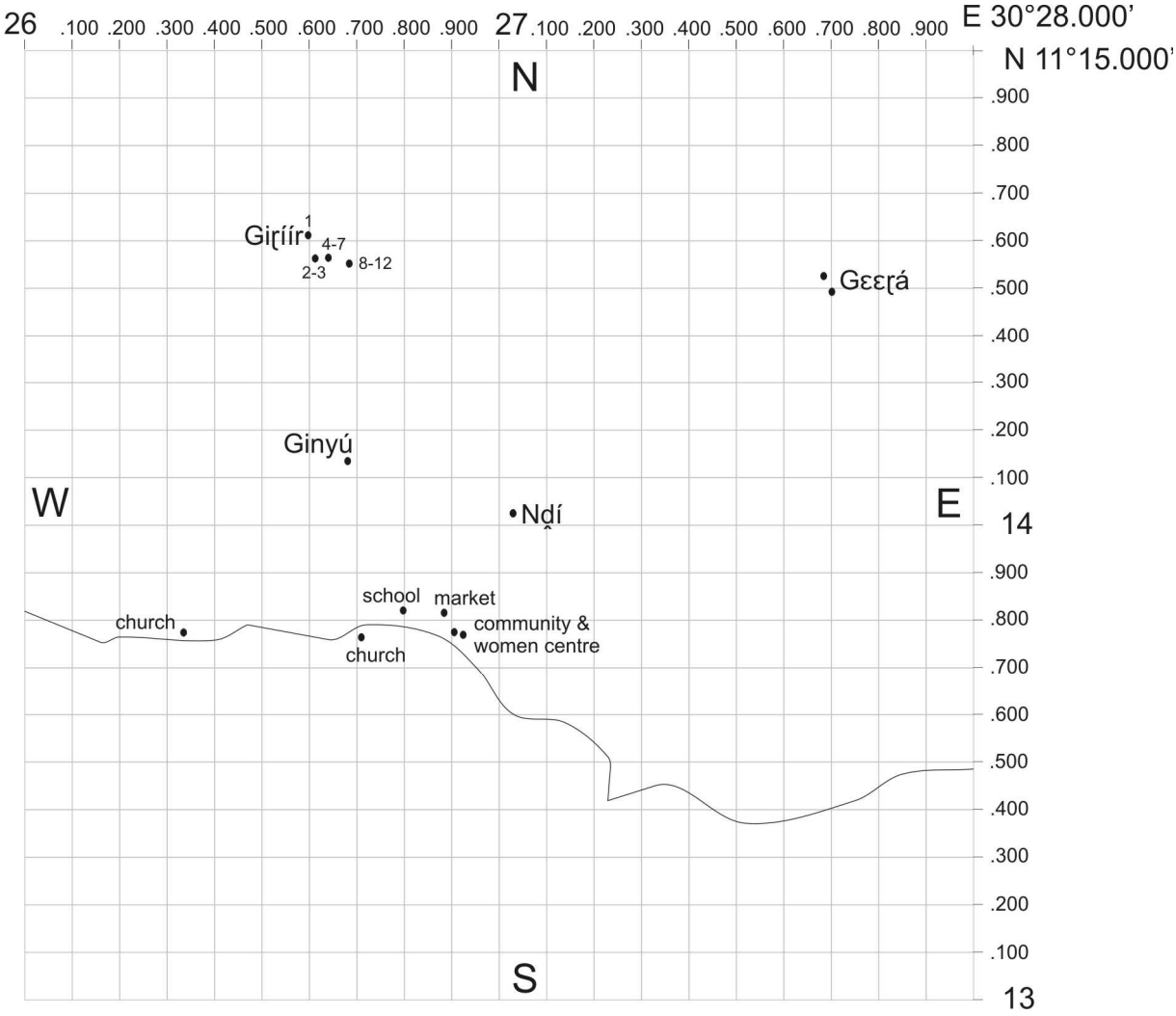


Figure 2B.01: Lower Abol, main public buildings, main access points for water from springs and caves (Source: own fieldwork).

The importance of the places at which water is accessible from the mountains, is also reflected in the simple fact that they are named, like NḌÍ, a spring filling a whole basin during the rainy season, and the easily accessible GINYÚ, where three watercourses meet. Figure 2B.02 shows these seasonal watercourses, with broken lines indicating the temporality of water availability. In February 2010, all these watercourses were already dry.

Names are also given to the confluences of tributaries, such as LAMRÚŋ, where the southward watercourse splits, or GABLƐ́, where the water coming from GINYÚ meets the big watercourse that flows down to Kubang. Hundreds of small watercourses exist apart from these major ones, both downhill and uphill, but their complexity and their annually shifting positions necessitate enormous effort to map, and in any case their temporality makes the production of a 'final' map impossible.

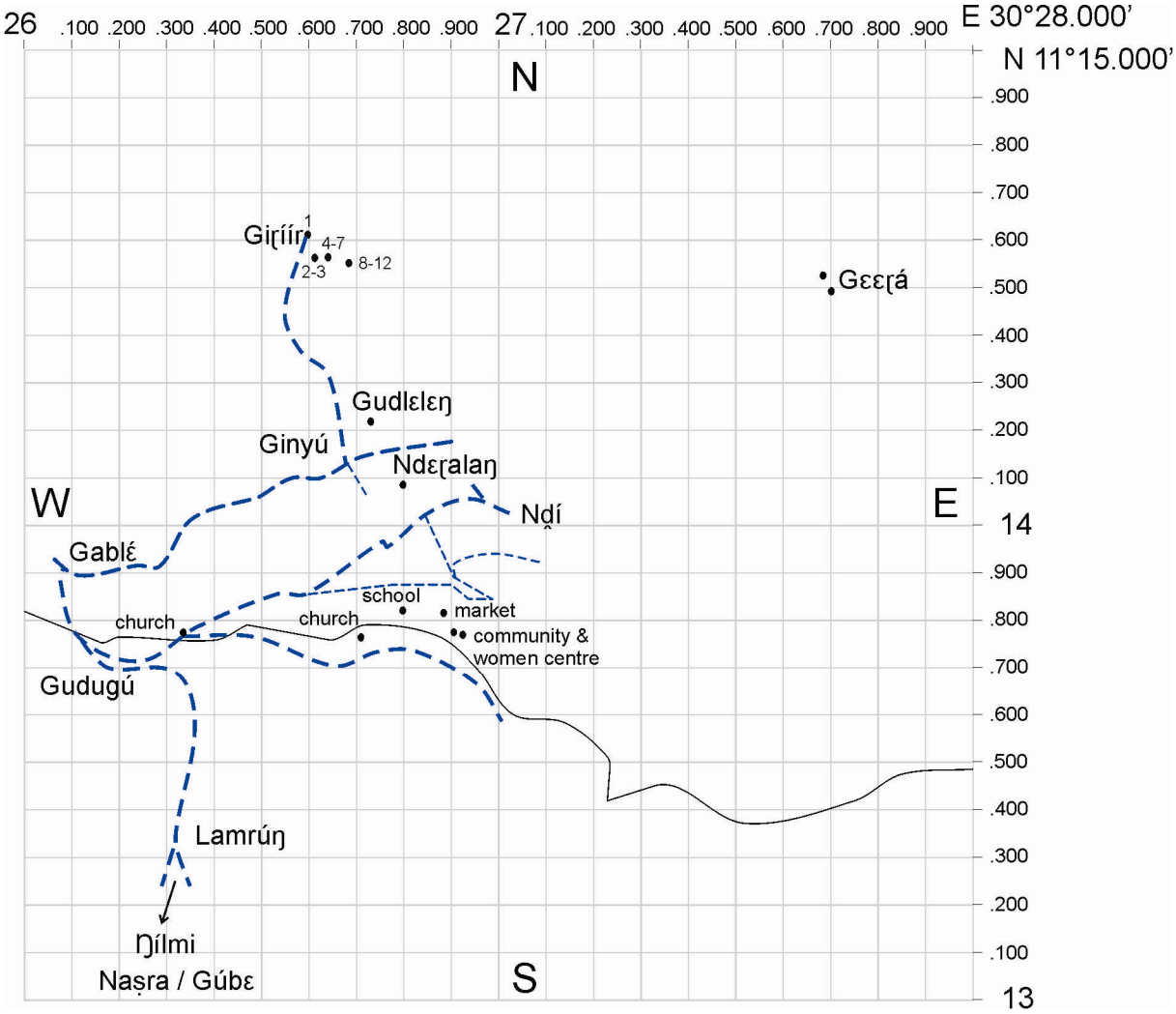


Figure 2B.02: Lower Abol, main seasonal watercourses (Source: own fieldwork).

Apart from this surface water, several efforts had made groundwater available through a well and via a manual water pump. Figure 2B.03 shows the resulting sources for water, highlighted with bold characters. An assessment of the effort necessary to bring water from these sources to homes must take many variables into account. Abol has a very stretched and scattered settlement structure; the distance between GIṚIIR and LAMRÚŊ is 2.5 km as the crow flies, and the estimated population lives distributed in a rough circle with this line as its approximate diameter (about 5 km², i.e. the population density is about 24 inhabitants per km²). Therefore the distance to different water sources differs considerably from household to household, and, accordingly, so do the individual perspectives on water availability.

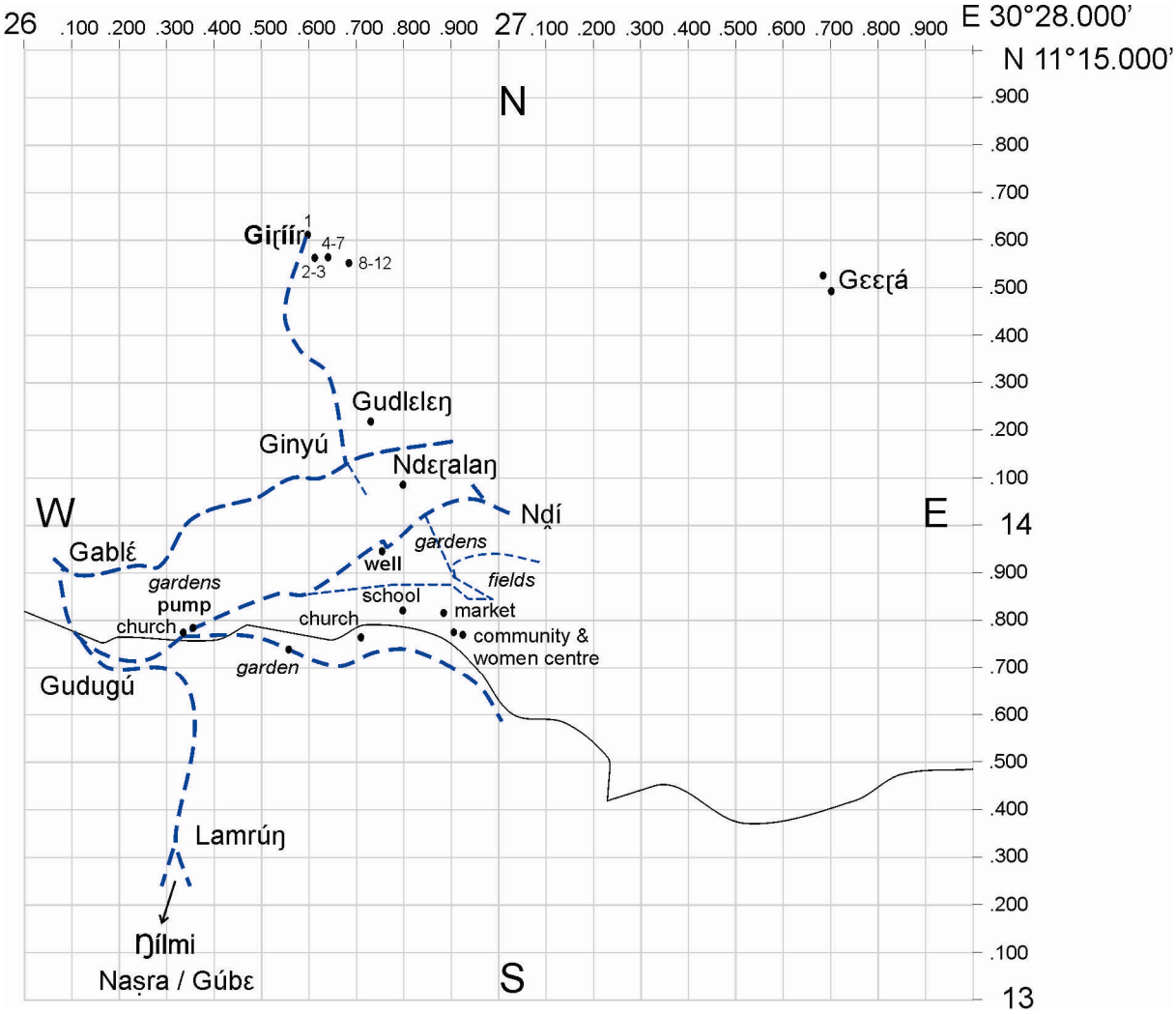


Figure 2B.03: Lower Abol, main sources of water (Source: own fieldwork).

The organization and accessibility of the water sources also has an influence on the time factor. While GIṚIIR can be accessed by several persons at the same time, the shallow water at the higher levels can only be scooped with a bowl. A similar problem is encountered during the daytime at the well, when only a few centimetres of water are left, and filling a large container by using smaller vessels with a capacity of about 0.5 litres takes up to two hours. The water pump limits access to one person at a time, which produces long queues, unless access is distributed over the day.

To deepen these observations, three households were assessed briefly during my stay in Abol concerning their present daily water consumption and the division of labour used to fetch it.

The house of my host was approximately in the middle of a line between the school and LAMRÚŊ; in addition to him, the household consisted of his sister with her child and his aged mother. His sister was in charge of bringing water. She rose regularly before 6 a.m. to go to the well to fill a single 16-litre container of drinking water, which took about 30 minutes. In

case she arrived too late and too many people were already there, she returned again after sunrise, or else went to GIṚIIR, a 1.5 hour trip. At midday and in the afternoon she went to the pump, normally for 2-3 containers (32-48 litres), but on washing days for 4-5 containers (64-80 litres); about 20 minutes for each trip, not including waiting time. This means that the four-person household used daily about 48-64 litres, which took at least 70-90 minutes to bring to the house, or up to 2 hours, including waiting times.

Another household consisted of a young husband and wife, and five children. Only the eldest, 12-year old daughter was able to help the wife in bringing water; the next eldest went only if the eldest daughter was ill. In the young wife's perception, the water situation was much worse than in her parents' home in Kubang, which is without significant shortage of water. She went at midnight or at about 4:00 am to collect 1-2 containers of drinking water from the well, if there was enough. During the day, she went to the pump for 3-4 containers on normal days, or up to nine containers when washing, although the assistance of her daughter on the latter occasions brought it down to 5-6 times. Their closeness to the pump meant the walking time was only about 5 minutes, while it took about 10 minutes to reach the well, which meant at least 1 hour spent each day, excluding waiting time. Because of the repeated trips, the potential accumulation of waiting times was significant and could stretch the total time taken to more than 2 hours.

While these two women were at the same time the centre of household work, a third example shows efforts exceeding the immediate necessities of one household. Another young woman brought water exclusively from GIṚIIR, 20 minutes' walking time from her household where she lived with her husband, his mother, and one child. Pigs inside their home added a significant additional burden to their personal water consumption. She avoided the closer well due to the presence of particles she perceived as 'black bacteria' and brought water not only for her own household, but also for neighbours and relatives, once even for me, a guest living about 40 minutes from GIṚIIR. She went up to 8 times each day, thus spending more than 5 hours fetching water.

In other instances, these efforts outside the own household were commercialized. The market's electrical mill, for instance, required a constant supply of water, which was brought by women paid to do so. The observed case was of a woman paid 5 SDG for twelve containers, where one journey from the market to the pump and back took up to 30 minutes, resulting in about 6hours working time. In terms of market prices, this labour bought the equivalent of ten bars of soap, which sufficed for about five washing days.

While this reflects the situation of most households in Abol, there were socio-economic differences that influence the access to labour-saving devices. Some of these differences were small, as with some men who brought water by bicycle from Heiban or Kubang, though

some were larger: One former urban settler, for instance, could use his brother's lorry to bring water to his home from Heiban.

In conclusion, the variables determining the accessibility of water for different households are manifold: Physical abilities determine the time needed to fill the vessels, to move with a 16-litre container on one's head, to take breaks and to recover one's breath. Access to vehicles changes the amount water it is possible to carry at one time and the speed with which it can be moved between source and home. The social environment of this labour process can render it either a necessity, to be finished as soon as possible, or an important part of social life and social communication. One's personal attitude towards one's own and others' needs can also influence how much one engages in this activity.

Socio-economic differences played a big role with regard to storage facilities, too. Most households had clay jars (*azyār*, sg. *zīī*), which stored about 40 litres of water. Only those with money saved from urban employment could afford larger plastic containers for storages, like former oil barrels or 100 to 150-litre plastic containers, which are much used in the towns, but were evident in Abol only on the new church construction site, owned by Samaritan's Purse. There were no organized efforts to create communal storage facilities.

When the water from the manual pump began to smell, discussions about water quality began, in which the differences between normative considerations and practices grew more complex.[185] The different status of water quality-related considerations was not limited to the pump water, but also partly included other details: the bacterial situation of standing surface water, the partly uncovered storage facilities at home, the former usage of some plastic containers for petrol, etc.

The acknowledgment of the presence of 'black bacteria' points to an increasing distinction between 'good' and 'bad' water, which is especially heightened among former urban settlers. But the extent to which water quality becomes an issue depends on many variables, which not only include normative, but also operational factors. Even if the existence of a health risk from a certain kind of water is acknowledged, this acknowledgement must still be linked to an accessible diversity of options to allow the organization of an alternative daily routine. A complete reorganization of the daily water transport routine, for instance, must be motivated by the presence of a feasible and attractive alternative. The tight net of priorities woven around everyday tasks such as fetching water may allow the situational consideration of alternatives, but prevents any manifestation of alternatives other than through systematic compensation. In conclusion, this compensation has to come from a new supply system that allows the reorganizing of other tasks and that establishes new sustainable connections between source and consumer.

3C: Safe water

The major reference document for the prospective goals of the international development arena, the Millennium Development Goals, defines MDG 7, target 10 as “halving by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation”, with the “proportion of population using an improved drinking water source” to be used as an indicator of success.[186] The MDG target is defined by temporal, spatial and energetic elements: the continuity (‘sustainable’) of availability (‘access’) of a resource (‘water’) supporting, not harming the human energy balance (i.e. health – ‘safe drinking’). Because ‘improvement’ implies the movement toward a greater realization of these elements, this suggests the availability of ready answers to the questions ‘What is enough good water?’ (quantity / quality) - ‘How to find it?’– ‘How to get it?’– ‘How to use it?’

The usual recommendations for ‘improved water sources’ discourage the direct collection of drinking water from open areas of water. Seasonal fluctuations of rainfall would seem, therefore, to constitute a peripheral aspect of the above issues. But the indirect impact of precipitation on groundwater levels indirectly also makes it an issue due to the reliance on groundwater of so-called improved sources such as water pumps or water yards, quite apart from the dependence of vegetation on appropriate rainfall in order to grow. In any case, the future occurrence of rainfall is thus of essential importance, and has become a major field of climate change studies, which, however, have not necessarily done much to increase certainty:

> A recent study by the OECD’s Sahel and West Africa Club concludes that existing climate models are in significant disagreement over projected changes in the region, particularly over the general trend for precipitation – whether the region will become wetter or dryer in the coming years (UNEP 2011: 29).[187]

In contrast to issues such as food security, which are regarded as depending to a significant degree on human actions, fluctuations in rainfall are considered as man-made only in long-term models of climate change. The prediction of seasonal rainfall thus seems to be about reading ‘the signs of nature’ correctly. Viewed in this light, the differences between projections mentioned above seem to stem from misunderstandings or misreadings.

A conclusion on this matter that one comprehensive study of Sudan’s environmental situation by UNEP reached – for North and South Kordofan – was that “rainfall is becoming increasingly scarce and/or unreliable in Sudan’s Sahel belt, and this trend is likely to continue“ (UNEP 2007: 61). What makes projections contradictory in one case and likely in the other?

The OECD study interpreted uncertainty as being the result of limited data. It showed that even the comparison of two models, the AR4 projections of the Intergovernmental Panel on Climate Change (IPCC) and the projections of the Met Office Hadley Centre U.K., suggested contrary developments of precipitation in central and east Sahel, one decreasing and the other increasing. The time frames used by both models were data collected between 1961-1990,[188] with the forecasts projected between 2041 and 2070. The study had to conclude that "[o]ur limited understanding of the processes governing tropical rainfall doesn't allow us to make any robust climate prediction in the Sahel as a whole" (Met Office Hadley Centre 2010: 13). It raises hopes, however, that a new simulation project, called ENSEMBLES, will provide a new source of data that "may potentially help to reduce the uncertainty in model prediction over the region" (Met Office Hadley Centre 2010: 16).

UNEP based its projections on *Sudan's First National Communications under the United Nations Framework Convention on Climate Change* (GoS 2003a, GoS 2003b), which had concentrated on studies of North and South Kordofan. The climate scenarios in these studies were conducted using a specific piece of software (MAGICC/SCENGEN version 2.4)[189] that forced certain parameters on the users, not only in terms of the time frame, but also that of the models to be used. Because of this, the baseline period, for instance, had to be set from 1961 to 1990 (GoS 2003a: 36). Three of the so-called General Circulation Models (GCM) available through the software were used to create projections for the 'milestone years' 2030 and 2060, another parameter dictated by the software (GoS 2003a: 37). Finally, the guiding scenario for emissions was provided as an option in the software; IPCC's IS92a was chosen (GoS 2003a: 37).[190]

Appropriate data was available only for five stations, namely El Obeid, En Nahud, Rashad, Kadugli, and Babanusa (GoS 2003a: 36). According to the HADCM2 model,[191] El Obeid and En Nahud showed little change, or a slight increase in rainfall, while the results for Rashad, Kadugli and Babanusa showed a constant decrease during the summer months, for June with values up to -3.4% in 2030 and up to -6.1% in 2060. With the BMRC model,[192] positive values of El Obeid and En Nahud went up to 20% in August 2060, while the August values of Rashad, Kadugli and Babanusa were the most strikingly negative, with up to -17.8% in 2060. Finally, the GFDL model[193] projections disagreed to a large extent with the other two, showing negative values for July 2030 and 2060 in El Obeid and En Nahud, small negative and positive values for July 2030 and 2060 in the other three locations, but high positive values throughout August, up to 22.9% (GoS 2003b: 11-21). Nevertheless, these values were interpreted as a convergence of 'likely' predictions in the UNEP report.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
El Obeid 2030												
HADCM2	0.0	0.0	0.0	-0.1	-0.4	0.0	**0.4**	0.4	**2.4**	1.9	0.0	0.0
BMRC	0.0	0.0	0.0	0.1	0.2	0.1	**6.3**	8.8	**6.4**	1.3	0.1	0.0
GFDL	0.0	0.0	0.0	0.1	0.0	-0.7	**-3.7**	11.3	**-5.5**	3.2	0.0	0.0
El Obeid 2060												
HADCM2	0.0	0.0	0.0	-0.1	-0.6	0.0	**0.7**	0.7	**4.4**	3.4	0.1	0.0
BMRC	0.0	0.0	0.0	0.1	0.3	0.1	**11.3**	15.7	**11.4**	2.3	0.1	0.0
GFDL	0.0	0.0	0.0	0.1	-0.1	-1.2	**-6.7**	20.2	**-9.8**	5.7	0.1	0.0
En Nahud 2030												
HADCM2	0.0	0.0	0.0	-0.1	-0.5	-0.1	**0.5**	0.5	**1.8**	1.9	0.0	0.0
BMRC	0.0	0.0	0.0	0.1	0.3	-0.6	**7.9**	11.2	**6.1**	0.9	0.0	0.0
GFDL	0.0	0.0	0.0	0.1	-0.1	-1.3	**-6.1**	12.8	**-3.6**	3.2	0.0	0.0
En Nahud 2060												
HADCM2	0.0	0.0	0.0	-0.2	-1.0	-0.2	**0.9**	0.9	**3.2**	3.4	0.0	0.0
BMRC	0.0	0.0	0.1	0.1	0.5	-1.0	**14.3**	20.0	**10.9**	1.6	0.0	0.0
GFDL	0.0	0.0	0.0	0.2	-0.2	-2.3	**-10.9**	22.9	**-6.5**	5.7	0.0	0.0
Rashad 2030												
HADCM2	0.0	0.0	0.1	0.2	0.5	-2.0	-1.5	**-0.1**	-1.9	0.2	0.1	0.0
BMRC	0.0	0.0	0.0	0.0	-0.1	-0.6	-3.4	**-6.4**	-2.1	5.4	0.1	0.0
GFDL	0.0	0.0	0.1	-0.1	0.4	-1.2	-0.6	**4.2**	-0.4	3.4	0.1	0.0
Rashad 2060												
HADCM2	0.0	0.0	0.1	0.2	0.5	-3.5	-2.7	**-0.2**	-3.4	0.4	0.2	0.1
BMRC	0.0	0.0	0.1	0.0	-0.3	-1.1	-6.2	**-11.5**	-3.8	9.6	0.2	0.0
GFDL	0.0	0.0	0.2	-0.1	0.7	-2.1	-1.0	**7.6**	-0.8	6.2	0.2	0.0
Kadugli 2030												
HADCM2	0.0	0.0	0.1	0.2	0.5	-2.7	-1.9	**-0.3**	-1.8	0.3	0.1	0.0
BMRC	0.0	0.0	0.1	0.0	-0.2	-0.7	-4.3	**-8.8**	-2.0	5.7	0.1	0.0
GFDL	0.0	0.0	0.3	-0.1	0.7	-1.6	-0.7	**5.5**	-0.4	3.6	0.1	0.0
Kadugli 2060												
HADCM2	0.0	0.0	0.2	0.4	0.9	-4.8	-3.3	**-0.5**	-3.3	0.5	0.2	0.0
BMRC	0.0	0.0	0.2	-0.1	-0.4	-1.4	-7.6	**-15.6**	-3.6	10.1	0.2	0.0
GFDL	0.0	0.0	0.6	-0.2	1.2	-2.9	-1.2	**9.9**	-0.7	6.4	0.2	0.0
Babanusa 2030												
HADCM2	0.0	0.0	0.0	0.2	0.3	-3.4	-3.1	**-1.2**	-3.3	-0.2	0.0	0.0
BMRC	0.0	0.0	0.0	-0.1	-0.1	-0.1	-5.5	**-10.0**	-4.2	2.5	0.0	0.0
GFDL	0.0	0.0	0.1	-0.2	0.0	-1.7	0.1	**3.4**	-0.2	1.3	0.0	0.0
Babanusa 2060												
HADCM2	0.0	0.0	0.1	0.4	0.5	-6.1	-5.5	**-2.1**	-6.0	-0.3	0.0	0.0
BMRC	0.0	0.0	0.1	-0.1	-0.2	-0.2	-9.9	**-17.8**	-7.5	4.5	0.0	0.0
GFDL	0.0	0.0	0.2	-0.3	0.0	-3.1	0.3	**6.1**	-0.3	2.4	0.0	0.0

Table 3C.01: Climate change-induced precipitation in 2030 and 2060 in Kordofan, projections with HADCM2, BMRC, and GFDL models (Source: GoS 2003b: 11-21; major deviations highlighted by author).

Still, the average annual variation of precipitation was calculated as being between 65% and 15% in North and South Kordofan, which reflects a significant potential for occasional droughts (UNEP 2007: 59). The time frame of the projections is thus crucial information regarding the specific degree of uncertainty that can or cannot be reduced by them. For annual fluctuations, the central category of the analysis is not long-term climate change, but the immediate vulnerability of specific communities: “It is now generally recognized that while the natural phenomena causing disasters are in most cases beyond human control, the vulnerability (of affected communities) is generally a result of human activity. This is particularly clear in Sudan.“ (UNEP 2007: 67).

UNEP’s 2007 report remains the most complete assessment of Sudan’s environmental situation. Concerning water resources, it notes that “Sudan suffers from a chronic shortage of freshwater overall. In addition, water distribution is extremely unequal, with major regional, seasonal and annual variations. Underlying this variability is a creeping trend towards generally drier conditions” (UNEP 2007: 59).

This temporal variability is a crucial factor that makes casting annual predictions a particularly difficult task in Sudan, and suggests that even improved projections will have to work against an increasingly difficult situation caused by factors outside the realm of human actions. It would also seem to indicate a clear reason for the insufficiency of water resources, but the study shows that it is not the general availability of water per se that makes drinking water a limited resource. In fact, basic functions of public water administration are not fulfilled, but rather have been substituted by misguidedly large projects with promising advertisements and attractive side benefits. Several sophisticated models were used in the quoted governmental study to analyze data, which came from only five stations in the whole of North and South Kordofan. Statements about villages such as Lwere and Atmur had to be based on hearsay, “anecdotal reports of declining groundwater levels that require scientific verification“ (UNEP 2007: 243).[194]

The two basic recommendations of the report were therefore “to strengthen national capacity for water resources management, and to introduce the philosophy and practical aspects of Integrated Water Resource Management (IWRM) to Sudan” (UNEP 2007: 248). In other words, UNEP’s report proposed to improve information about resources and needs, but to influence, too, the understanding of both to promote “equity, public participation and accountability” (UNEP 2007: 248).

3D: Water supply

In Sudan, the Ministry of Irrigation and Water Resources is responsible for the overall task of securing sufficient drinking water for the citizens, reporting to the Council of Ministers. A Sudan News Agency press release reported on such a session on 10 February 2011.[195] The Minister's figures for access to drinking water in rural areas reported an increase from 30% in 2002 to 73% in 2010. These figures bluntly contradicted a trend reported by the same ministry on the Japan-Arab Economy Forum in Tokyo only three months before:

Year	Area	Access to safe drinking water (%)		
		Total	Urban	Rural
1990		64	85	57
2000		59.8	79.2	47.1
2006	NS	58.7	69.4	51.6
	SS	48.3		
	National	56.1		
2015	NS[196]	82	93	79

Table 3D.01: Access to safe drinking water in Sudan (Source: Extracted from a presentation in the 2nd Japan-Arab Economy Forum, 11 December 2010; <http://www.jccme.or.jp/english/jaef2_overview/meeting/session3/workshop2/14_w2.pdf>, Page 9, retrieved 13-05-2011).

In spite of a clear negative trend in access to safe drinking water in the urban areas and unsteady numbers for the rural areas, an inexplicable optimism projects a complete turnaround in only nine years, perhaps to claim that the Millennium Development Goal will be reached.

Another question that requires an explanation is that of the basis for these figures. A database for data related to the availability of drinking water was established in 1997 by the National Water Corporation (NWC) in coordination with UNICEF. According to an assessment of the database in 2006, a network of Public Water Corporations (PWC) throughout the various states was required to create annual consumer confidence reports. Long histories of institutional data collection, however, could only be found in the central lab of the Khartoum State Water Corporation, which had been collecting water quality data from six stations along the Nile in the vicinity of the capital since 1964 (Mirghani 2006: 26).[197] No such data collection had been performed in most of Sudan's rural areas.

This reflects the situation of water information management in general, and in so doing also suggests certain implicit priorities in its development. This claim must be qualified, however. In South Kordofan, for instance, the availability of water has been one of the central

administrative and political issues, in terms of both accessibility and distribution.[198] The Strategic Map for South Kordofan (HSC 2008a) quotes a 25 Year Strategy (2003-2027), which describes rural water provision as an issue of "top priority" (HSC 2008a: 83). After an analysis of meteorological data from three stations, Babanusa, Kadugli, and Rashad, the importance of water for agriculture is stressed. The length of growth season (LGS), according to the argument, is calculated by recording the times at which half of the evaporation normal for the climate, the so-called Reference, or Potential Evapotranspiration (PET in cm/month), is equal to the rainfall. The times at which these two values coincide mark the beginning and the end of the season (HSC 2008a: 10).

Considering the importance of rainfall distribution, one might expect the recommendation to be made that considerable effort should be put into increasing the number of measurement points, especially in mountainous areas with high rainfall variability; yet the improvement of data availability is mentioned only once, as the "[e]stablishment of a database as a planning and management tool" (HSC 2008a: 86), which concerns only the management aspect of the undertaking, and not the collection of data. If no change in the data collection system is planned, on what kind of system will future analyses be based?

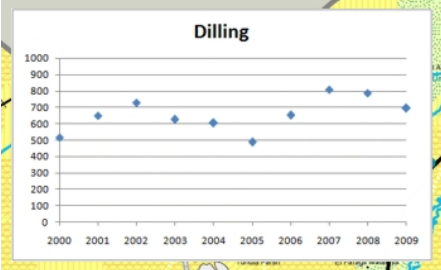
Station	2000	2001	2002	2003	2004[199]	2005	2006	2007	2008	2009
Kadugli	526.9	418	452.5	642.5	771.5	630.1	813.8	814.2	690.5	623.7
Al-Rashad		550	485.1	396.7	556.4	537.1	604.2	904.3		594.6
Dilling	518	648.2	727.5	625.1	603.2	486.9	652	807	787.5	694
Habila	375.5	489.8	695	634	513.5	584	631	997.5		
Al-Abbasiyya	459.5	589	541.5	565	532.5	360.7	733.8	931.9		
Abu Jibayha	507	638	526	812	643.4	656.5	618.1	757.1	500.9	565.5
Al-Tartar	414.7	711.9	509.5	456	414	427.4		557.4		
Al-Maṭaymar		838.5	614	739						
Abu Karshula	287.7	312	379.6	528.7	516.5		634	496.1		
Talodi	503	650	690.5	867	622.5	566.5	778.6	806.2		
Kalogi		627.5	711	683	758.5	602.2				
Umm Berembeita		619.5	529	470	498	538.1	538.5	497.4		
Abu Nuwara						564.1				
Wakra						291.9				
Habila Farm						556				
Al-Liri						805				
Tajmala						393.3				
Al-Maqniṣ							478	788		

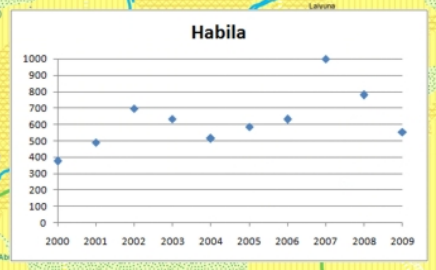
Table 3D.02: Rainfall in agricultural areas, in mm (Source: Ministry of Agriculture and Forestry South Kordofan, 2010).

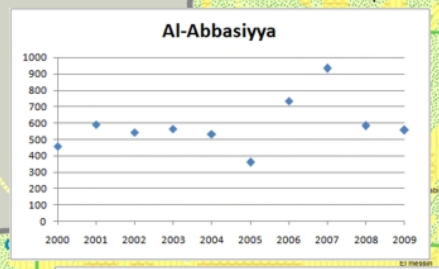
Northern Kordofan State

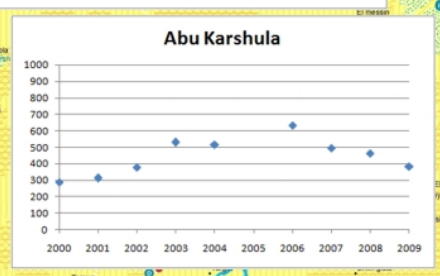
Unity State

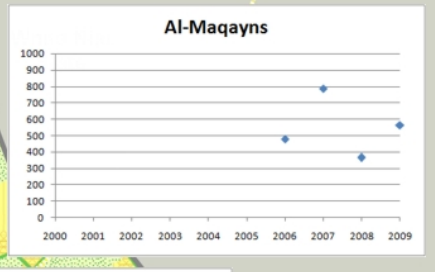
Upper Nile State

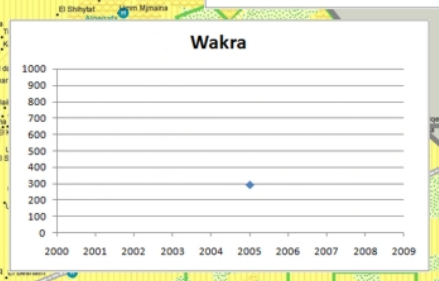


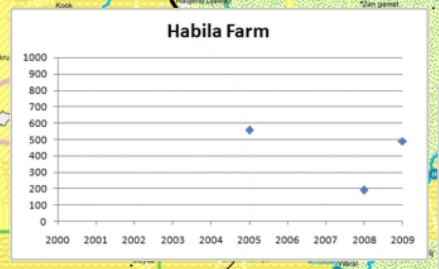


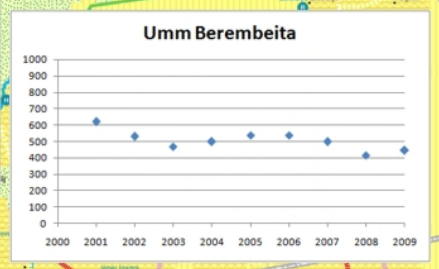


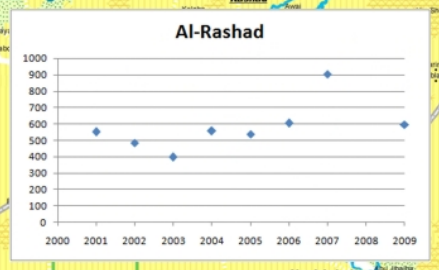


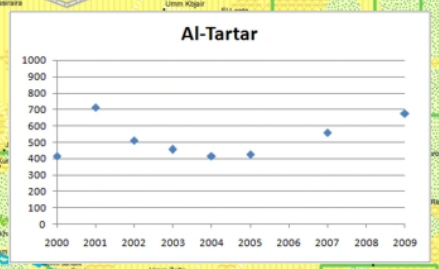


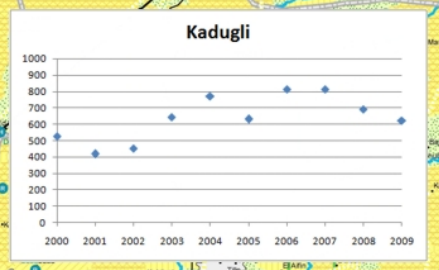


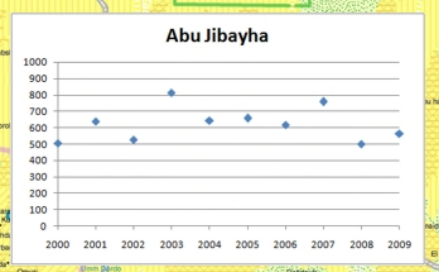


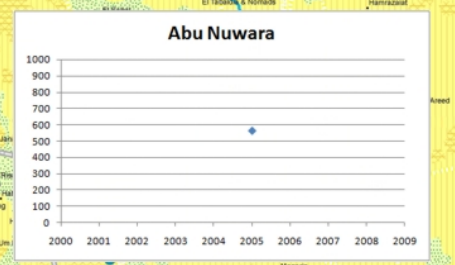


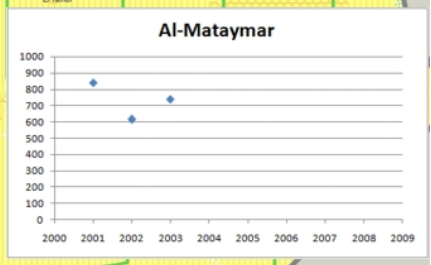


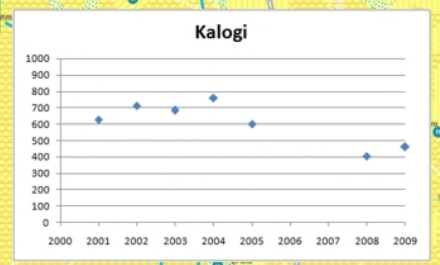


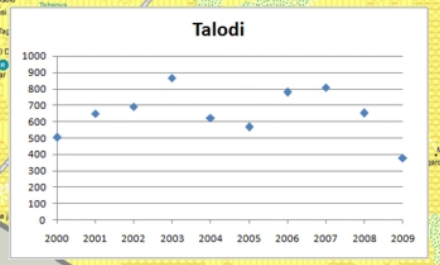












The documentation of rainfall has been extensive since the 1960s, and has been presented in several studies about changes in rainfall.[200] However, this documentation has concentrated on stations in Kadugli and Al-Rashad. A more extended system of data collection evolved in South Kordofan's Ministry of Agriculture and Forestry after 2005,[201] which again shows a specific pattern of prioritization. When asked to supply meteorological data, the Department of Statistics in the Ministry of Agriculture and Forestry provided the numbers shown in table 3D.02, aggregated from monthly measurements.

When projected onto a UNDP map showing areas of planned mechanized farming, several implications of these numbers become evident. Firstly, the areas in western South Kordofan, especially Babanusa, administratively speaking form part of South Kordofan, but they are not part of the Ministry of Agriculture's data collection system. Secondly, the meteorological stations are close to, or even named after mechanized farms, while there is a lack of any measurements for the central areas of South Kordofan. Thirdly, several attempts to establish new stations in 2005 failed to stabilize, and 2008 and 2009 witnessed a gap in data, even from several of the established stations. All in all, the data collection system seems to be far from free of strategic biases and instabilities.

The prioritized objectives and planned steps of the 25 Year Strategy are more specific regarding the water supply to rural and war-affected areas, stressing several times that "[p]riority should be given to war displaced population in their original villages or in the new resettlement areas" (HSC 2008a: 85). The indicated institutional changes involve larger roles for NGOs and the private sector, while the State Water Corporation is to change from being a "service implementer to service controller" (HSC 2008a: 86). This is mentioned in connection with privatization, decentralization and increased responsibilities taken on by communities for their own water management and supply maintenance, in which task "the WES project[202], IFAD project, and NGOs can play a major role" (HSC 2008a: 86).

More immediately, the aim of the first 10 years was given as "rehabilitation of 700 (non operating) hand pumps, 25 water yards, and construction of 2500 new hand pumps, 100 new water yards, and 20 high capacity dams" (HSC 2008a: 87). The latter demanded, according to the plan's calculations, much higher construction and annual operation costs (6,250,000 SDG for 1,200,000 m^3/first year) than hand pumps (20,000 SDG for 2,400 m^3/year) and water yards (340,000 SDG for 86,400 m^3/first year). It also had a higher price per cubic metre produced (first year: 5.2 SDG / m^3 against 3.9 SDG / m^3forwater yards) and a longer investment payback period (2 years against 1 year for water yards), without reference to the environmental impact (HSC 2008a: 89).

Throughout the plan, only large-scale dams were specifically discussed concerning potential and preferred sites, and their use for the storage of irrigation water from major seasonal

water courses was stressed. Based on topographical surveys and feasibility studies, the "groundwater of the shallow aquifer zones should be developed gradually and in small scales", while "[e]xpansion of development should be based on monitoring results" (HSC 2008a: 90). While topography and feasibility dominate the discussion of four other sites, the text concludes with speculations about the building of a dam in El Sinut:

> Much of the earthworks could be carried out by local labour with the minimum of mechanical aids. The scheme could in fact be seen as more of a self-help project. The mean annual discharge at El Sinut is 17.7 Mm^3 and would not therefore impose a constraint on the extent of the irrigable area (HSC 2008a: 92-93).

At this point, at least two assumptions of the plan shine through: First, that the dam projects to be undertaken are of local interest, which means in the interest of a rural population that is only rehabilitating from the effects of a long war; and second, that this local interest makes local labour easily recruitable, (to the extent that the project is even portrayed more as the instigation of a self-help project than the provision of a public service): Assumed interests are connected to assumed recruitability.

3E: Water committees

The assumption that labour force can easily be recruited was also the basis of a micro-dam project intended to solve Abol's water problem.[203] But instead of meeting with clear-cut interest or disinterest, the project's recruitment attempts had to struggle with the social and economic context.

Since the cessation of violent hostilities in 2002, the first of those dwelling in the mountains had begun to come down to start a life in the plains once more. At the same time, some of those who had lived in Khartoum during the war re-contacted their families. One of them, Yussif Tiya, found only seven families remaining in Abol and suggested to them to go either to Kubang or to Heiban. But they refused and told him their plan to build a well.[204]

Yussif had worked out a list of people from Abol living in the towns and abroad. He collected 7000 – 8000 SDG from Abol migrants, in 100 SDG shares; some paid more, and some paid less than that amount. He then brought tools from Khartoum: crowbars, spades, double-headed pickaxes, stone hammers, and long ropes. For the digging, they formed five groups of five persons, who were paid as group 30 SDG per metre, or 40 SDG per metre in areas with many stones. They tried for two years to build a stable structure, but with each rainy season the walls of the well caved in.

Then they contacted the organization Norwegian Church Aid in Kauda, which began to support the project. In the beginning, the organization demanded the supply of sand, bricks and water as community contributions. This demand was refused, as water was the limited resource in the first place, and brick production required a lot of it. In the end, the people of Abol bought bricks, and NCA brought water, cement and sand from Heiban. Through the same system of working groups, a 13 metre deep shaft was dug, at which point a mason built the well. However, a large stone prevented them digging any deeper, and all efforts to break it failed.

In the end, the well was mostly used by women, who drew water from it in small plastic containers, some formerly used for oil. Ideas to improve the well were plenty: to build the outer wall of the well higher, make the bottom deeper, and cement the ground around the well because the wet clay attracted insects; to install an electric pump and replace containers and plastic ropes that poison the water; to make two separate water pipes for cattle and humans. But none of these ideas materialized.

In 2007, a further improvement occurred, when a water pump financed by UNICEF's development programme WES was installed by the North-Sudanese company Al-Wissām. But the pump also encountered in a crisis: In 2009, it began to bring up dirty, smelly water. Yussif diagnosed that it needed new pipes, and when an attempt to collect money in Abol for

the repairs failed, he sent Elias Zakariyya, a former employee of the National Water Corporation (NWC) in Khartoum who had since returned to Abol, with Yussif's own money to buy pipes from NCA's store in Kauda and install them. After the repairs, however, the water quality remained questionable, and a privately initiated test in one of NWC's labs showed the water to be non potable according to national standards.[205]

In 2008, a further hope was nourished by a micro-dam project of the organization Concern Worldwide.[206] The organization's engineers deemed a basin near the market in Abol suitable for the accumulation of water to form a permanent reservoir (*hafir*). The attempt was then made to close the basin's narrow section with sand-filled cotton sacks, and several other narrow points inside the basin were closed with stones in order to slow down the water coming from the mountains in the rainy season.

A complete closure would have been possible at one of these inner narrow parts, but the engineer said the costs would exceed the budget. Instead some community members were trained to build micro-dams in such a way that water would be collecting during the rainy season and thereby remain available until the start of the new rains. In March 2010, these dams had been constructed in the broader riverbed, which extends to Kubang and Heiban; at the final point where two tributaries met, a final larger dam was supposed to be built by the organization. But participation in the work of dam building fell lower each year, to the dissatisfaction of the organization's country director, with the result that the whole exercise was brought to an early end.

In 2009, a final initiative was begun, as a joint programme of WES and IFAD, to provide a water yard with electric pump to the community. IFAD had commissioned WES to prepare and implement this project, and inline with their regulations a quarter of the costs were collected from the community. An engineer and a drilling team arrived in Abol, but the drilling failed to reach water and the attempt was cancelled. No further delegation arrived; requests to the organizations and the government in Kadugli were fruitless, and the money collected from the community was not paid back. The situation of lack of water continued.

What happened?

Beginning

The main idea behind micro-dams is to slow down the process of water seeping and draining away in watersheds without diverting or stopping the flow of water. In Abol, most of the water accumulates in fissures between the rocks of the mountains, and flows above ground only with heavy rains around August; some watercourses then remain filled until February, in good years. This leaves the period between March and May as critical months, either interrupted by early rains or prolonged by late rains. The immediate aim of the micro-dam

project was thus to slow down the flow in order to have surface water available all over the year.

I discussed with Concern Worldwide's programme manager in the Heiban Locality, Mutwakkil, how the project got started.[207] According to its model, the organization's work always starts with the appropriate administrative unit (*markiz* or *maḥalliyya*), which defines the focus areas, specific needs, and those in need. In these places, a meeting is called by way of *buma* representatives,[208] Native Administration leaders and development committees, and there priorities are clarified. Concern Worldwide then presents its programme and suggests how it could be related to the current local priorities. For instance, a problem with water supply would be related to its micro-dam programme.

In cases where there is no development committee, a new one is formed; its members are then sent for training, after which they remain the contact persons for the programme. In the week-long training for the micro-dam programme, courses cover dam construction, environment protection, and sanitation, as well as finance and accounting.

In Abol, the *buma* representative had contacted the organization NRRDO in Kauda, in order to report the water supply problem. NRRDO agreed with Concern to hold a meeting in Abol, where a water committee with five members was formed, consisting of a chairman, general secretary, financial secretary and two regular members. These five persons were sent to Kauda for training; one of them, Ibrāhīm, recounted this experience to me.[209]

In Kauda, they told the new committee members that a successful project can take several years, and that a map was to be produced. The rules set out were as follows: The dams were supposed to be built across the whole width of the riverbeds, but not in places where there was already a bend. Many stones were to be used to build dams every 6 metres or less, especially where grass and trees, which were not to be removed, were growing in the riverbed. The dams were also supposed to be low, because the water should not push against them too strongly. The financial arrangement was to use a fund by the organization to pay 2 SDG per person per day to those contributing to the dams, from which 1 SDG is paid out and 1 SDG is put into the committee's funds.

After their return from Kauda, the five created a map and started calling for labour parties; map 2E.01 shows the situation of micro-dams in March 2010 (line A only).

Participation

According to Ibrāhīm, the labour parties worked in the first year from April 2008 on line A, moving towards the mountain; about 100 dams in all. On Tuesdays and Fridays up to 30 workers would come, though sometimes none came at all. In a meeting with the organization after the rainy season in 2008, the work was evaluated as good and the recommendation

was made to work throughout the dry season. In 2009, the work started in March; the participation was much lower, though, and some started to call the whole thing 'children's play'. Nevertheless, line B was finished during that year; about 200 further micro-dams. In August 2009, a further delegation of the organization arrived, consisting, in Ibrāhīm's eyes, entirely of new people, and only the one Sudanese member of the delegations returned several times. Numbers were written on the stones, and the final dam was promised for the following year. Until February 2010, nobody else from the organization visited.

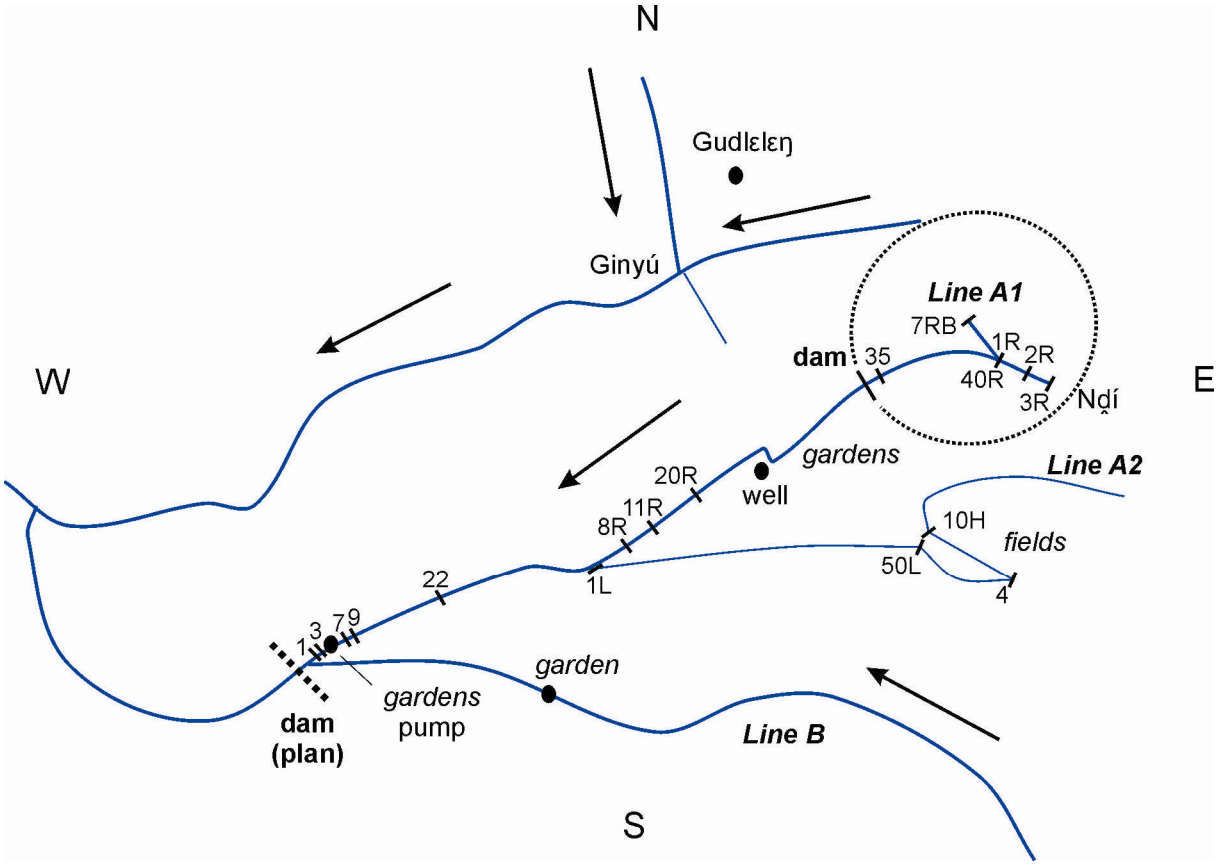


Figure 2E.01: Lower Abol, main micro-dams in March 2010 (line A), with indication of water flow direction, the planned dam and Lower Abol's basin as dotted circle (Source: own fieldwork).

On March 7th, 2010, Concern's programme manager Mutwakkil called for a crisis meeting, because work on the dams had not resumed in 2010.[210] Only a few people dropped in (and they actually wanted to attend a school assembly) and the meeting was adjourned. The following day, it was almost dark when the meeting started with about 10 men, and Mutwakkil spoke briefly. He thanked those present for the opportunity for a meeting, after the failed attempt of a previous meeting with the country director on February 23rd, when the latter became ill. Already, however, during a tour in January, the country director had been disappointed by the results of the work and asked 'where are the dams?' This, according to Mutwakkil, indicated that the work done up to that point was too small and untidy, that some dams had already collapsed because the rules were not followed, etc. A further year of work

would be necessary, especially considering that the dams constituted only the first level of the process, to be followed by small wells, additional plants, etc. Now the country director wanted the community to answer a list of 6 questions, of which the first was most essential: Did they want to continue?

The *buma* representative, ᶜAz al-Dīn, replied that the work had to be continued, because the positive effects on the well and the water pump were perceptible; the parts of his terraced fields used by the programme also had higher yield. The discussion began, however, with the issue of participation. One of the Concern employees living in Abol, stated that he was one of the people who always worked, and that many times they were alone as a small group; this did not work (*mā bamšī*). One of the Native Administration leaders pointed out that the people do not understand the programme; and ᶜAz al-Dīn demanded the provision of a standard example of a dam that could be copied afterwards. Another man suggested the formation of two groups, with a foreman (*ra'īs*), who punishes absence.

What interpretations existed concerning this lack of participation? On our way to the meeting, Mutwakkil had stated that the problem in Abol was the lack of cooperation, an opinion he based, for instance, on the poor attendance at meetings. Later, in a conversation with a group of women at the well, he complained that there is no trust (*'amān*) between the people; the women answered: 'Yes, our fathers have not taught us the bible (*inǧīl*) in the right way'.

Statements about broken social fabric and lack of morality recurred in many conversations. In a discussion among Samaritan's Purse workers at the church, the foreman talked about a friend's friendship with an 'Arab', which had ended when the latter joined a militia and attacked his friend's village. He talked about a friend of his father, who had shared a common fund with the latter, and then disappeared with the money. His conclusion was that the time of trust (*ṯiqa*) was over, which was what impeded development (*tanmiyya*).[211]

Trust reappeared also in thoughts about belief in prospected outcomes. When I spoke to the women's group on Abol's development committee, we discussed the water situation over a glass of *konglēs*, whose water they had 'begged for' from the Samaritan's Purse construction site, where a basin carried about 5 tons of water. They agreed that the dams were a good idea, and that they brought orchards and more water in the well. But when I asked about the low level of participation in the second year, they hesitated; the explanation finally offered by one of them was that if a Sudanese does not see a result in front of his eyes, he will not do something easily: The current results did not justify the effort.[212]

But social trust and the slow temporal extension of the project's achievements did not appear to be the only obstacles to participation. The phrase used by Ibrāhīm, 'children's play', pointed also to an economic implication, which goes beyond the expectations of large-scale projects by (perceived) large-scale organizations: The suggestion that they work for 1 SDG

per day was laughable to men who spent most of their time negotiating payments in an embattled labour market. What kind of work was to be paid here?

The following situation makes this confusion clearer: Back at the construction site, a quarrel between the foreman and the workers from Abol had developed. It was payment day: Normal workers carrying bricks received 12 SDG per day, experienced bricklayers (*muʿallimīn*) 25 SDG. The foreman worked on the basis of a contract with Samaritan's Purse, which paid a fixed amount (*muqābil*) for the finished construction; all expenses had to be covered by this amount. The payment situation was strained, however, since the church in Abol exceeded the organization's budget for 160 churches, which had already been built.

The quarrel was sparked off by a technical problem with a vehicle causing a delay in bringing water from Heiban, which shifted the start of the work to 11:30 am. The foreman wanted to count this as a half day, which the workers felt to be unfair; they also demanded higher payments according to what was being paid in other construction sites. The foreman, who came from Abri, explained to them that he received a fixed amount from the organization independent of receipts and costs, which had to suffice. He himself, so he said, could not take his normal daily rate from the rest of the money, and was not prepared to build a church for *them* for free, or even at a loss. He either had to cut the daily rates, or they stop the work.[213]

This conflict highlights how different assumptions clash in these kinds of interaction: The workers' claim treated the construction site merely as an extension of a labour market that is marked by continuous negotiations over appropriate payment. Samaritan's Purse, on the other hand, contributed equipment and money as part of a religiously motivated programme, which helped communities to recover from a long war. This left the foreman as mediator between them.

Similarly, the programme instigated by Concern Worldwide seemed to assume that micro-dams are in the community's best interests and that they will be perceived as such, leaving programme managers as mediators of such a perception.[214] But the recognition by workers of the fact that their self-interest would be served by helping 'the community', - which would, it was assumed, have facilitated the acceptance of a comparatively low payment – did not come about.

Ideas

Let me return to the meeting. The programme manager answered the questions raised above by saying that development is never easy, and that some have to go forward to encourage simple people, who only believe what they see, to participate. He talked about Ḥaǧir Tiya, his home village, where there are vegetable gardens in the dammed riverbeds

throughout the year because of the micro-dams. At the same time, the church elder (*šayḫ*) preached against the programme with the words: "*ya Nuba, taᶜmilu sudūd li-šnu? rabbana ḫalaq kullu al-ḫēran di* – Nuba, what are you making dams for? Our Lord has created all these riverbeds". The assembly laughed.

This description 'simple people' communicates an impression of passivity. In fact, ideas for solutions were not lacking, and circulated in occasional talks, but they failed to materialize as collective action. In spite of the 'blank canvas' situation Concern's training seemed to assume, the usage of micro-dams was a widely established practice in Abol, though an individualized one. The riverbeds had numerous small dams followed by small hand-dug wells (*matāris*, sg. *matras*) to store the water. At a sandy place in the riverbed on the way to ŋÍLMI, through which the road to *ḥayy* Naṣra passed, a slightly larger dam had been attempted, as it was also thought to provide a suitable basin, but the attempt failed. An even bigger idea considered the naturally narrow section of ŋÍLMI to be transformed into a series of dams, behind which horticultural projects would then be possible.[215]

Other ideas occurred, such as using the cemented basins (*ḥaydān*, sg. *ḥūd*) left over at the construction sites in the village, and fitting them with covers, or bringing water in larger amounts from Heiban (as some men, especially the unmarried ones, volunteered to do by bicycle), or transporting water using animals, or buying larger containers such as barrels (*barmīl*) and tanks (*foṇṭāṣ*). Maybe, it was suggested, necessary water could be brought by renting a water tank vehicle; maybe the money from the water committee, with further collected money, could be used for that; maybe the authorities could be pushed more to provide solutions; maybe, maybe…

But the sense of there being individual problems that required individual investment prevailed. During one of my last visits to the village, a large gathering was convened by the *buma* representative. After I tried to fulfil my part in this meeting to summarize possible solutions, the assembly was silent, and no new conversation started, despite the *buma* representative's reproachful pushes.

When everybody was already about to go, one of the men asked how all of this could be done by someone who had no money or livestock to sell. Other hesitant reactions to the proposed solutions were that 'there are no means' (*imkāniyyāt ma fīh*) and 'who to tell (to do it)?' (*waḥid yitkallam minu?*). This triggered a discussion in Abol language that I could not follow, and I went aside for a moment. As result of the discussion, the *buma* representative said that a general village assembly would be held, along with the Native Administration leaders; delegations would be sent to Heiban, Kauda, Kadugli etc. to ask for solutions. If they were told "immediately", then good; if "2 years", then they would be patient. When I will return to Abol, he said, a similar, larger meeting will be held to inform me about what has been

done. He finished with the statement that in the end everything comes not from me or from them, but from God.[216]

So collective solutions remained issues of delegation, to representatives, to committees, to organizations, and to God.

Committees

Let me return one last time to the meeting with Concern's programme manager: Mutwakkil suggested calling a larger meeting with the purpose of forming a new committee. In this situation, a strange dialogue occurred: One of the men, Elias, tried to push another one, Maḥğūb, to say something, to announce the new meeting; Maḥğūb replied, "You say it", Elias refused, and then there followed an embarrassed silence.

In the course of the communal well project, a development committee (*laǧnat al-tanmiyya*) had been founded in 2004, with Yussif Tiya as chairman, Mubārak Faḍul, the primary school director, as general secretary, and Elias Zakariyya, the former NWC employee, as financial secretary. Since 2005, the general assembly had taken the form of an annual thanksgiving prayer.

When the Concern project started in 2008, an independent water committee was formed chaired by Maḥğūb; another general development committee was formed by IFAD, chaired by the primary school director, and with the *buma* representative ᶜAz al-Dīn as deputy.

Instead of integrating their efforts, these committees functioned in parallel, and rather than creating a basis for broad collective action, they furthered individual solutions and centralized representation: Supported by IFAD, Maḥğūb was sent to train in iron forging; afterwards he started a business as a smith in Heiban and left the water committee to its own destiny. No new committee materialized, and the disparity between received responsibility and practical response continued.

In the end of Mutwakkil's meeting, a new appointment was set for Saturday, March 13th. The *buma* representative urged the use of all available communication channels: the Native Administration leaders, the women's group, the village development committee, the youth association (*rābiṭa al-šabāb)*[217], etc. to maximize attendance.

Saturday came, and the same group of people appeared at the meeting, so late that Mutwakkil had to leave before it even started.[218]

Organizations

Ibrāhīm had estimated that there were 4000 SDG in the water committee's funds in September 2009. But in his view the committee did not have the right to use the money as they wanted; for instance, to finance a solution to the water problem. They had signed a

paper for the organization that said they were obliged to use the money for projects such as shops, tractors, etc. Although he didn't believe they would be taken to court, he still saw that organizations have very fixed programmes, and that they might not come back if committees didn't comply with their rules. So the committee decided to give the money only as credit with interest, in order to avoid spending without refund.

For programme manager Mutwakkil, this was a misunderstanding of what the contract said. In fact, the parameters for usage of money in the committee's funds were for projects to be 1. water-related; for instance, further micro-dams, a water yard, etc.; or 2. health-related; for instance, to set up a health care centre. In any case, the money was not at the organization's disposal, nor was its usage limited to the organization's decision-making policies.

I was puzzled by this 'misunderstanding', which perceived strict rules on the one side, and benevolent flexibility on the other. The complexity of mutual perception can be shown better, though, through narratives from January to March 2010 about why the water yard was not constructed.[219]

The *buma* representative, ᶜAz al-Dīn, was also a central figure in the contentions relating to the water yard (*donkĩ*) that IFAD had promised to construct in the village. He came in 1989 from Heiban to Abol and settled on a hill near today's market, surrounded by SPLA soldiers on the ridges.[220] His house was in a strategic position on this hill, and a major part of the later dam project crossed his terraced fields.

His version of the shaky interaction with IFAD was as follows: When IFAD started its activities in the village, he was given a contract worth over 7000 SDG to build a community centre, which was to cover the pay of workers and the cost of acquiring stones, pebbles, and sand; cement, bricks, and water were supposed to be brought by IFAD. But the only thing that IFAD actually supplied was cement, (now, because of the long interval, partly solidified) and he therefore demanded new material. When this demand was not met, another source of money was used instead.

IFAD had demanded 15,000 SDG as a community contribution to the water yard, but the collection in Abol amounted to only 1000 SDG. Migrants in Khartoum contributed 9000 SDG, and another 10,000 SDG was donated by Daniel Kodi, who was from Kubang and was governor of South Kordofan at that time. After 15,000 SDG had been handed over to IFAD, the remaining 5000 SDG was used to purchase building material for the community centre, only the windows and roofing (*zinkĩ*) being supplied by IFAD.

According to ᶜAz al-Dīn, the water yard project was only initiated after he had spoken personally with the highest-ranking SPLM politicians of South Kordofan. When an engineer finally came, he went with the former NWC employee Elias in a wide circle around the village, but not to ŋÍLMI. The engineer had said that there was good water further uphill, and

marked a particular spot, which was shown to the drilling team when they arrived. The drilling team had actually started to drill in the village Nyakamma, further north, but had a quarrel with the population about the location. So they came to Abol with seven pipes and drilled, but had to stop after only two pipes had been put in the ground. They then left.

At this point IFAD convened a meeting in Abol, where the following options to proceed were discussed, since the water yard option had to be regarded as having failed: 1) a water reservoir (*ḥafīr*) was considered impossible, because of Abol's topography; 2) the construction of dams would require much more time; 3) the best option would therefore be to give back the money the community had contributed. This last option was refused, because the community wanted a solution, not money. Nothing else happened.

Another story was told by Elias, the former NWC employee just mentioned.[221] After they had failed to smash the rock at the bottom of the well, they had considered other options. They disregarded *ḥafīr*, because the soil around Abol that could be dug is mostly over sand, meaning that it would take a lot of effort to reach the rock layer. Therefore they had preferred the idea of installing more water pumps.

The donation of 10,000 SDG by Daniel Kodi was recorded by the general secretary of the original development committee, which was the one actually active. No other money had been seen, especially not from Khartoum and for any other claim the records would have to be consulted. Since all the relevant documents had either been eaten by termites or damaged by water in the meantime, these events now belonged to the field of oral history.

In Elias' narrative, the IFAD delegations went exclusively with the *buma* representative, ᶜAz al-Dīn, and the drilling was both undertaken at the wrong spot and in a manner that was technically wrong. He himself had taken out, examined and cleaned the 11 pipes of the water pump, each of 3 metres length, and saw about 2 metres of water below; further down, he was sure, one would find easily accessible groundwater. Furthermore, the drilling team people used 3-inch (*būṣa*) pipes, which are for water pumps, not the 4-inch pipes used for water yards.[222] The blame, he felt, should therefore lie somewhere between ᶜAz al-Dīn and the organization.

In the narratives of others, a further source of blame appeared: The *buma* representative had insisted that the water yard be near his own house at the market, which angered many people. This anger was all the greater since some recounted that IFAD's engineers had spoken about the presence of an underground lake, which would have admitted easily three or four water pumps.[223]

I went on to consult members of the organizations. An employee of IFAD in Heiban gave the following version of events at the meeting in Abol: They and a team from WES had presented the results of the drilling, along with several alternatives: either to give back the

money, or to build a dam, or a *ḥafīr*, or a water yard further away. The Abol community was in a contrary mood and insisted on a water yard close to their settlement. The WES people left, and that was the end.[224]

However, the programme manager of Concern Worldwide recounted a meeting of IFAD's employees in Heiban with the Executive Officer for the Heiban Locality. The latter had asked harshly about what would happen with Abol, where the results were, why the people's money was not yet there, and that he wanted a new survey and a water yard, if necessary with financial support by the local administration(!). The IFAD people answered that they would go to Kadugli during the following days, meet IFAD's programme director, and give an answer on their return.[225]

In IFAD's headquarter in Kadugli, a new side of the story was revealed: on the initiative of IFAD, WES had committed to a survey and implementation of the water yard, according to IFAD stipulation, with a 25% share of the costs to be provided by the community (15,000 SDG) and the rest from IFAD (45,000 SDG). Both prospective locations suggested to WES by the 'people of Abol' were found to be dry, and the proposal to drill further away was refused. At the same time, other villages such as Mer did receive their pumps, and the related projects were finished; WES should have paid back the money to Abol's community.

By this time, however, IFAD had proposed a deep survey near the village, and WES had to wait out the rainy season in order to start afterwards. But then Al-Sirağiyya near Abu Jibayha experienced a drought, and the governor ordered all organizations to focus their attention there. At this point another WES delegation was supposed to go to Abol. However, normally the transfer of information from Kadugli to IFAD in Heiban to the village development committee should have functioned well, especially since important politicians such as Simon Kalo and Daniel Kodi had intervened personally in this matter.[226]

Finally, I went to WES at the Ministry of Water Resources (*wizāra al-mawārid al-mā'iyya*) in Kadugli. The story offered by the geological engineer who had led the preliminary survey in Abol was short: In 2008, a delegation from the MoWR went to Abol, in order to survey the water resources. The result was a study of ten possible spots for drilling, all of which were in *ḥayy* Qamr and turned out to have only small amounts of water. The report ended with the recommendation to build two dams in the main riverbed, upstream of the pump that WES had already constructed.[227] The report also noted that 15,000 SDG would be needed for further study and implementation of the dams. What happened then is that the study disappeared under the heap of other things to be done by vice-governor, ᶜAbd al-Aziz al-Ḥīlū, concerning the SPLM-areas (*al-manātiq al-muḥtāra*).

The second part of the story starts with IFAD at the beginning of 2009, which commissioned a study for a water yard; this was conducted by the engineer Sulimān Aḥmad, with whom I

also spoke. He, like all the geologists and chemists in WES, works on commission, which in this case was the contract with IFAD. He searched in the general area chosen by the *buma* representative ᶜAz al-Dīn Kuku Mān and his contact in Heiban, an employee of IFAD Heiban. He searched according to geological features and with the help of detectors; two spots were chosen for drilling. The amount of water found was insufficient, however, and therefore other solutions such as dams were offered to 'the village', but were refused. In other regions, such as Mer, the drilling succeeded. In any case, WES took, in accordance with its regulations, 30% of the overall costs of failed projects, which in this case amounted to about 18,000 SDG. Since no further study was commissioned, the whole issue ran dry at this point.[228]

I could not return to the next meeting in Abol, and the delegation of solutions obviously did not work. Two years later, Abol's people were again surrounded by war, probably returning once more to relying on the water in the mountain caves, and any new period of construction will start in a situation very much like that existing when I last visited the village.

4 Infrastructure

Economic development of any community depends on the energy and derives from the consent of the individuals of that community. This consent and energy can only satisfactorily be engendered through the Native Administration authorities. […] They should not be regarded as a pleasant and medieval political toy, but as the true agencies of progress and enlightenment.

Donald Newbold
(quoted in Henderson 1953: 495)

4A: Roads

A road leads east from Abol to Kubang. Kubang lies in a valley and has a clearly defined centre around the market place. Kubang's market is at a crossroads, three roads of which connect with Heiban (south-east), Leira (north-east), and Shawaya (north-west). My last days in Kubang encompassed a market day in March 2010; a Friday.[229] Few people were there, with only the occasional sale of goods from Heiban or Shawaya in addition to the normal trading activities of the permanent shops, but the butcher and the *marīsa* sellers had more work than usual.

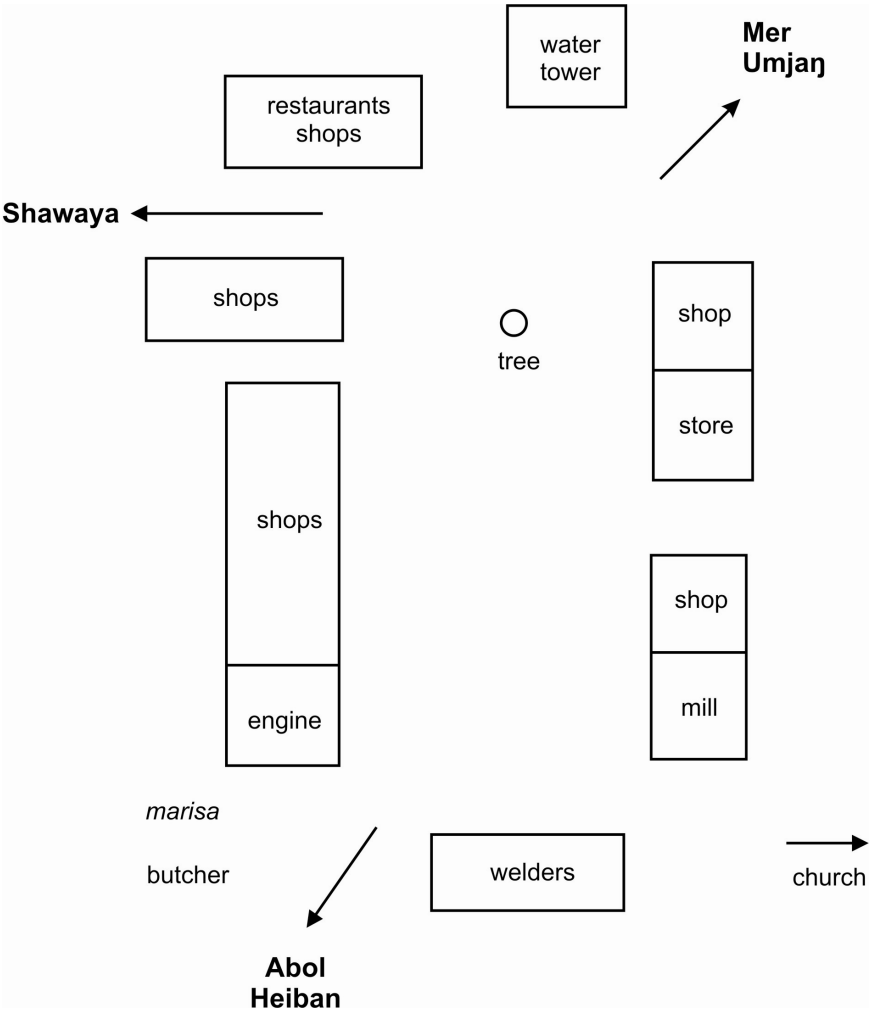


Figure 4A.01: Sketch of Kubang's market (Source: own fieldwork).

Behind one of the shops, a blacksmith sat on the ground. He mostly worked axes, by laying the bellows on the ground, consisting of a wooden air chamber and a metal tube leading into the fire. Piled earth contained the heat and the axles of bicycles fixed the construction, while the smith placed the cutting edge in the fire and hammered. In the meantime, the diesel engine of a welder filled the air with a constant drone, and the welding arc radiated a

painfully bright light. Not far off, two women shared work in a restaurant, selling tea, and listened to Al-Kabli on a battery-powered radio while they cut liver. On the roof of the kiosk (*tabaliyya*) of another woman nearby, a solar battery panel supplied enough electricity to power one electrical light.

I met Joshua, who was my host and occasional guide. He operated an electric mill in the western part of Kubang; two young men from his family worked with him. The engine demanded five barrels of cooling water in order to work 24 hours, but his customers needed just as much cooling: The *malwa* was only per 0.3 SDG, but there were regularly contentions between the women, because the distribution got confused by deviation from the queue, which provoked arguments about priorities.

Joshua was a relative of ex-governor Daniel Kodi, who belonged to one of the dominant families of the village, owning a large amount of land. The families of Kodi and Raḥḥāl, whose fathers had also been relatives, nurtured some influential personalities occupying high positions in the village, but also in organizations like NRRDO, and in SPLM/A. Another high-ranking SPLA officer, Simon Kalo, was also from the village.

We went in a north-westerly direction to a dry riverbed, which separated the western part of Kubang from Shawaya, about 4 kilometres from the market. We soon ended up talking about the recent past. The western quarter of Kubang had been the only area the inhabitants of which had retreated to the western mountains during the war; the others had fled to the mountains in the east together with the people from Abol, among others. Joshua recounted that Sudan Armed Forces (SAF) troops had first passed through in 1989. The government's army occupied territory extending from Khor Delēb to Al-Azraq, while the SPLA covered the areas of Tira, Moro, and Shawaya to Debbi, which was the frontline for some time. After Debbi had been invaded, the front line shifted in direction of Kubang.

Through the years, the civilian population had to supply the SPLA soldiers he said, and the 'people suffered a lot' (*al-nās tʿibu katīr*). The soldiers were stationed in Baqqāra-style grass huts in groups of six, all of whom belonged to one section (*faṣīla*) of a company (*sariyya*). Each month a different village quarter was in charge of the supply. Because they had a chain of water holes in the mountains, supply of this necessity was no problem, but apart from water and basic food items, the people also had to bring cattle and goats, which was much more difficult.

The long war also nurtured a generation that was born into and grew up surrounded by war. One of them, Josef, was now 19 years old, and he recalled fragments from his childhood: They slept somewhere in the grass, because no sleep was possible (*nūm ma kān fīh*) in the targeted houses. Antonov bombers would bombard them during the day, and the SAF attacked at night, often meeting as resistance only other boys like him, with hand grenades

and a handful of ammunition. Supplies of the latter were limited, and he remembered his older brother, who was an SPLA soldier here in Kubang, had only ten bullets as his ration; shooting only occurred when there was a clear target; it was bad luck if one was hit by enemy fire first. One major event he remembered was the treason by Lieutenant (*mulāzim*) Sulaymān Mandūl in 1998, who went to Heiban with 25 soldiers, was bribed, and fled to Khartoum, while some of his 'boys' returned as SAF soldiers and shot at SPLA soldiers; among them Simon Kalo and his wife. Josef also recollected that shortly afterwards, in 1999, commander ᶜAbd al-ᶜAzīz al-Ḥīlū had come to Kauda with 2000 soldiers, and 5000 SAF soldiers were sent against him, but a call to John Garang was enough to secure backup. This is remembered as the last big battle before the Ceasefire Agreement in 2002.

For another young man, Simuel, walking at night with a lamp was enough to remind him that during the war, if carrying a lamp one would have been immediately shot by the SPLA, because presumably only townspeople (*burǧwāziyyīn* [!]) would have used such devices at that time. In a group including these two young men and Simuel's mother, they recounted to each other how it had been to survive on meagre resources. The *delēb* palm in particular had been used completely: The leaves were made into ropes and mats, but also burned for salt. The fruits were taken and laid on the ground, where they grew roots, which were eaten as *ḥalūk*. The kernels of the fruits were burnt, mixed with water, and decanted, and the result, a salty substance, was eaten as *mulāḥ*. The stalks and the wood of the palm were used as threshers and for construction.

The soldiers who camped in the plains were sons and relatives who had become commanders, while respected elders had become civil security agents for the liberation army. Although limited to farms near to the village, the families cultivated the same plots, but with fear and open ears, ready to start running at the sound of planes or bombs. The war had thus re-established a strategy of flight, which had already been documented in the 1930s, when British officials saw farmers leaving their guns at one side of the fields so they could run to them upon attack, while women and children fled to the mountains.[230] Similarly, cultivation went on in the plains during the war, but weapons were at that time in the hands of an armed movement, who looked upon the farmers as civilians. After the war, the people of Kubang started to return to their houses in the plains, but the process of resettlement began slowly.

I returned to the market with Joshua, where a lorry departed to the village of Mer, in the north-east. On the way, it would pass the Umjang quarter. Umjang was, to an even greater extent than the rest of Kubang, a settlement of returnees, with people establishing their houses, step by step, further from the high ground. Unlike Kubang, Umjang was not concentrated around roads, although a dry season road led like a vein through Kubang, past

a Samaritan's Purse church in Umjang, to the Leira settlement of Kaderu, while a rainy season road led over the Umjang highlands.

Apart from the church, small paths also connected other larger buildings, such as a school and the office of Concern Worldwide / NRRDO. The school had been built under the auspices of the SPLM education administration, through the *nafīr* of people from Leira, Heiban and Shawaya, whose Native Administration leaders (*šiyūḫ*) led the construction of class rooms, one by one. UNICEF then added an administrative building and provided chairs, tables and food, while NRRDO organized Kenyan teachers. Alongside was a compound for teachers near the ruins of the Ḥakīma Yaġūb Training School, where nurses and midwives had been trained during the war.

The Concern Worldwide / NRRDO office, which was also a storage facility, had been built by a Kawalib engineer and Kawalib workers; the roof had been attached to wooden beams with 10 cm nails, but the wind had ripped it off. A little compound was attached to the office, with an Indian pedal-powered water pump, which was used for the horticultural training of women.

North of this area was a huge, fertile area of land for horticulture, called GUJELÉ, which was now mostly used for wells and the watering of cattle, with the result that the place was full of cow manure. A few people used the land for fenced gardens. One the horticulturalists, Yussif, had many years' experience. He was a former missionary school teacher from the Raḥḥāl family, who had learned gardening in the missionary station of Umm Dorein. On about 200 m² of land he grew a rich diversity of fruits and vegetables, among them mango, banana, lemon, guava, cassava (*bafra*), and sugar cane. But his orchard was clearly neglected, although he let a youngster work there, because his knee problems prevented him from going regularly. It seemed that decades of continuity had been broken here, as a result of far more than just painful joints.

Many arrangements that appear to have worked before no longer did: Tight fences now had to protect the orchards from intruding animals and thieves. Before the war it was common practice to keep livestock within fenced areas (*zarā'ib*), a practice that had apparently disappeared now, and contentions over damages were frequent. In a crisis meeting held by the *buma* representative in April 2009, for instance, he threatened to allow the police to catch all roaming cattle. Most perceived this step as coming too late, though, as all the fields had already been prepared: Agreements and meetings were meant to be arranged in December to plan agricultural and grazing land, but they never did.[231]

Against this impression, Joshua claimed that cattle caused no big problems, as they were in fact kept in *zarā'ib*, at least during the harvest time. His interpretation was rather that the war had brought things such as stealing and sabotage, due to a breakdown of social trust, and so

people invested less in larger projects like orchards, whereas there had been plenty before the war.

In any case, the failure to find sustainable solutions to these problems seemed to be related to the situation people were in on returning from the mountains and from the towns. The Kubang I saw was full of tense negotiations of social order, and stressful searches for working arrangements, tracing both new and old connections between people.

With a last look at the market, I consider the roads diverging to larger settlements: In the East, there is the small town of Heiban, which had been a governmental garrison during a civil war that reached Kubang at the end of the 1980s and has still not left it entirely. Now, Heiban was the seat of a government in which both former war parties sat together, no longer engaged in fighting with bullets, but fighting instead by what they call 'politics' (*siyāsa*). At the same time, greater perceived need had become greater demand, which was to be met by 'development' (*tanmiyya*) and by 'administration' (*idāra*): roads, schools, hospitals, electricity, telecommunication networks, etc.

In the West, there is a road to Kadugli, the federal state's capital, the regional centre of both development and administration, which had also formerly been the regional capital of governmental violence. Economic capital accumulated there to a much greater extent than in the former rebels' headquarters in Kauda, which was nearer to Kubang, both politically and geographically, but running out of money. In the process of unification and centralization of the administration, Kadugli also became the place to meet 'the government' (*al-ḥakūma*), whose face slowly changed to the form of offices, forms to be filled, documents to be shown, and lists to be written. As such, the government's face appeared to become similar to that of the organizations encountered during and after the war: their long lists of names of those receiving grains, their long meetings to form a committee or to elect a representative, their long work processes to construct public buildings, etc.

To the North is Khartoum, the national capital, to which people left the village during the war and became townspeople, and now return from time to time, bringing goods and ideas. But new goods in the market, the money to pay for them, and new technologies all still had to be brought to the village from there, and, with them, new problems arrived.

The places these roads connected, and the manner in which such connections were made, thus seemed a crucial issue.

4B: Organization of connections

In a way, the history of the Nuba Mountains could be written as a history of connections, of pathways paved and blocked, of links established and cut.[232] Throughout this history, connectedness always had both positive and negative aspects, and life in the plains was full of unpredictability, both constructive and destructive.[233]

One field in which to explore the rather ambivalent character of connectedness is that of the establishment of physical infrastructure; for instance, roads and telecommunication networks, which became the main links with other settlements, and with people and things there.[234] At the same time, the organization of labour to establish these links reflects the administrative changes that accompany them. During British colonial rule, road design was the work of British engineers and administrators; road-building and maintenance the work of subjects recruited from prisons and through Native Administration; and motorized vehicles belonged to the government's patrolling forces and supra-regional traders. After the Second Civil War, large-scale road design was the work of engineers in Khartoum and Kadugli; road-building and maintenance was the work of construction companies from Khartoum and China; and most motorized vehicles belonged to the government, INGOs, UN agencies, and supra-regional traders. In the following, however, the emphasis will be on issues of community-based extension, which still dominates all but the most major roads in the Nuba Mountains.

The documented history of these processes is mostly a history of British colonial rule, and little has been written about the developments since 1956.[235] The establishment of British rule had resulted in several road making projects.[236] At the end of the 1930s, the Eastern Jebels district was connected westwards by a road to Umm Heitan, which was the boundary of the Western Jebels.[237] In the direction of El Obeid, officials could go by car or lorry to *ḫōr* Abu Habl, 7 miles south of Rashad, ferry across, and then continue to Rahad by camels.[238] Another important route led over Delami to Umm Berembeita and Kaka via the Upper Nile road;[239] Umm Berembeita was divided by a big riverbed, which could however be crossed by car.[240] The most important link for Heiban was the road between Rashad via Delami to Talodi (see figure 4B.01).[241]

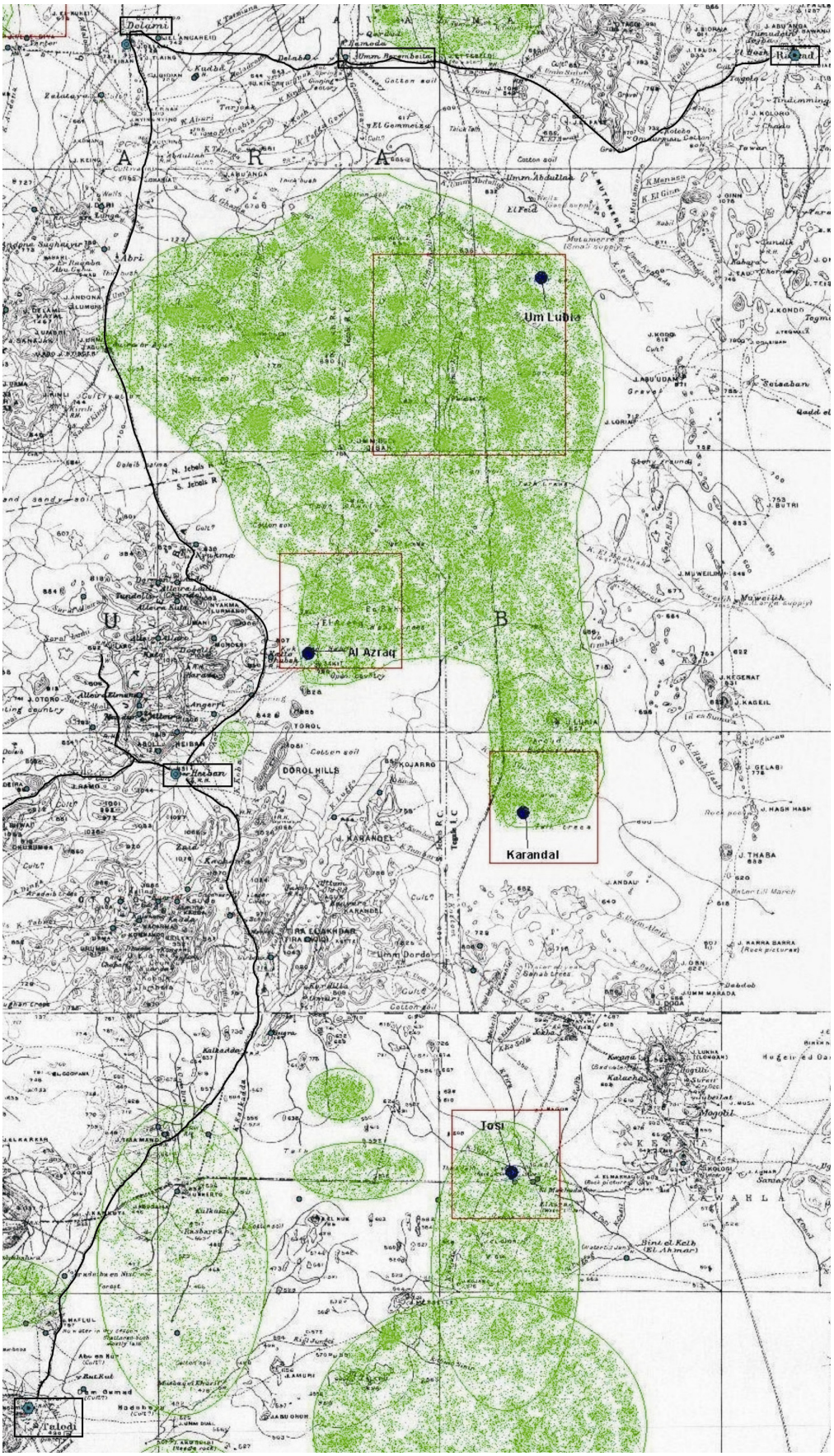


Figure 4B.01: The road from Rashad to Talodi and from Heiban through Abol during British colonial rule (Source: Sudan Land Survey map, markings by author).

The extension and maintenance of this road network was partly organized through Native Administration leaders,[242] who were supposed to recruit labour force and distribute payments.[243] The responsibility for maintenance of road sections defined thereby also tribal territories in British colonial eyes.[244] But much more significant was the labour extracted from prisoners,[245] who were used mostly for reasons of cost reduction, though some administrators also managed to see a moral benefit in it.[246] This extraction of labour went so far that it became normal to carry a group of prisoners on government lorries in case of emergencies.[247] If someone refused to provide help to get government lorries out of the mud, it could lead to their arrest for disobedience and 20 days in prison.[248]

The most thorough discussion of the organization of labour for road-building and maintenance can be found in a document by J. A. Gillan.[249] Gillan's thorough discussion of how to make roads based on locally available resources communicated experiences gained in a tour in Mongalla Province, which were to be transferred to the Nuba Mountains; it also cited examples from Nigeria. The abilities were clearly divided into three levels: the experts (European engineers), the amateurs (British administrators and trained 'locals'), and the manual labourers ('natives').[250]

The planning of roads in the Nuba region is most essentially involved with anticipating the flow of water and understanding how to manipulate it. The proposed function of the road and the amount of water expected therefore determine to a great extent the basic decisions about the necessity and form of bridges, among other aspects. This also depends, of course, on the properties of the soil, specifically the drainage; clayey soil hold water longer than ironstone, for instance.

The possibility of organizing the bulk of work suitable to unskilled labour was considered by Gillian to be a positive thing.[251] The availability of persons with different levels of skill, he wrote, also influences the decision as to which kind of construction to choose for drainage or bridges. However, the combination of local practicability and the reduction of costs dominated the choice of strategies: the inclusion of experts was therefore discouraged,[252] as was the use of costly materials requiring skilled labour.[253] The preferred option suggested by Gillian was the supervision of cheap local labour by administrative amateurs with as few additional tools as possible.[254]

The central task, where such 'local labour' had to be organized, was the maintenance of the roads. The system referred to by Gillian was based on the definition of sections, each of which was the responsibility of 'its people'. The presupposition was not only that the authority of the government will support the recognition that this work is for the people's own good; a further argument derived from this thought was that such work does not require payment, *since* it is for the people's own good.[255] Any form of continual care and maintenance, such as

weeding all year before grass grows high, would then reduce the overall effort for the government.[256]

Seasonal changes had a major impact on how fast space could be crossed.[257] During the rainy season, rain influenced where one could go and how one could travel, especially since most roads were crossed by riverbeds, which could be filled with water in a matter of minutes.[258] Court trials therefore had to be arranged in the dry season, when roads were open,[259] but even then unpredictable rains could ruin not only harvests, but also roads that had already been repaired.[260] The growing vegetation was a continuous threat to traffic and necessitated a continuous process of maintenance, with the result that road inspection was also a continuous task.[261]

Another temporary boundary to mobility was the reaction to the spread of diseases. The year 1940, for instance, brought a widespread yellow fever epidemic to the entire Nuba Mountain area, whereupon the region was quarantined. The disease broke out around Heiban in November 1940 and spread to the northern part of the district, as far as Kawalib. It cost at least 1200 people their lives, and a large-scale famine followed due to a lack of labour force to harvest.[262]

Here the authorities that controlled movement in the country were activated: Police posts were stationed around the infected areas along railways and roads to towns; members of the Native Administration and school masters, among others, prevented entry and exit; schools and markets were closed.[263] These measures were also circumvented, especially when incomes were threatened by the reduced mobility, for instance in Elliri, where people went to work in Malakal via the river. Here ‘overlordship’ became a clear task, and the head of Awlād Ḥimayd, Radi Kambal, was in charge of preventing people from moving to the river.[264] At the same time, the priority of maintaining trade connections superseded these measures: A lorry carrying gum Arabic between Kalogi and Kaka was still allowed to travel, because it was “important to our Awlād Ḥimayd and the merchants”.[265]

In times of crisis, such as during the epidemic of 1940, other means of transport were used for letters, too, like the agricultural lorry going from Talodi to El Obeid.[266] Especially during these times, the ‘intermediate’ or even ‘unmanned’ connections became more important. During World War 2, for instance, letter and telegram communication went over Delami,[267] and other communication was sustained by camel lines,[268] though airmail also became available.[269] The importance of telephone connection was immense at such times, and Tungura in Elliri became the ‘capital’ of the area for the administrators, because of its telephone.[270] The stations in Talodi and Rashad, furthermore, also had telegraph connections with El Obeid, and Rashad also maintained radio contact.[271]

Physical mobility nevertheless remained the main focus in the search for solutions. Parallel to the extension of the roads, lorries substituted donkeys as the main vehicle of transport;[272] mules remained the favoured vehicle of the police in the mountains (Kenrick 1987: 97). The few historical hints that exist indicate that the first experiences with motorized vehicles were made in this region during the 1920s.[273] Nevertheless, British writings from about that time commonly feature entries about the difficulties of movement in the Nuba Mountains, and show an illustrious multitude of transport vehicles.[274]

What is important to note is the extent to which mechanical knowledge was disseminated during that time, something that also constituted an active political issue. The tricky situations that users of machines sometimes ended up in appear frequently in the writings of members of the Sudan Political Service;[275] major repairs seem to have been performed only in El Obeid.[276] In most situations, then, solving mechanical difficulties such as breakdowns relied on the mechanical knowledge of administrators, drivers, or passengers.[277] Such useful knowledge seems to have been characterized by its composite form, and had much more to do with individual experiences than with systematic education.[278]

In the specific case of the ginnery engines, however, access to mechanical knowledge seems to have been restricted much more to the British engineers.[279] As far as it is possible to tell, the only industrial usage of engines occurred with the establishment of ginneries. Up until 1937, several ginneries had been opened,[280] and the years after the introduction of cotton schemes in 1924 showed an increase in the number of all-weather-roads,[281] after considerations of extending railways were abandoned.[282]

In any case, the question of systematic education in handicrafts and engineering was also embedded in discussions about the duties and purpose of government-controlled education.[283] The idea of transferring cotton production to private companies, for instance, was rejected based on the ‘sensitivities’ of Nuba producers, which were considered to require careful governmental supervision.[284] The introduction of these ‘Nuba’ into the modern production environment, went the argument, would require that they were prepared for their roles through directed education in government schools,[285] in order to ensure that they developed only those skills that were called for to meet ‘local’ requirements and those of the labour market.[286] The integration of the Native Administration and ‘technicians’ was another strategy intended to strengthen ‘local’ development.[287]

But the actual developments in this direction remain difficult to grasp. The only apparent transfer of motor mechanical knowledge was therefore connected with labour migration to northern towns. This migration has had a long history, but it has led only since the 1960s to larger established communities whose centre of living had moved to the town. At first the dominant fields of labour were those of construction and housekeeping, but the growing

urbanization and motorization of the central towns led to diversification of the labour market, and more people became involved in mechanical workshops.[288]

Soon after the end of colonial rule, especially in rural areas, the maintenance systems ceased to function and the road networks deteriorated. Only after the CPA did new projects to improve more or less paved cross-country roads and surface them with tarmac allow further changes, from the Bedford and Komer trucks of the 1970s and 1980s to 30-ton-Mitsubishi transporters today. As in the 1920s, the encroachment of regulated administration met a commercially driven interest in the reduction of transport costs in the 2000s, and new vehicles brought new people, new goods, new prices, and new problems.

A growing sector was that of buses, which developed to a 'tourist' quality only on the Kadugli-Dilling-El Obeid line. Indeed, the improved roads facilitated the opening of new businesses, especially those connected with bus transport, which led to several young men working transport lines, for instance, between Heiban, Kauda, and Kadugli. Telecommunication networks provided a new window onto the world, too: In 2010, several people could be seen on elevated spots in Abol and Kubang talking by mobile phone with friends and relatives in other towns and abroad, and mobile phone-related issues began to become part of the subject matter of private conversations.[289]

The rapid distribution of very different types of motor vehicles also resulted in a strong tendency toward specialization, in both supply and repair. As result, there was a wide range of technological knowledge, ranging from the learn-by-doing basics of the functioning of a diesel engine to specialization in the fine mechanics of a Toyota Landcruiser. The long civil war limited the transfer and movement of this technology and its embedded rules of usage, but during recent years a professional movement was instigated by some men trained in the capital's workshops as mechanics, now headed for their home regions. Those involving themselves in their region's issues also increasingly included engineering graduates from universities in Khartoum and other towns.

However, the multiple functions of roads, facilitating the supply of both food and medicine and of weapons and soldiers, made them an indicator of both trust and mistrust on the part of those they connected: Long after the war, road constructions were still sometimes obstructed by those who were unsure of the nature of the connections that were thereby being established. For these reasons, the construction and maintenance of physical infrastructure have remained crucial issues in terms of leadership and accessibility.[290]

4C: Sustainable growth

In the field of development cooperation, the term 'sustainability' is a reference to long-term effects, or consequences, whose existence exceeds the temporal framework of the intervention. It also describes the long-term availability of resources that allow stabilization of outcomes and – by extension – provide a basis for further growth.[291] This implies that this basis continues to exist and can be built on.

In March 2008, the Technical Secretariat of the World Bank's Multi Donor Trust Fund-National in Khartoum published a so-called growth diagnostic for South Kordofan (Klugman & Wee 2008). The situation assessment paints a dark picture, brightened only by the recent peace agreement:

> The starting point is thus one where protracted effects of conflict and gross under-provision of basic services had resulted in widespread poverty and underdevelopment. Hence both South Kordofan's recovery from the conflict and its future prosperity are key aspects of the potential associated with peace in the country (Klugman & Wee 2008: ii).

Reasons for this situation were found not only in the civil war, but also in the process of "marginalization by the center", which led to "political, legal, financial, administrative and logistical constraints to development" (Klugman & Wee 2008: 29). According to the assessment, little had changed since the CPA, as "there have been delays in forming a government, lack of integration of the civil service, lack of physical infrastructure continuing to prevent access to many areas, and weak institutional and human resource capacity to manage the process" (Klugman & Wee 2008: 29).

Amidst these governance failures, goes the argument, priorities have to be defined, which can be narrowed down to an action plan. For rural areas, for instance, "improved connectivity and access to markets appear to be a priority, through investments in roads and market infrastructure, as well as improvements in farm productivity and water resource management" (Klugman & Wee 2008: v).

A more specific analysis links low crop sector productivity with the "remoteness" of the region and with the effects of the war. It related "conflict damaged infrastructure (eg. [sic] transportation, communication, electricity supply) and the competitiveness of the state's produce", which, it said, result in "a vicious cycle of low incomes and disincentives to invest in new technologies" (Klugman & Wee 2008: 96). This suggests, too, a strong correlation between trade and growth.

This apparent correlation is then used as the basis for arguing for intervention: The lack of reliable supply of resources, for example, electricity, combined with unfavourable road conditions hampers small enterprises. Public investment in infrastructure was and is limited,

which curbs the availability of necessary inputs; recent improvements in roads, furthermore, was concentrated only on the main routes such as Kadugli-Dilling and Kadugli-Kauda. Consequently, "[p]rioritization and sequencing will be needed as well as serious considerations about the trade-offs between different choices, given costs involved" (Klugman & Wee 2008: 104). The integration of the state, the document suggests, should be based on links between major towns, resource-rich areas, and external markets, most especially El Obeid and Khartoum. While the south-eastern and western parts of South Kordofan are marked specifically, the rest is portrayed as subject to "a need to look at options for rural roads to provide improved access to farmers, and to integrate local producers in the supply network" (Klugman & Wee 2008: 105).

While so-called public-private partnerships (PPP) are mentioned first as "alternative options for rapid implementation" to be explored (Klugman & Wee 2008: 104), the argument ends with the recommendation that "[t]he reconstruction period can be used to encourage a more vibrant private sector in the state through application of public-private partnerships in construction activities and infrastructure projects" (Klugman & Wee 2008: 106).

This assessment is consistent with a later World Bank report on infrastructure in Sudan (Ranganathan & Briceño-Garmendia 2011), in which a connection between assumptions, subsequent scenarios and the specification of needs is even more explicit. Agricultural development is again causally linked with the improvement of transport efficiency; specifically of supply roads. Their insufficiency is explained as being due to "inadequate funding for road maintenance and the lack of cost recovery along existing roads" (Ranganathan & Briceño-Garmendia 2011: 16); in other words, due to imbalance between available revenue and appropriate spending.

The report claims that "[t]ransport spending needs can be estimated based on the assumption that key economic nodes need to be connected" (Ranganathan & Briceño-Garmendia 2011: 16). This assumption leads to the definition of connectivity standards, in which the rural standard describes "linking land responsible for 80 percent of existing agricultural production value to the national network as well as linking land with the capability of producing 50 percent of the nonrealized agricultural value" (Ranganathan & Briceño-Garmendia 2011: 16).

According to a so-called base or best-case scenario, "all infrastructure is maintained in good condition, and higher-end surfacing options are used (asphalt for all regional, national, and urban roads and single surface treatment for rural roads)" (Ranganathan & Briceño-Garmendia 2011: 16). A 'pragmatic' scenario, however, presumes that "half the infrastructure is maintained in good condition and half in fair condition, and lower-cost surfacing options are

used (single-surface treatment for national and urban roads and gravel for rural roads)" (Ranganathan & Briceño-Garmendia 2011: 16).

Assumptions and scenarios are combined at this stage to give specific "connectivity needs" in quantitative measures: US$ 750 million to US$1 billion for the basic connectivity of both scenarios, annually US$ 400 million for expansion and annually US$ 390 million for maintenance. The pragmatic scenario, however, lowers "the standards for new developments and upgrading", while it emphasizes the importance of maintenance "to sustain the network" (Ranganathan & Briceño-Garmendia 2011: 16)

However, the translation of network maintenance into aggregated numerical expressions does not comprise the entirety of the argument in the previous South Kordofan growth diagnostic. It set out rather with the conviction that "the recognition of local level solutions suitable to the diverse environmental and production condition, traditions and social capital within the state" (Klugman& Wee 2008: i) is of substantial importance. Related statements appear throughout the paper, for example: "[l]ocally differentiated strategies are needed to initiate and sustain growth" (Klugman& Wee 2008: v), and "local traditions and social capital vary" (Klugman& Wee 2008: 88).

The explicit reference point for such an approach is the growth diagnostics model as developed by Hausmann et. al. 2005. The text claims assuredly that "[m]ost well-trained economists would agree that the standard policy reforms included in the Washington Consensus have the potential to be growth-promoting.[292] What the experience of the last 15 years has shown, however, is that the impact of these reforms is heavily dependent on circumstances." (Hausmann et. al. 2005: 1).[293]

Accordingly, South Kordofan's overall assessment is diagnosed as lacking enough data to be specific enough about the circumstances:

> Serious data constraints limit the depth of analysis that can be carried out at present. There is no statistical agency at the national level systematically collecting regionally-disaggregated data, and the South Kordofan administration itself does not have the statistical systems and capacity needed to establish levels and trends in key indicators. A limited amount of official data comes directly from agencies such as the Ministry of Agriculture, although no estimate is available for the gross domestic product of the state, nor on trade flows, and population estimates are outdated and do not reflect the return migratory movements that are very much defining the demographic landscape in South Kordofan today (Klugman & Wee 2008: 21).

Careful data collection and the availability of data in less aggregated form are thus, from the point of view of the report's authors, not only basic tools of transparency, but also the basis for the evidence of needs by which to define specific priorities for development interventions and their probable consequences. The text concludes:

This report is an initial attempt and presents a broad typology of different economic activities around the predominant farm groups and livelihood strategies – agro-pastoralists, nomads, and sedentary farmers – and distinguished between rural and urban areas. Further disaggregation and significant local input, debate and discussions are needed to inform appropriate policy and program directions (Klugman & Wee 2008: vi).

4D: Public works

The so-called *Framework for Sustained Peace, Development and Poverty Eradication*, worked out from April 2004 to February 2005 by the Joint Assessment Mission (JAM), is a comprehensive plan for the development interventions that should ensue after the official end of the Second Civil War and the signing of the CPA.[294] The report stated that the latter's implementation "should bridge the gap between the 'periphery' and 'centre' of decision-making through increased participation and empowerment, and respond to local demands and needs" (JAM 2005a: 12), while the JAM "aims to cover the constellation of needs for Sudan's post-conflict reconstruction and development" (JAM 2005a: 11).

Among others, the report identified insufficient infrastructure as a constraint on growth and access to social services. It found that

> [o]nly about 15 percent of Sudan's population has access to electricity, while transport infrastructure has deteriorated due to prolonged war, budgetary cuts and limited access to foreign financing. Many of the roads, railways, bridges, river transport and sea ports that do exist are in need of substantial repairs. […] Infrastructure links between regions are critical not only for the economic integration of the country but also for fostering a sense of national unity. (JAM 2005a: 18).

To this end, action plans were proposed to identify priorities, with an emphasis "on developing implementation structures that will facilitate high fiduciary and procurement standards, enabling the execution of labour-based construction activities" starting with existing rural roads. Another priority is electrification via "the extension of the national grid, rural electrification, promotion of renewable energy options and the development of a national electrification master plan" (JAM 2005a: 34).

Several sectors are discussed in cluster reports, one of them regarding physical infrastructure. The function of the preliminary action plans, though, is specified as being "an instrument to get the reconstruction process started, essentially by serving as a basis for reaching consensus with and between the North, the South and the donor community on what needs to be done initially" (JAM 2005c: 196). Later updates were thus considered both necessary and desirable. After preparations for infrastructural reforms, and the securing of equipment and plans for quickly implementable projects, a second phase was planned to facilitate, among other things, "development of rural roads in the whole country to promote economic recovery and improve access, whilst relying on labour-based techniques where appropriate" (JAM 2005c: 197). At the same time, access to electricity was to be improved immediately by "a rural electrification strategy for about 1000 villages using solar and small

hydropower energy sources" (JAM 2005c: 200), while the further extension of the national network was to be subject to feasibility studies concerning cost-effectiveness.

Target outcome for 2011		**Increased connectivity within the Three Areas and with the South and North, leading to improved access to markets and basic services.**	**Provision of at least basic electricity and public water and sanitation facilities in all towns and larger villages.**
Baseline		Extremely limited connectivity.	Dilapidated electricity generation system and water and sanitation facilities in urban and semi-urban areas.
Key Actions and Results			
2005	**Prior to Dec.**	- Legal frameworks assessed, and action plans proposed - A programme for development of feeder roads and market towns developed	- Potential for micro-hydro power generation identified
2006	**Jan. - June**	- Legal frameworks for transport passed, and programmes put in place - Framework for public/private partnerships established - Rehabilitation of priority feeder roads started using labour-based methods - Measures to build local capacity for road maintenance put in place	- Legal frameworks for electricity, water, sanitation, and urban infrastructure passed, and programmes put in place - Framework for public/private partnerships established - Pilot micro-hydro facilities underway - Diesel generators set up in at least 3 towns
	July – Dec.	- Priority roads rehabilitated and a plan for linking all population centres with market towns adopted - Plans for upgrading airstrips in war-affected areas prepared and priority actions initiated	- Water and sanitation facilities functioning in at least 50% of towns
2007		- Medium to long term policy and institutional framework for feeder roads management developed and implemented - Continued promotion of adequate access to rural mobility	- Access to electricity in all towns and larger villages - Diesel generators set up in all towns - Micro-hydro, solar, or wind power facilities set up in at least 40% of targeted areas
2008-2011		- Medium to long term plan for management and financing of road network developed and implemented	- Electricity services provided to at least 25% of the population - All health and education facilities have access to electricity - Functioning water and sanitation facilities in all urban areas

Table 4D.01: Extract from the cluster matrix for infrastructure in the Three Areas in the *Framework for Sustained Peace, Development and Poverty Eradication* (based on JAM 2005b: 53).

In order to reach a compromise between large needs, prioritization to fit with Sudan's low "absorptive capacity" (JAM 2005b: 5), and the production of quick, tangible achievements

('peace dividend'), two implementation phases were planned through cluster matrices, organized into three regions (North, Three Areas, South). The cluster matrix for infrastructure in the Three Areas, for example, reads as shown in table 4D.01.

One of the projects formulated under the Multi Donor Trust Fund-National was the South Kordofan Start-up Emergency Project. It was proposed to operate until 2007 to improve the secondary road network "through clearing of 50 km and grading of 8 km, construction of 3 bridges and 8 culverts" (MDTF-N 2005: 3).[295] To facilitate immediate results, went the proposal, local private contractors were supposed to be engaged, to be supervised by a consultant; equipment was to be leased from major national hardware companies, while the improvement of technical capabilities ('capacity building') was intended for the South Kordofan Ministry of Physical Planning and Public Utilities, which "suffers from an acute shortage of equipment and trained staff" as "[m]ore than 60 percent of the limited equipment that it owns is not in working order" (MDTF-N 2005: 9-10). The only other road construction occurring, according to the proposal, was directed and implemented by oil development companies building for their own use. The programme had an overall budget of US$ 1.8 million to be paid by the Government of National Unity (MDTF-N 2005: 37).

In parallel with this initiative, UNIDO was supposed to extend its Community Livelihoods and Rural Industry Support (CLARIS) programme, which had been running since 2004, to a Vocational Training College in Kadugli operating under the Ministry of Education. The practical training for "young people, women and other vulnerable groups in rural areas", offered to 200 persons per year, was intended to "lead to sustainable self-employment or employment within the construction, manufacturing or service sectors" (MDTF-N 2005: 11). Accordingly, the curriculum included fabrication, welding, vehicle mechanics, woodwork, joinery, plumbing, building construction, electrics, tailoring and sewing.[296]

The proposal also specified risks involved in the project's implementation, the level of which was considered high, because of insecurity and political instability. Furthermore,

> [l]imited capacity – both physical and managerial – in the state government, and in particular lack of experience in program implementation, may present a challenge for speedy implementation. In addition, difficulties in identifying qualified external technical assistance may slow the pace of implementation. Finally, experience with other MDTF projects suggests that transfer of counterpart funds from the GoNU may not occur in a timely manner (MDTF-N 2005: 21-22).

These risks were to be mitigated by the "recruitment and engagement of experienced national professionals for the Project Management Unit" (MDTF-N 2005: 22) or for units in UN agencies. In conclusion, South Kordofan is described as "a desperate but complex political and economic environment", where "[o]nly […] addressing the need for basic

services, especially among the most war-affected and marginalized populations, can […] help to mitigate some of the social and political instability in the state“ (MDTF-N 2005: 23).

Another MDTF-funded project was the National Emergency Transport Rehabilitation Project, the proposal for which was submitted in August 2006 (GoNU & WB 2006). It included two programmes relevant to South Kordofan, namely the “Road Improvement Program for Nuba Mountains” for US$21.2 million and the “Preparation of Rural Access Road Program for the ‘Three Areas’”, 690 km, for US$ 5 million (GoNU & WB 2006: 32-33).

The former was directed towards “the most critical river crossings”, and to the task of demining, construction and reconstruction of main roads to “break the isolation of Southern Kordofan”, “increase agricultural production, increase trade, lower costs of inputs and improve farm gate prices and access to markets, social services and employment opportunities”, thus fostering, “[n]ational unity and security as well as regional economic integration”. The implementation would be prepared by local consultants, while the construction would be supervised by an international consultant. The roads envisaged here were Kadugli-Kauda (135 km), Abu Jibayha-Talodi (160 km) and Talodi-Kadugli (150 km), adding to a so-called orbit road around the central areas.

The second programme indicates, as the highest priority task in South Kordofan, the Kadugli-Heglig-Bentiu road, with the aim of creating a viable commercial link with the South, and the Muglad-Abyei road, with the aim of providing villages with “a basic minimum standard of access to the rest of the country” (GoNU & WB 2006: 33).[297]

PricewaterhouseCoopers, commissioned to act as international consultants for the Multi Donor Trust Fund-National monitoring process, submitted quarterly reviews starting in January 2006, which were formulated into Project Output Matrices. The construction of the Kadugli-Kauda road gave the following picture (aggregated from PWC 2007-2010), showing many delays and, after three years, recognition of the need to redraw the plan, with no more than 20 kilometres having reached the stage of embankment by that point.[298]

Road construction and spot improvements	
Task	*Progress*
March 2007	
Contractor to demine to 26 m width Kauda-Kadugli appointed and free mining certificate provided	***Not achieved*** due to the slow pace by the National Mine Action Centre (NMAC) • 1st quarter: NHA attempted to contact the demining agency for initial arrangements, but there was no response. • 2nd quarter: The Sudan National Mine Action Centre (NMAC) provided NHA with demining plan; the plan timelines contradict with the planned road designs, a joint meeting between MOFNE, NMAC and NHA will be held in July 2007.

	• 3rd quarter: NMAC wrote NHA and informed NHA that the 4 roads under the feasibility study were mine-free. However, NHA could not reply on a letter for decision making purposes. NHA wrote back and requested NMAC to issue a certificate declaring the roads mine free. NMAC had not responded by the end of the quarter.
March 2008	
Supervision and construction works contracts for the first 40km of the Kauda – Kadugli road awarded and work started.	***No progress*** during the quarter. The procurement process for the supervision consultancy and construction works was held up by the delayed demining of the road.
June 2008	
Procurement process for the supervision consultancy and construction of the first 40km of the Kadugli–Kauda launched by June 2008.	***No progress*** during this quarter. The procurement process was held up by the delayed demining of the road in the first quarter. Demining was completed in June 2008.
September 2008	
Kauda-Kadugli road, first section (36.4km), second section (68km) & third section (12km): procurement process for the supervision consultancy and construction launched by June 2008.	***In process***. Demining was completed in June 2008 and certificate issued in July 2008. EoIs for the supervision consultancy and invitation to bid for the construction services published on 28 September and 5 October 2008, respectively. Kauda-Kadugli road, second section (68km) and third section (12km): procurement process for the supervision consultancy and construction launched by June 2008. Demining completed for the entire 80km and certificate issued in July 2008. 68km already surveyed and bid documents prepared. Prequalification exercise launched in September 2008. The remaining 12km were expected to be surveyed after the rain season in October 2008. Bid documents will be finalised once additional funding is availed.
March 2009	
Kauda-Kadugli road, second section (30.3km): Contract for the construction and supervision consultancy awarded and work completed on 15km of the road by 31 December 2009.	***In process***. The contract for the civil works, worth US$ 4.97 million, was signed with China Chongqing International Construction (CICO) on 26 January 2009. Draft supervision consultancy contract with Ashraf & Salah Consulting Engineers, worth US$ 0.16 million, was approved by the Bank on 24 March 2009.
Kauda-Kadugli road, first section (18.6km) and third section (74.1km): Contracts for the construction and supervision consultancy awarded by August 2009.	***In process***. The prequalification exercise ***was cancelled*** after three contractors submitted prequalification documents and only one of them qualified. Management plans to break the package into four smaller lots and use open tendering process.

March 2010	
Kauda-Kadugli road, second section (30.3km): Contract for the construction and supervision consultancy awarded and work completed by 31 July 2010.	***In process***. Advance payment of US$ 0.96m for the contract done on 15 June 2009. The contractor commenced mobilisation at the beginning of July 2009. Construction of permanent works commenced during the first quarter of 2010, and about 20km of embankment works had been completed.
Kauda-Kadugli road, first section (18.6km) and third section (74.1km).	Tender issuance ***was delayed*** for similar reasons as noted on the second section above. Invitation for bids was done on 6 August 2009 and the bids were received on 4 October 2009. In December 2009, the World Bank received official communication from the MoFNE that the first section was under implementation by the state of South Kordofan. The bank sent an intention to declare a mis-procurement for the section on 2 February 2010. ***Deliberations on the way forward*** for the World Bank and the allocated amounts were ongoing at the end of the quarter.

Table 4D.02: Progress of the "Roads improvements with focus on the Three Areas" part of the National Emergency Transport Rehabilitation Project, according to PWC 2007-2010, with focus on Kauda-Kadugli road (emphasis by the author).

Another network marked for extension was the electricity grid. In a Five Year Strategic Plan (2006-2011) produced by the South Kordofan State Planning Council, electricity produced was depicted as being "used only for basic services exclusive of the fundamental utilization in economic production" (MDTF-N 2005: 30), while solar energy, though having great potential, "particularly in rural areas", was seen to be currently used "for social services only" (MDTF-N 2005: 30).

The latter aspect was made central in MDTF-N's Community Development Funds project through the Solar Electrification Programme. The project was implemented in 10 localities, "selected according to urgent needs" in the words of the project proposal; in South Kordofan, the localities of Abu Jibayha, Rashad, and Keilak were chosen. Implemented by the governmental Energy Research Institute (ERI), the installation of 392 solar systems was completed in 10 villages in 2007 (PWC 2007c: 16).[299] According to the review, the ERI report did not document difficulties or recommendations, although the MDTF's Third Progress Report noted "[i]nadequate skills for effective operation and maintenance (O&M)" of many installed facilities (MDTF 2008: 59). At the beginning of 2010, a contract for solar panels in a further 200 villages was awarded to Solarman Company (PWC 2010: 10). In the same period, UNICEF had distributed 171 solar lamps to schools in coordination with the State Ministry of Education (PWC 2010: 19).

In its 2010 annual report, MDTF-North used the solar electrification of Abu Hashim in Blue Nile state as a success story, as the "tiny village of 5,500 residents now uses solar energy to

power its lights" – a radical change from its "virtual darkness" in 2007, "with no source of electricity apart from a few small, privately owned generators that only benefited the owners" (MDTF-N 2010: 22). It attributed the success and project sustainability to partnership with community leaders and bottom-up accountability, but only endorsed such arrangements "provided these community projects are integrated into the government's master plans at the state level" (MDTF-N 2010: 24).

It was, however, recurrently the case that the establishment of such community-government links was, to use this jargon, not only a problem of 'top-down' integration, but also one of 'bottom-up' resistance. In January 2010, for instance, an engineer sent from Kadugli to Buram, in an SPLM-dominated area, was blocked by the residents, who stopped the survey staff marking a 25 metre protection zone around a prospective road. The engineer returned to the General Secretary of the South Kordofan government and received a letter with orders for the Commissioner of Buram. The officials gathered at the time in the General Secretary's office stopped their conversation about the furnishing of their houses and investment firms for a moment to laughingly discuss 'those SPLM guys'. In Kauda, one official recounted, 'they' (the SPLM) had stopped a Turkish company from installing telecommunications masts, so seemingly they neither understood the necessity of the investments, nor appreciated the many things the NCP governor had brought: They must be wanting to live in the forest under the trees like animals, he said, since human dignity would demand that they embrace progress.[300]

Given the argument that the infrastructural projects facilitate national unity, the connections to be fostered thus are apparently not only those directly related with issues of surface treatment, overhead power lines and solar panels.

4E: Road constructions

The civil war in the Nuba Mountains was a guerrilla war. This meant that the establishment of new, previously unknown routes formed a basic part of SPLA's strategy, which was dictated by the necessity of avoiding government bases and roads that the government armed forces knew. Around Kubang, the most important point to avoid was Heiban, to which end older roads were revived, such as a detour from Kubang to the SPLA HQ in Kauda via *ḥayy* Naṣra (Upper Abol). The extension of these alternative roads both revived the British delegation system, via the Native Administration, and created new authorities within the frameworks of SPLA's command structure and SPLM's *buma-payam* system.

After the war, attempts were made to reconnect Kubang with Shawaya, Lower Abol and Heiban. The Kubang-Shawaya road construction was coordinated between the *buma* representative ᶜAz al-Dīn and Shawaya Native Administration leaders. ᶜAz al-Dīn had planned both the route and the construction according to the surface conditions and the evenness of the ground, while the South Kordofan Ministry of Roads and Bridges (*wizārat al-turuq wa al-ǧusūr*), in a rare instance of functional coordination with Kadugli, provided spades and other tools. The project was intended as a food-for-work programme, therefore the *buma* representative asked the village heads for lists of between 30 to 100 people, according to the degree of effort expected. Payment was provided by several organizations, among them SPLA's veterans' fund, the WFP and the Heiban Association.

ᶜAz al-Dīn claimed later that without payment in sorghum and salt, nobody would have worked. Some people in Kubang also demanded that old people be excluded, being unfit for 'real work', even though they were actually the main target group of the food-for-work programme.[301] Other negotiations about inclusion or exclusion also took place: Only areas with sufficient storage capacity could receive food deliveries from organizations, a fact that often excluded Abol, which lacked such capacities until a community centre was built there. The payment for the Kubang-Shawaya road, for instance, was stored in Kubang, therefore only six persons from Abol's *ḥayy* Qamr and ten from *ḥayy* Naṣra participated, since Kubang was perceived to be in charge, and not 'the *buma*'.

In addition, according toᶜAz al-Dīn's argument, the low level of participation of the people of Abol indicated a preference for money: The appropriate participation of 35 people would have been attracted, he claimed, if the payment had been in cash, as it had for the building of the Abol-Kubang road; furthermore, the timing of the project – directly after the harvest – had not helped to make food appear an attractive form of payment.[302]

In contrast to this situation, money had been allocated for the building of a road between Kubang, Ḥağir Bago and Al-Azraq. However, the Native Administration leaders of those

areas demanded 80,000 SDG, which the organizations involved were not willing to give. The administrative officer for Heiban Locality then persuaded the organizations to transfer the money to the Kubang-Abol road project, and thus the *buma* representative received a 1000 SDG commission for organizing and planning the implementation. Another highland road from Abol to Shawaya was initiated by the inhabitants of Shawaya themselves; again, the removal of big stones was organized by the *buma* representative and the Native Administration leaders.

In the end, these arrangements led to the successful construction of roads between Kubang, Shawaya, and Abol. Even so, disagreements were rife, as some felt that the village heads (*šiyūḫ al-ḥilla*), and not the *buma* representative should have been in charge to organize the work.[303]

Why was there a preference for these authorities? What happened?

Community-oriented development projects place much emphasis on establishing an organizational framework that will convince and empower 'the community' to invest time and energy in the project. The success of such an organization would be indicated by its continued, sustainable existence, and by the regular engagement of members of the community in activities demonstrating and reiterating this existence: In contrast to interest- / outcome-oriented forms of organization, the legitimacy of this approach is derived from the inclusion of its members, who accept each other as members of one community.

In British colonial ideology, communities in the Nuba Mountains – so-called tribes – were organized under central authorities, who could be appointed and addressed as 'Native Administration'. Native Administration had thus been used by the colonial administration as instrument of control and regulation, sometimes taking the form of the overlordship of 'educated' non-Nuba over 'un-educated' Nuba. This connection of governmentally legitimated positions of communal authority with political ties and the requirement of administrative abilities continued after independence. In fact, 'Native Administration' designates a multitude of socially and politically organizing principles.

Kubang, for example, had been divided before SPLA's presence into four quarters (*aḥyā'*, sg. *ḥayy*) which were separated from one another by riverbeds (*ḫayrān*, sg. *ḫūr*), namely *wuṣṭa* ('Centre'), *ġarib* ('West'), *sikka ḥadīd* ('Railroad'),[304] and *buluk* ('Company').[305] This division was connected with teams that played *qutta*, a hockey-like game; a quarter's representative was therefore known as *ra'īs al-grūp* ('leader of the group').[306] After the war, these *ru'ūs* (sg. *ra'īs*) were always involved whenever an equal distribution of work or gifts between the different parts of Kubang had to be organized. The former might include the construction of a

well or the building of a school; the latter involved the distribution of relief, when the *ru'ūs* were charged with preparing lists of the needy.[307]

In 2010, the village head (*šayḫ al-ḥilla*) of Kubang, presiding over the *ru'ūs*, was a former SPLA soldier. It was up to him to provide a demographic summary of the village population, and according to the last count, the *buma* had 4068 inhabitants, and Kubang was still structured into quarters (see Figure 4E.01):[308]

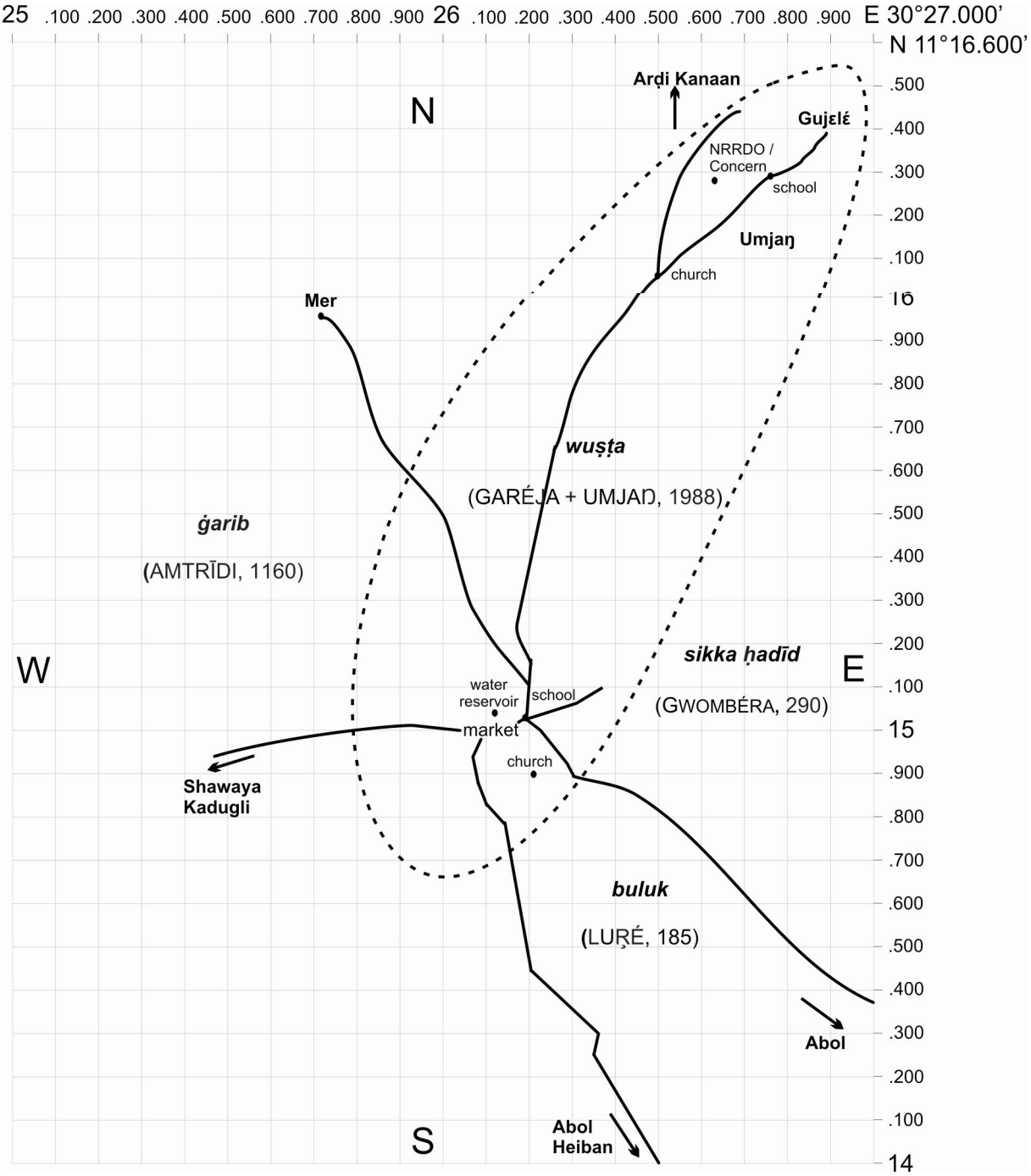


Figure 4E.01: Sketch map of Kubang in 2010, divided by roads ('Centre' has been indicated by broken lines to show its stretched form; names in brackets show the non-Arabicized names, numbers the current population according to the present village head; source: own fieldwork).

Under SPLA rule, this system was superseded by another one. The armed forces appointed 'civilian agents' (*manadīb*, sg. *mandūb*) under a leader (*ra'īs al-manadīb*), for instance, for the area Abol-Kubang-Umjang. The SPLA structure for the 'civilians' was arranged as follows: The revolutionary committee (*al-laǧna al-ṯawriyya*) was an umbrella organization, under which all *ru'ūs al-manadīb* were united; this organization extended down to the village quarter agent (*mandūb al-ḥayy*). Apart from that, there was the women's union (*ittiḥād al-nisā'*), and civilian security forces (*al-amn al-madanī*), both of which were subordinate to military security forces (*al-amn al-ᶜaskarī*) and therefore to the SPLA command. The secret pre-war organization Komolo still existed as a social network for its members, too.[309] Later the disabled veterans' fund (*mu'assassat al-muᶜawwaqīn*) was also added.

The competences were organized in such a way that the military command gave orders for army supplies to the revolutionary committee, whose members then forwarded them to the village quarter agents. Whenever a civilian caused 'trouble', the civilian security forces did the fact-finding, and then a report was submitted to the higher ranks in a system that continued after the war with the Executive Office (*al-maktab al-tanfīḏī*) of the SPLM administration. In the case of Kubang, the secretary of all of these various institutions, (apart from the women's union and the veterans' fund), was one and the same person, who still had lists of all their members.[310] The *buma* representative for Abol, Kubang and Umjang, the main link to the SPLM administration, lived in Abol.

The militarily organized system not only used and superseded previous forms of authority and administration, it also contradicted a Native Administration system which was based on the laws and structures of the central government, and even after the war these contradictions continued, now dominated by the SPLM system of *buma* and *payam*.

Across most of the Nuba Mountains, conflicts concerning the Native Administration were often about political ties, most obviously perceptible in cases of a double leadership of *amīr* and *mak*. While the *amīr* was part of the Native Administration system of the ruling party NCP, which was introduced in 1996, *mak* was often understood as a 'traditional' or even autochthonous term by groups projecting a revival of 'Nuba identity'. Many of these groups, mostly sympathetic to the SPLM, resisted the appointments of *umarā'* by electing their own *mak*. This double system led to confusion in many areas, and resulted in increased socio-political tensions among Kadugli, Miri, Shawaya, Tira, Masakin Tuwal, Leira, among others.

However, in a politically rather homogeneous village such as Kubang, the problem was rather that of overlapping principles of authority. One of the church elders pointed out, for instance, the problem of lack of those who could be 'leading' (*yaqūdū*) the way. This he differentiated both from 'traditional authorities' (*šiyūḫ*) or 'church elites' (*qiyāda kina'isiyya*). In his conception, the former organize social issues,[311] while the latter are supposed to lead in

religious matters, both of which he distinguished from the 'political' arena, including that of public administration.[312]

The ambiguous status of public administration was exacerbated by the war, and new authorities were both desired– as keys to development – and distrusted. This also affected development projects such as road-building. After the war, the role played by roads changed. People began to settle once again in lower-lying areas, and new demands meant a new need for roads. More so than ever before connection with larger settlements was sought, especially by those who had returned from the towns.[313] In the complex process of road-building, the supervising of which had been in colonial times the duty of the Native Administration, new authorities with new skills now became important. Due to these changes the *buma* representative with his experience in construction gained in Khartoum, dominated the process, rather than the Native Administration or other leaders.[314] But the resulting complexity of leadership has not helped the process of establishing regulatory systems to act as bases for the growth of functioning bodies for service provision, and disagreements about the 'right' form of leadership ensued.

Apart from that, a specific problem tends to occur in the growth of administrative networks that I want to focus on in the following: Whenever administrative centres operate without direct 'presence' in the localities in which they are attempting to coordinate physical changes, the communication of information about the situation in those localities has to be delegated. Maps are one of the main technologies used in this communication of information from afar, and existing maps of the Nuba Mountains are rather ambiguous, with many wrong names and multiple occurrences of the same villages.[315]

The most accurate recent map of the roads around Kubang, for instance, the JMC map of 2005, combines Russian topographical maps from the 1980s with GPS-based measurements made by JMC. But complexity can defeat clarity: Figure 4E.02 shows how the mountainous area between Kubang and Heiban 'swallows' accurate road information and makes it appear as if there is no connection between the two. Only direct, firsthand information could clarify the matter, and projects relating to so-called evidence-based development basically aim at creating networks that facilitate such firsthand information.

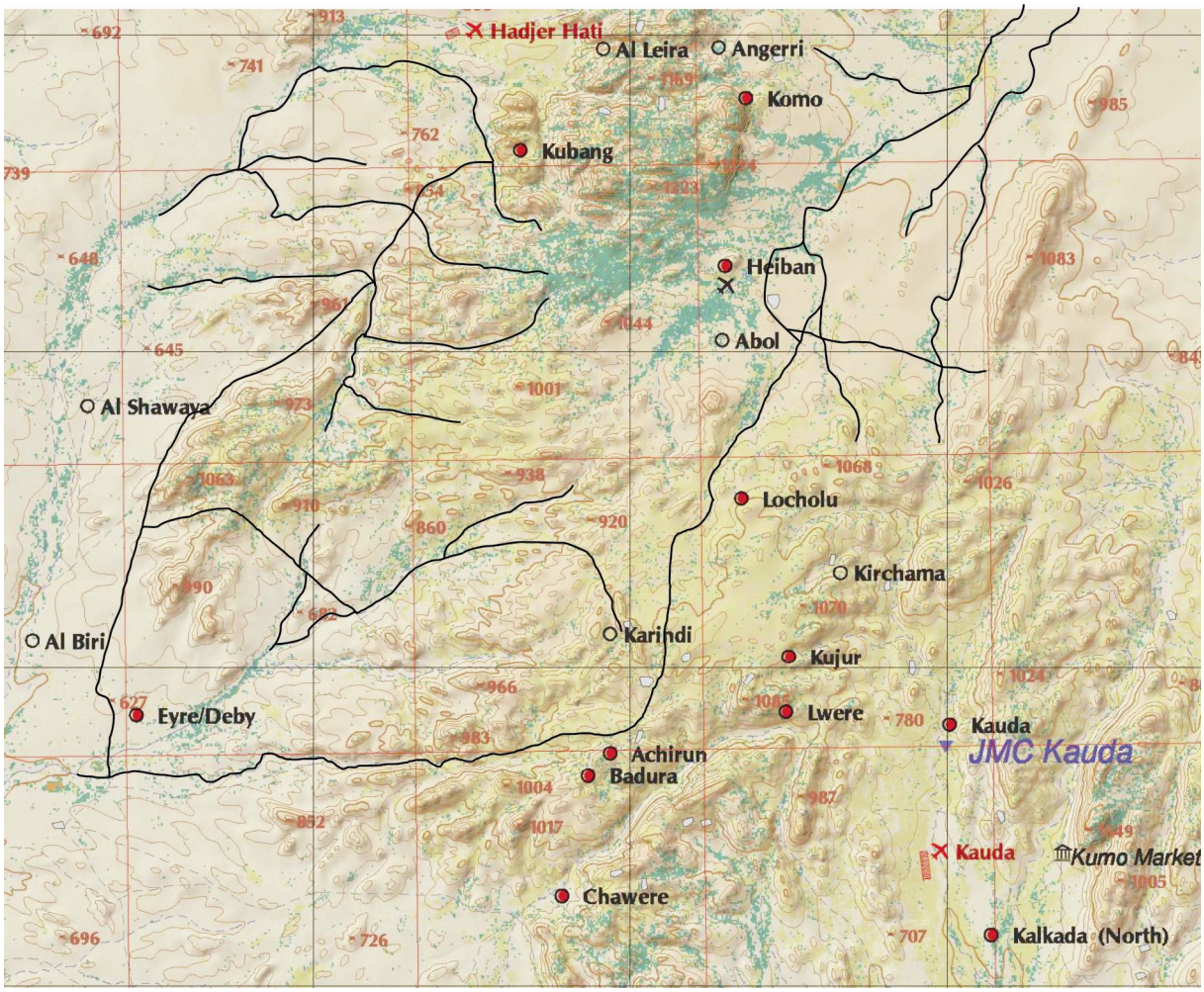


Figure 4E.02: Road networks around Kubang and Heiban according to Topographic Field Map, The Nuba Mountains 1:250,000 km, Centre for Development and Environment, University of Berne, 2005 (so-called dirt roads based on Russian topographical maps; markings by author).

5 Information

Still, in the end he worked out a method which would at least produce a result. He decided not to mind the fact that with the extraordinary jumble of rules of thumb, wild approximations, and arcane guesswork he was using he would be lucky to hit the right [result]; he just went ahead and got a result. He would call it the right result. Who would know?

Douglas Adams, *So long, and thanks for all the fish*
(Adams 2002: 538)

5A: Desks

When I imagine returning to Heiban and standing on the main square, sometimes occupied by football games, sometimes by rallies, I am inclined to think about public spaces. Food-for-work-based construction of roads not only extended connections, but also negotiated the terms of 'public service'. The project in Kubang related a newly established public administration system (*buma*) with an international UN-based organization (WFP), communal authorities (Native Administration) and a migrant association (Heiban Association), which belonged to what many development discourses debate as 'civil society'.

The Khartoum-based Heiban Association held annual conferences in Heiban, and its members regularly challenged established ideas of how Heiban's public spaces were supposed to look. This process was not without its own challenges. At the annual conference in Heiban in April 2009, one of the members from Khartoum suggested that Heiban's main road was in an embarrassing condition and had to be cleaned. One resident attendee vehemently refused the received implication that the inhabitants of Heiban were 'dirty'. However, during the actual cleaning process and during walks taken by the Khartoum residents in the small town, criticisms about garbage and lack of corrals (*zarā'ib*) for livestock, among other things, never ceased. At one point, a participant in the cleaning told the others that old people had been heard to wonder why 'these crazy people are cleaning the street'.

I remembered that many other contradictions had appeared, some more serious, some less so. The square was also the site of football tournaments between migrants and 'locals'; a regular element in the conference programme. Throughout the games the bad players were often the subject of jokes that played on the difference between 'migrant' and 'local', such as 'go back to Khartoum' or 'throw him out of Heiban'. Other expressions indicated further issues: When a quarrel began over whether somebody living in Heiban could join a migrants' team, one *local* player tried to insult a *migrant* with the words 'tradition people' *(nās al-turāṯ)*, referring to the migrant's membership in the folklore dance group of the Heiban Association. What seemed to surface in this comment was not only a contempt for 'backward' culture, but also an implied devaluation of dancing as 'effeminate', in contrast to the 'hard sport' of football. Indeed, the training methods of the Heiban-based team had a comparatively 'hard', military character.

During the conferences, the main duties of the youth, apart from some gender-based duties, were the cleaning and protection of various items at the conference ground. In addition to this general duty, they also organized a one-day picnic at the mountain of Ebaŋ, during which they climbed the mountain and gathered in aqueous caves. Music was played nearly every

evening, a film about Jesus with colloquial Sudanese dubbing was shown, and there were several youth programmes with educational speeches, sketches, and musical acts.

I remember also a group of young boys who crossed the square on their way to the Health Centre. Heiban Association members had organized a collective circumcision of these boys, to provide an alternative to the private circumcisions, which took place under what they considered unhygienic circumstances. Wearing long white dresses, *ǧallabiyyāt*, and T-shirts from the Egyptian Christian organization New Vision (*mu'assassat ru'ya ǧadīda*), the boys chanted hymns, led by the Association's women's committee. The physical imprint of both religious and communal belonging terrified many of the children, while the Association's executive committee celebrated with a photo their hope of having planted a seed of future commitment to the communities they sought to represent.

But the Heiban Association was not the only 'confusing' influence. By the *marīsa* drinking huts, near to the square, I was addressed by an old drunken man. His daughter, he told me, was married to a Norwegian, and she had told him that in Europe and America the government puts parents who beat their children in prison. For him beating (*ǧilda*) was the only means to make children well-behaved (*mu'addab*), and so he understood that in Europe and America children belong to the government, not to the parents. Another man nearby added that in contrast to 'the West' (*al-ġarib*) there was no governmental law in force in Heiban, no public prosecution or courts, only 'traditional' law (*ʿurf*) and 'traditional' mediation (*ǧūdiyya*). Some time later, the old *marīsa* huts were demolished by the local administration (*maḥaliyya*) to build new, cleaner kiosks. An incited man called a relative in the USA to report: 'The government is destroying houses here!'

These anecdotes mean more to me than simple recounting of occasional misunderstandings. They were part of a difficult and often painful process of attempting to identify what government and public administration actually is, and what it 'should' be. They also spoke of political processes full of uncertainties and ruptures: Heiban lay between two political poles, and therefore constantly experienced the tensions between the centres of power in Kadugli and Kauda, in addition to the tensions between state organs and INGOs.

Crossing the square, I would come across a compound built on land owned by the Protestant Church by the organization Norwegian Church Aid (NCA), whose situation represented these tensions very well.[316] NCA had the broadest programme in Heiban, covering the sectors of education, health, and water. From 2002 to 2005, NCA provided incentives of 150 SDG per month to pupils, and delivered books from the North Sudanese Ministry of Education *and* from Kenya, together with school uniforms, equipment, and training courses. While they opened health centres and clinics in other settlements, in Heiban they only provided the existing Health Centre with medicine.

But their main focus was water, and in 2008 two new pumps were constructed in addition to three installed by Save the Children USA.[317] Additionally, holes were drilled for 45 families to build latrines around them. In 2009, the priorities of NCA's headquarters changed, which resulted in a smaller budget, and the office in Heiban was closed. That year also marked the establishment of a separate country director for northern Sudan, while up until then operations had been directed from Juba.

Previously, South Kordofan had been administratively part of the southern programme of the organization, as 'Nuba Mountains', an arrangement inherited from the war. So the regional reports went through Juba to the HQ, as they had throughout the war, as did the budgeting and the monitoring. From 2009, NCA operated only from Kauda and Kadugli, and the former compound in Heiban, now empty, was supposed be used by a women's centre and different NGOs.[318]

This compound was only one of the 'public' buildings in Heiban, whose dynamics of filling and emptying, activity and stillness seemed unpredictable, and irritating to many. On another side of the square, the staff of the old city hall still waited to move into a new building. Sometimes, an NRRDO jeep stood there, with the registration plates of the SPLM police,[319] and young employees of INGOs addressed each other in their jargon of NGO English, talking about 'capacity building', 'training need assessments', etc. Meanwhile some older people might come by, putting garbage in plastic bags and burning it in return for payment by the local administration.

This administration still suffered from the same symptoms of illness it had during the war: those caused by its unsolvable ambiguities. The civil war had defined military zones of control, which were headed by actors relating themselves to the main political agencies, namely the National Congress Party (NCP) and the Sudan People's Liberation Movement / Army (SPLM/A). This zoned structure led to a two-tiered administration, and one of the major post-war struggles in the state concerned the transition toward a state in which governmental organs and civil servants were integrated into one administrative system.

But transitional arrangements met the same contradictions between structures and ambitions: While the CPA had created roadmaps of the way forward, conflicts over seats kept desks buried under mountains of paperwork. While the new constitution for South Kordofan had put administrative units on the track, control-oriented politicians didn't hand over decision-making powers.

I had often been exposed to the conflicts arising out of this tension between 'should be' and 'is', and the NCP-SPLM divide was not the only one: When I went to the Commissioner (*muʿtammid*) of Heiban Locality to express my research intentions, he reacted with friendly words and orally confirmed that he would provide any support I might need. When I crossed

the hall to his Executive Officer, however, the latter demanded a written document by an institution in charge. When I repeated my oral references, he grumbled angrily that this is not 'how things are done'. In one building, two organizing principles opposed each other: On the one side there sat a sometimes lenient politician with autocratic tendencies, obstructing the establishment of planning units and other institutions of collective decision-making. On the other side, a frustrated technocrat tried to occupy his field of work in a manner in line with what he assumed was the way of 'how things are done'.[320]

From the old city hall, I could look back and consider the newest building on the square, a so-called Peace & Development Centre. During the years following 2005, the life plans of both young and old migrants in Khartoum once again moved closer to the villages, due to the more recent extension of connections. Some regarded Heiban as an occasional place for visits and holidays, at least as long as there were no appropriate jobs, electricity, water, sanitation and road connections, although nature and weather were much more preferable.[321] Others saw themselves as taking on a much more active role in shaping the 'new Heiban'; for example a young student of architecture in Khartoum, who had joined a road planning project with members of the Heiban Association to provide this planning as a service to Heiban's public administration.[322]

One of these people shuttling between towns and villages, James, regarded the fragmentation of development activities and information as the main problem. James had experience in the field of development since 1994, with teaching, workshops, and projects. His idea was to build a Peace & Development Centre, where all information about development activities would be collected together along with evaluations about the needs of the communities, and where workshops could take place, with offices, a library etc. His motto, 'peace and development', reflected his view that the establishment of the former would provide a basis for the latter.

With his idea, he won a competition run by the World Bank, the so-called Peace & Development Market. The competition initially had 550 participants, but on the second level only 85 were selected, and finally his project was chosen, along with 13 others, to be awarded US$ 20,000 support and a consulting supervisor. In May 2008, he had done some workshops with members of the SPLM administration and those with experiences in NGOs, but the construction of the Centre opposite the former NCA compound only started at the end of July. After he had used all US$ 20,000 to build an empty hall, the only remaining manifestation of these activities was one other roofed site for occasional workshops.

With all his elaborate ideas about peace and development, he had seemingly no clear ideas about how to collect, document, administer and link information, or about what kinds of

devices and software etc. to use. In his presumption the simple existence of a centre appeared to be enough to convince enough people to share and support his intentions.[323] Considering the complex processes of data production involved in development cooperation, however, I was doubtful that he would ever succeed in translating his ideas into practice.

5B: Organization of data

In most programmes for economic development, the increase of production is a major area of interest. These programmes, however, are often not started 'on site', but from afar. The situation at the site therefore has to be represented in the offices where decisions and plans are made in a way that makes sense. The fate of any site, whose development is dominated by externalities, is thus subject to many decisions taken based on representations of this site; in other words, these decisions are taken based on far-fetched facts, the production of which crucially requires detailed observation.[324]

The example here was taken from a recent internationally funded project designed to increase production of small-scale food producers in South Kordofan. The organization of data production in this project is redrawn from the perspective of a data processor, Deepak, who contributed both to a baseline benchmark survey of the inception phase and to the subsequent report. Deepak was only one of two data processors for this project, but his colleague, Rāsiḫ, had shown neither interest nor ability in tackling computer issues, although it was he who had studied statistics and accounting. However, Rāsiḫ's English and Spreadsheet skills were weak; the work was therefore dominated by Deepak. Deepak's recruitment had begun with the initial contact between him and the project team in the first month of the baseline survey, August 2007, initiated by Sābit, the National Consultant (NC) for the project. He became involved in the creation, translation and typing of the questionnaires until the end of the second month. This was followed by data collection in the third and fourth month, and he worked with the team until the beginning of the sixth month of the survey, when the inception report was completed.

The creation of this report is followed from Deepak's point of view, in order to trace the various processes of data collection, processing and analysis, and to observe from his perspective how the report constructed the 'reality' the development project was intended to emerge into.

Selections

One of the more obvious reasons for choosing South Kordofan, including Abyei, as the location of a project was its status as a 'Transitional Area' in the Comprehensive Peace Agreement, denoting its political middle position between north and south. Traversed by former military lines and now overlapping zones of political influence, the numerous conflicts and contentions in these areas led to it being seen as a crucial testing ground to determine whether and in what ways the two partners would stick to the agreements they made. In this

sense, it was at least a gesture of political goodwill to support the economic stabilisation of these states.

However, this 'gesture' itself became involved in the contentions it wanted to buffer or even to prevent, especially due to its involvement with basic functions of the state government. The project targeted the administration of agricultural production in some areas with very fertile soil; in other words, it related to the main economic activity of the state, involving one of the main natural resources of the region. The contentions became apparent, for example, during the initial process of selection of specific locations where the project would be implemented.

When Deepak talked for the first time with the Technical Adviser (TA), on July 27th, 2007, this selection process was still underway. The point of contention was Abyei, and the negotiations represented the political setting of the whole project. In the outline of the project, Abyei had been included explicitly as one of the prospective locations, but the state's Minister of Agriculture, with whom the project team worked, categorically excluded it with the official argument that it was 'insecure'.

The next condition imposed by the Minister, Deepak said, was that of excluding all regions where the organization IFAD was active; this concerned the eastern and western parts of the region. In this way, the Minister's demands left only a central strip between the towns of Kadugli and Talodi. When the TA and Deepak talked again on August 3rd, the Ministry had finally given the former a long list of villages in this area. This arrangement presented them with so many little decisions that the criteria of selection became blurred.[325] However, it seemed that most of the agricultural sector was intended to be brought under governmental control without immediate administrative responsibility.

Nevertheless, the TA claimed about a week later that the actual selection of a specific area had been made by him. He already had some background materials on the region, mostly recent reports by UN agencies and INGOs, but also several scientific articles by social scientists and economists. Using maps made by UNDP, he had taken as a starting point one of the central nomad routes, beginning with Abu Safifa in the north, and drawn an oval to the south until it reached Buram. In this way, the project's office in Kadugli and the Moro hills near the former JMC HQ Umm Dorein marked the borders of the east-west axis of the oval (see figure 5B.01).

Having selected the sites, the TA then reflected that his previous projects in other African countries had always needed about 1.5 years for experimental preparation workshops in order to learn and test the roles to be played during implementation by those targeted through the project. Therefore he planned to start community participation not later than

December or January, after the draft inception report of September had been approved, and thus also the budget.

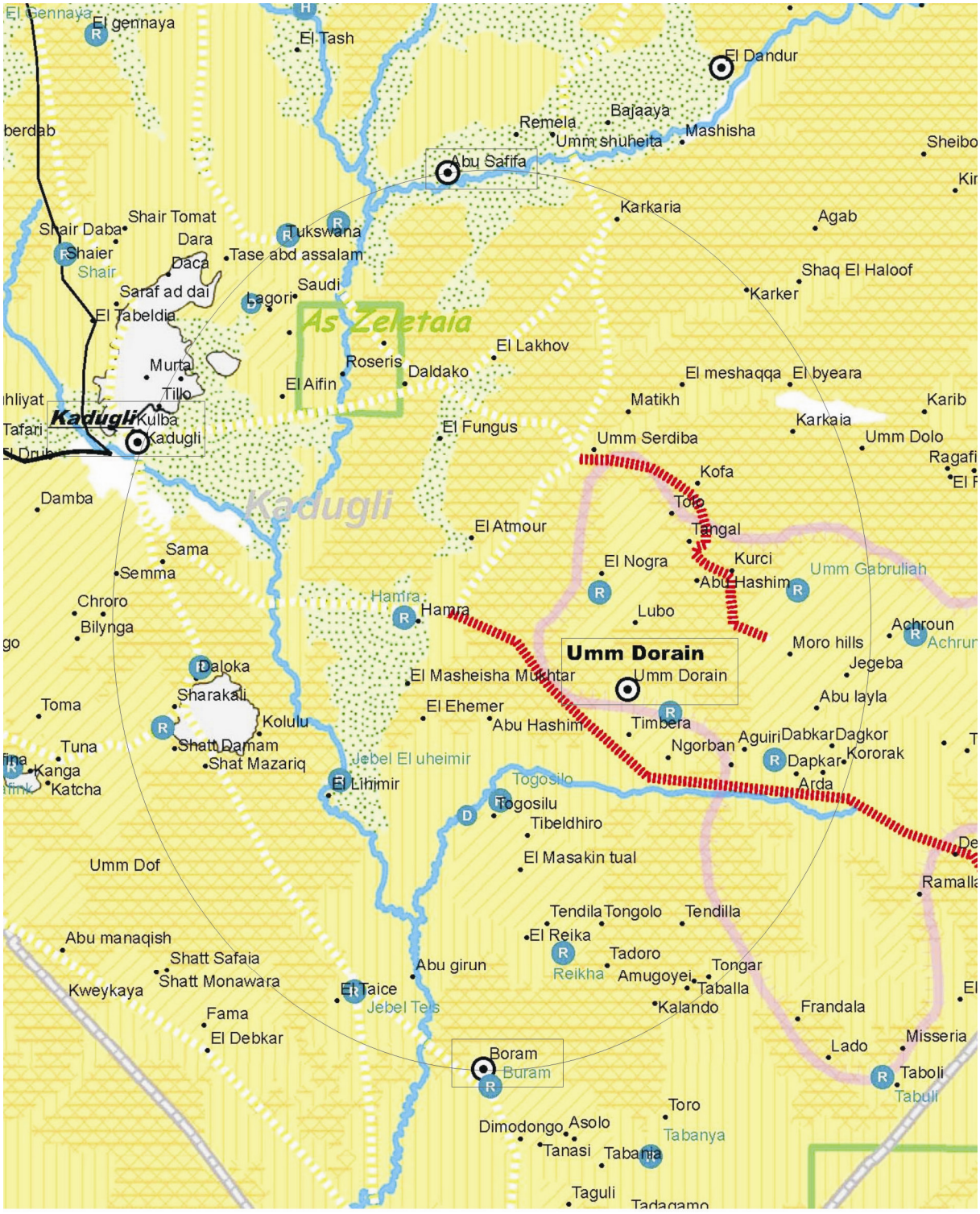


Figure 5B.01: The Technical Advisor's demarcation of potential intervention sites in South Kordofan on a reduced map of UNDP's Threat and Risk Mapping and Analysis, Southern Kordofan and Abyei, Transhumance and land use, October 17th, 2007 (markings by the author).

This plan was based on the assumption that the first results of the baseline survey would be available by that time. The latter's medium, a lengthy questionnaire, had been in preparation by the International Consultant since the beginning of August. The framework of the survey was defined by a "Project Strategy Logframe", the last draft of which was finished by the IC on August 12th, before a meeting with the survey team, which had been recruited in the meantime.

Codes

In the Strategy Logframe, the IC described the selection process as qualified "on indication of South Kordofan authorities", and he cited this as justification for excluding IFAD areas to compensate the centre of the region by "a peace dividend" and to avoid security problems in the no-go areas in the west.

The stated *development objective* was "[t]o reduce the vulnerability and enhance livelihoods of rural households (pastoralists, agro-pastoralists and farmers) in Central South Kordofan State through complementary action aimed at increasing incomes, improving food security and rebuilding productive capacities".

The *defined strategies* to achieve this objective were 1) the "elimination of key obstacles to the equitable utilization of natural resources" and 2) the "development, testing and application of an integrated approach" towards livelihood improvement. The steps taken by the *first* strategy 'should', it was projected, prepare the ground for the *second* strategy, which was to be followed through the implementation of small-scale model projects. The resulting 'micro-strategy' would be constructed as a learning process, initiated, structured and controlled by the project. At this point the question was where and how assessment, as a method of control, would be embedded.

For the four years of the overall project, the IC defined the following two *specific objectives*:

1. "To improve farmer and pastoralist livelihoods by upgrading water yards and boreholes, promoting water catchment, strengthening first line animal health care, and farmer-pastoralist conflict prevention"
2. "To design, test and implement on a model scale an integrated approach to rebuilding productive capacities, increasing incomes, and improving food security of farmers and pastoralists".

The IC then defined five *intended results*:

1) improvement of crop management practices
2) improvement of storage methods
3) improvement of processing and marketing techniques and systems

4) improvement of livestock and rangeland management practices
5) improvement of representation and service provision by selected representative organisations for their members.

These intended results were then translated into a method of control through the following procedure: The first step was the definition of *performance indicators* – in other words, measures of success. The second step was the definition of *monitoring variables* in benchmark and impact studies; i.e. the questionnaires and reports that were about to be created.

Of interest at this point was the way in which the performance indicators, which were thought to make the achievements of the project assessable, were formulated and translated into monitoring variables and the associated questionnaire through which this assessment was to take place.

One example of this translation is from *specific objective no. 2, intended result no.1*: "Improvement of crop management practices". The IC set six indicators as increases in:

1) crop yields for "traditionally grown crops"
2) number of months a household produces enough for its subsistence needs
3) adoption rates of project-introduced crops
4) areas grown with traditional and new crops
5) quality and quantity of diet
6) income resulting from crop production.

The monitoring variables simply describe the *status quo of the indicators*, by qualifying "diet" as number of meals per day per month, number of meals with meat per week, and number of meals with vegetables per week.

The next step was the exact definition of the variables, listed in a *code-book*. The code-book contained the numeric and semantic representations of these variables, which were themselves representations of answers given by respondents to certain questions. The mentioned indicator "crop yields for traditionally grown crops", in this case sorghum, was codified as variables 201-204 and 1203-1204. In detail, 201 represented the area grown with sorghum during the agricultural year 2006-2007 and 203 its total yield; 202 quantified the area for 2005-2006 and 204 the respective total yield. 1203 and 1204 were the relative yield per unit of agricultural land, i.e. kg sorghum per *feddān*.

Finally these variables were put into *direct questions* as part of a questionnaire, with 'stage directions' for the data collectors. In this way, the specific objectives were translated into a code-book and questionnaires with almost 600 variables.

Questions

One month prior to the finalization of the code-book on September 16th, the IC, the NC and Deepak met once again on August 17th, this time in order to discuss the questionnaire. Deepak felt that the mere fact that such a discussion took place was significant.

The IC had an academic background in development sociology, Sābit in human geography; Deepak himself had studied social anthropology. Both the teamleader and the IC showed an interest in the other two's involvement for *additional insights*, but Deepak was not sure how significant this interest was *structurally*. The teamleader had tried to acknowledge the value of anthropological insights in a meeting some days before by quoting a case study about the role of development agents in intensifying local conflicts by helping to institutionalize contentious local divisions. None of these insights were about to enter the setup of this new survey, however.

Until this point, the questionnaire consisted of a general section and a part specifically about sorghum. The IC stressed several times, partly ironically, that it should not be too long or too complicated, in order to avoid creating excessive work; he had already had to 'spend a whole weekend to finish the draft'. This concurred with his later remarks that many of the rather detailed and ethnographically 'grounded' objections would be 'too anthropological' or 'too qualitative'.

Some details of the composition process were made apparent from the draft: While he took information about the main crops from a recent FAO report, aspects such as horticultural activities, cattle property of farmers, the camps of nomads and the impact of a post-war situation were underrepresented or even absent from the draft.

He stated that he considered a questionnaire specifically about sorghum to suffice, because horticulture is not a significant branch of production in the region. Sābit disagreed, saying that horticultural production was increasing due to urban migrants, who had increasingly started to invest in horticultural projects. Nevertheless, any aspect of a rural-urban interaction remained completely absent in the assessment to the very end.

The IC was also surprised to hear that some nomads remain for long periods in specific places, i.e. summer and winter camps. Sābit stressed that the exclusion of water supply to the nomadic camps was one of the weak points of the project, a point brought into later drafts. But the crux was that nomadic-sedentary relations were understood as reflecting a simple dichotomy between pastoralists and farmers.

In the draft of August 17th, this aspect was evaluated in only four questions with five variables concerning stock routes. After the discussions of the meeting and later interaction with Sābit and the Technical Adviser, the IC extended these five variables, under the title "Farmer - livestock owner conflicts", to twenty variables, of which stock routes were only the last five.

The new variables concerned questions such as how many problems existed, the nature of those problems, whether they increased, decreased or remained the same, possible reasons for any increase or decrease, and suggestions about how they might be solved.

The underlying rationale of these questions would become relevant to the technical issues Deepak had to deal with later. Both sets of variables were partly quantifying, partly qualifying. Variables 80 and 84 asked the number of problems in the past three years, even if zero; pastoralists were asked, as a group, about farmers, as a group; farmers were then contrasted with pastoralists. Afterwards the type of problem was to be specified.

Several assumptions made by the International Consultant can be deduced from the way in which these questions were asked and the kinds of answers that were expected. The basic idea appeared to be that farmers had problems with pastoralists and vice versa; cooperation was never assumed, only opportunities for conflict management. So there was a kind of 'supposition of antagonism', because the expected answers were always couched in terms that attribute the blame to the 'other' party; for example, 'farmers / pastoralists did this, farmers / pastoralists did that'. A neutral or even negative answer, attributing blame to their own 'side', was not expected, such as, for instance, 'this happened by my cattle / my people's cattle did that'.

Regarding loss and compensation, the questions again excluded certain options: The farmer could state that he had suffered a loss, but not that he had received compensation; the pastoralist could state that he had paid damages, but not that he had been a victim of damages inflicted. The basic picture here was that a 'pastoralist' caused loss and damage for a 'farmer'. No other causalities and events were presumed.

Other questions held a 'supposition of documentation', even if memory was taken as the main medium of 'documentation'. The calculation of an exact percentage of a loss had to be made by imagining a situation in which "in the past three years you had harvested altogether twenty sacks" and then stating how many of them would have been lost. This means that the respondent had to remember all damages paid during the last three years, as well as the monetary value of what had been paid in kind.

Those identified as 'pastoralists' were also asked about the health of their animals. The chain of questions went as follows: How many cattle did you have 12 months ago? How many cattle died of disease in the past 12 months? How many animals died from lack of food in the past 12 months? How many animals died from lack of water in the past 12 months? etc.

In this case, a cattle owner was supposed to be able to identify a single reason for the death of members of his herd. This implied that it was possible to attribute a single cause of death to an animal or animals. What should he say if he had insufficient feed and water for his cattle, which, weakened, then died of a disease? A more puzzling question: If he was to state

his animal wealth one year ago, and the percentage of animals dying during that year was also to be calculated, how could the growth of his herd, by birth or by acquisition, be integrated into that calculation?

Something similar was done for farmers. They were asked about problems that lowered their yields in the following way: Did you have any problems that lowered yields? What was the most important problem? How many sacks do you think you lost as a result (of that main problem)? And what was the second most important problem? How many sacks…?

In this case, the farmer was meant to quantify how many sacks of sorghum he lost due to a specific reason. This means that he would have had to distinguish between the sorghum he lost due, for instance, to lack of water and that lost due to bad quality seeds. Additionally he would have to quantify it (number of sacks).

Both questions later resulted in a set of often unusable data, whose treatment kept the IC and the data processors busy for about a month. Several implicit interpretations existed regarding 'who is to blame' for this poor data.

The IC claimed he had used the questions successfully on numerous previous occasions, suggesting - without saying it - that either the respondents, the data collectors or the data processors messed it up. This was his persistent explanatory model, which he expressed by claiming some mistake in the procedure, and he formed it into a final recommendation to train and control data collectors and data entry staff better.

Deepak himself claimed that the IC's approach was messed up. In his view, the IC had conceptualised the pre-project rural society as a more or less isolated community in order to make it quantifiable. In this conceptualized 'reality', development agents and governmental authorities only occasionally drop in, and dichotomised actors confront each other: farmers and nomadic pastoralists, though not depicted as being without some common interests (everybody was asked about cattle property) were nevertheless characterized by many other aspects that seemed to polarize their relative positions. Explicitly, however, Deepak wrote in his emails to the IC only that they, the data processors, had checked the data they received, and that this was all they could do.

In contrast, the National Consultant Sābit conceptualised the targeted community as being part of a social space consisting of a continuum of urban-rural movements and migrations, structurally and individually affected by a long war and the institutions it generated, and to different extent involved in political and economic discourses beyond its geographical scope.

Within the framework of the production of the inception report, Deepak realized that the IC's concept was the dominant one, maybe unavoidably so. He had to see that the approach preferred is one that allows the creation of a closed and numerically perceptible experimental space as its operational basis, rather than that of an open, or to some extent permeable,

social space, which could be handled only by a process of continual negotiation of interpretations.

Only after this meeting was Deepak included in some of the internal email correspondence. He received the Project Strategy Logframe on August 17th, sent by the IC, who also promised to update the questionnaires with the new additions later that afternoon. Soon afterwards, the IC wrote to the teamleader (TL), the Technical Adviser, Sābit and Deepak:

> I have discussed and agreed with the TL that more detailed analyses for specific crops should be linked to specific micro-projects. E.g., the present sorghum forms could be adapted to be used for an inventory of cotton cultivation if a micro-project is carried out that focuses on improving cotton cultivation. Questions can then be added as far as relevant (e.g., on planting distances, should the micro-project pay attention to that).
>
> In short: more detailed analyses of cropping practices and crops are, as far as desired, to be done as part of micro-projects, in the course of the project, but we cannot fit them into the benchmark study now. I imagine the NC may be available for short term inputs in the coming year(s) to assist you in this. Perhaps, if considered necessary and there is room in the project budget, I can also give some additional input.

Translations

The data collectors were to be Sudanese, and since the regions they would go to were not English- but Arabic-speaking, the questionnaires had to be translated.

After the pre-selection of sites had taken place, the IC and Sābit flew to Kadugli on August 18th in order to test the draft questionnaire. They came back on August 22nd; according to the NC it 'went well' in the targeted villages. The trial conducted only two interviews a day, because Sābit had to translate from the English questionnaire into Arabic, and then to answer questions by both the respondents and the English-speaking IC.

The linguistic situation faced by the project presented several challenges to mutual understanding. Viewed from the 'questionnaire's point of view': It was written in English by a Dane, its structure derived from a mixture of academic standards defining how best to represent activities of rural agriculture and animal husbandry, and was expressed in the briefly worded, technical style used when demanding information for operational quantifications.

It was then translated by a native speaker of a Nilo-Kordofanian language, who had learned Arabic as his language of instruction in primary school, and English in the course of his university education. He considered the aim of the translation to be that of creating questions with the same breadth and intended meaning as those in the English version, yet also understandable for the Arabic-speaking data collectors and the later respondents. Although he had to follow the original exactly, he also had to consider that the data collectors had only

limited understanding of this original - partly because of their limited knowledge of English language, partly because of their exclusion from the original's assumptions. He also had to consider that the respondents would most likely have only limited understanding of the formal, written Arabic.

Formalized, written Arabic differs considerably in vocabulary and advanced grammar from the colloquial forms, a pluralism that most Arabic speakers with a formal education are acquainted with. However, the translator assumed that the respondents would for the most part be unfamiliar with it, so the questionnaire had to be translated yet again at the point of its application, i.e. in the interview situation. The data collectors were brought into this situation, with only one day of training and a lot of trust in their abilities to translate, in the sense that they were expected to be able to preserve and communicate a meaning and intention they understood only to a certain limited extent.

Much of the questionnaire consisted of words and concepts that suffer little if any blurring or ambiguity when translated from English to Arabic: A question about the number of goats is not significantly changed whether it is asked in formal Arabic (*ᶜadad al-ʿaġnām)* or in the colloquial *(kam ġanamāyya)*. The accuracy of standardized units such as the kilogramme, too, are not altered in the slightest in being referred to, for instance, as *kīlūġrām*, but rather by practices of weighing, so any possible deviation of the answer from the 'actual', measured amount has not to do with the accuracy of linguistic translation so much as the accuracy, or lack thereof, of the conversion of variably standardized units such as *malwa* into kilogramme.

But the more that abstract concepts and specific institutions became the topic of the questions, the greater the importance of the translation became. The following questions deal with specific forms of organization:

4.17. Is there a committee or village association in your community?

4.17. hal yawǧid ayy laǧna aw ǧamᶜiyya aw ittiḥād aw rābiṭa fī muǧtamaᶜikum?

4.21. Are you a member of a farmer / livestock owner / horticultural / fisherman union?

4.21. hal ʿanta ᶜuḍū fī ǧamaᶜiyya / rābiṭa / ittiḥād al-muzārʿīn, al-raᶜāt, muntiǧīn al-fawākih, muntiǧīn al-ʿasmāk?

Committee and village association, in this context, refer to specific institutions; for instance, a Water User Association, or a Village Development Committee. This notion was difficult to translate without using specific examples, which were to be avoided in the questionnaire. The Arabic translation into *laǧna*, *ǧamaᶜiyya*, *ittiḥād* and *rābiṭa* transforms the original intended meaning into four dimensions of association that cover almost every form of gathering. A *laǧna* could be either an election committee or a group of experts who go to a field to assess the damage livestock has caused. A *ǧamaᶜiyya* could refer to both a family assembly and a cooperative. *rābiṭa* and *ittiḥād* could be taken to refer to almost any larger

association of people with similar interests, such as a migrant association, or a worker's union.

Similarly, the notion 'union' was intended here as an association of producers and workers who are connected through similar interests based on production and work relations, and who defend their rights and demands accordingly. The translator had to react to the situation that in Sudan different unions are referred to in different ways. While the governmentally controlled supra-regional union of farmers is called *ittiḥād al-muzārᶜīn*, some sorghum producers registered together as *ǧamaᶜiyya taᶜwūniyya*, which could be translated back as 'cooperative'. In this instance, then, the translator simply listed the same words as used in the previous example, thereby blurring the specific original notion. In consequence, most respondents answered only the first question, apparently feeling the second to be redundant.

After the translation, Deepak and Rāsiḫ both became involved in the project and undertook the task of typing up the translated questionnaires. Both worked during the first two weeks of September, without knowing each other personally. After the National Consultant, Sābit, had returned from a week's stay in India in mid-September, he prepared to leave with the now-ready questionnaires to South Kordofan for the data collection.

Data collection

Because of his language skills, most of the work on the details of data collection was done by the National Consultant: the whole translation process, the training of the data collectors, preparation of village enumeration and sampling, supervision of the five working days of the data collectors, and the first revision of the questionnaires. Deepak was not involved in these tasks, but learned some details from Sābit's Benchmark Survey Report and through conversations with him.

Sābit had travelled to South Kordofan on September 19th and tested the Arabic translation of the questionnaire in two model villages for two days. Then the final selection of six villages and the precise time frame of the data collection were agreed upon in a meeting with the Technical Adviser and the head of the Statistics and Planning Department of the Ministry of Agriculture. On September 23rd, Sābit informed the Programme Management Unit (PMU) in Khartoum about the required copies of questionnaires and sent the final version of the translation, which he and the International Consultant had modified after the first testing. Then he asked the PMU to send the copies to Kadugli; after about a week, the questionnaires arrived in the Ministry.

The interviews end of September were organized with six data collectors working as two teams conducting four interviews each (per data collector) per day, (i.e. within an eight hour work period), in six villages, with members of three target groups, namely farmers,

horticulturists, and pastoralists. With a sample size of 20 individuals from in each village, 120 respondents were covered in total.

The Ministry had selected the interviewers from among its employees, who were trained for their task by Sābit on September 28th in a workshop; one aspect of this workshop was the items on the list 'Dos and don'ts in interviewing' drawn up by the IC. For introduction, he had written:

> The most important factor in making an interview a success is the attitude of the interviewer towards the person that is interviewed. The interviewer must be willing to take the posture of someone who is learning – as indeed he/she is – from the person being interviewed, and must at all times show interest in the answers being given. This is reflected in the general list of "do's" and "don'ts" in interviewing that is given below. The purpose of these "do's and don'ts" is to develop a fruitful dialogue between the interviewer and the person being interviewed, by creating an atmosphere in which the latter feels free and confident to express his/her knowledge and opinions freely, and is actively and passively stimulated to do so.

On September 29th-30th an introductory meeting with local leaders, and a village enumeration, took place in the six villages. The village enumeration was, ideally, a complete list of households and their heads, including an identification number, name and sex of the head, livestock property, main income, and self-perceived economic status, i.e. moderate, poor, or very poor. Apart from the names and the livestock property, all information was to be codified.

From September 31st to October 3rd, Sābit classified the households according to their main income and created a random sample. He then sent the prepared lists of interviewees to the interviewers, who informed the respective persons about when they, the interviewers, would come.

The survey itself was conducted from October 3rd to 7th, and Sābit ensured during several visits that no obstructions, for instance by community leaders, occurred. After returning on October 8th, the data collectors reviewed their forms for readability and codification, and Sābit returned on October 10th to Khartoum. During the second week of October, the questionnaires arrived at the PMU, ready to be processed.

Most of Sābit's report avoided mentioning conflicts and political implications. It suggests that the selection of the six villages, for example, was completed during a short meeting in the Ministry, and only a short description of location, structure and economic production appears, although many intentions had in fact influenced the choices. Only his final remarks change this impression slightly, speaking about the relationship between the development project and the communities. Initial meetings in the village, he wrote, had been arranged so as "to inform the village authorities about *the intended visit, its purpose, timing and the people to*

meet with". A village enumerator from the community was selected by their leaders, who "should be literate preferably graduate or primary teacher who knows the village very well".
However, Sābit remarked that of his various observations, "two [potential issues] might be useful to consider in the process of project implementation", specifically 'relief culture' and 'survey frustration'. Without hinting at 'who was to blame' for these issues he suggested that every effort should be made to establish a "culture of development" through a "sense of collective ownership". Furthermore, he depicted the frustration felt by many local communities "due to too much surveys and data collection" as having been caused by the absence of actual implementation – "just like what you are doing with us now", as one community member was reported to have said.
Many questions about previously received support were answered negatively, although it had obviously existed. For one of the villages, the migrant community in Khartoum had formed a development organization, which cooperated with international NGO's in several projects inside the village. Still, only two of ten farmers mentioned any support.
The question of why most respondents claimed never to have received governmental or any other support also formed part of a discussion between Sābit and the Technical Adviser in December 2007, near the end of the report. The TA didn't consider this point of sufficient relevance to put it into the planning; he also wanted to avoid the project becoming 'too big' through the inclusion of details of governmental work.
Sābit, on the other hand, mentioned the agricultural extensions, which were long-term representations of the government in the villages in the past. His example was a village where a former employee of the Ministry of Agriculture still lives as member of the community, although he originally came from a different region, and feels that, despite the fact that he is not paid in that capacity, he is nonetheless the representative of the Ministry of Agriculture in the village. The 'absence' of references to such a past in the statements of the respondents, so he thought, had to be understood, in order to avoid something similar in a new project, especially the ignorance of local expertise.
The latter, however, entered the benchmark survey only filtered through the 'masks' that were worked out for the data processing.

Masks

In August, the deadline for the baseline benchmark report was set as the end of November, with an inception report due in September; a similar report was to be created at the end of the project. At that point, the data collection was planned for the end of August and beginning of September. But soon initial delays indicated that the actual report would be finished much

later, and by at the end of December the International Consultant was still unable to send the final reports.

On September 22nd, the IC presented the final version of his mission report for September. Therein he described the procedures to be used in data collection, data processing, and analysis; Deepak began reading this report from the point describing data processing.

The IC stipulated the creation of a data entry matrix, with the variable numbers displayed along the y-axis and respondent numbers along the x-axis; this was to be done on paper. He added that "a data matrix is not essential, but experience has shown that is helps reduce errors" being "particularly handy to quickly identify widely deviant values for variables, so these can be timely corrected".

On September 17th, the IC contacted Deepak by email in order to start a discussion about the details of the data processing:

> I've understood from the NC that you will be involved in the data processing for the benchmark study, though definitive arrangements have not yet been made. Though it will be a while yet before the data become available it may be useful to already discuss how to go about the processing and especially the presentation of the data. I am now working on the latter, see the attached file for the presentation of the data of the general part of the survey form. It might be a good idea for you to review this carefully and, unless everything is perfectly clear to you, to drop by at the office to discuss the way things are set up. Again, that might seem a bit premature, but note I will only be here until coming Tuesday and will not come back until November 7, by which date the first batches of data should, according to our planning, have been processed and presented in tables as presented in the attached file. Some communication will be possible through e-mail, but I'm on holiday from September 5 to 25 and moreover, looking at the set-up together is probably easier than resolving issues electronically. So if you have some time available please review and get in touch on whether and if so, when we can meet!

The email had as an attachment benchmark survey tables, and Deepak understood the aim of the whole exercise as being to fill tables, which had been created by the IC to be used as quantitative basis of the inception report. What followed was indeed a long trial to resolve issues electronically, and extensive email conversation with the IC ensued.

The process of data processing started on October 14th. Since Rāsiḫ had shown no inclination to engage in work outside established procedures, and in any case had never been asked to, Deepak began to consider the best way to get the answers from the questionnaire into the prepared tables on his own. The way that the first masks for data entry were then created, by Deepak, could be considered 'unprofessional' in the sense that their creation was the result not of the specific application of standardized steps learned through education and experience, but rather of the spontaneous invention of a procedure informed by occasional previous dealings with databases and lists and the needs of the moment.

He disregarded the suggestion of a data matrix, and rather took the code-book and entered the variables sheet by sheet for every single village and every single group, in order to count all the data together at a later step. He had considered such an approach advantageous in that it would allow the opportunity for later analysis village by village. At the same time, he noted down observations linked to specific answers, instances of apparent misunderstandings, and other supplemental aspects of the data collection that were suppressed by the codification. In short, he worked intensively, but ineffectively. Rāsiḫ did not even digitalize his work immediately, but took the questionnaires to his night job and noted the codes and numbers in a paper notebook. The result was multiple files of mixed text and numbers, kept on different sheets of paper in different folders, and thus inaccessible for joint analysis.

Deepak had already indicated their working method on October 19th, saying that they "still work with the code book as template for the data entry and process the data into the tables later on". Only later did he start to transfer the tables from the Word documents to Excel spreadsheets, and announced on 8 November that they "finally came up with a first result". But since this meant four weeks working on only a relatively small part of the overall task, the IC, who had finally returned to the Sudan, along with Sābit, Deepak and Rāsiḫ, decided in a meeting on November 9th to change the system. The resumé reads:

1) Although significant progress has been made the process in the current form is too slow to allow for finishing all data analysis and presentation on time, before December 7. The main bottleneck is the time involved for the processing expert, Deepak, in direct data entry per table, as practiced until now for South Kordofan. Direct data entry circumvents the making of a database, but has to be done by the processing expert.

The structural problem, so to speak, was that the responsibility for the undertaking of two different tasks – data entry and data processing –was concentrated on only one person, and required that person to use a procedure that could not be accelerated by use of a mechanical routine. Deepak's interest in recording detailed observations had threatened to disrupt the whole time frame of the project, and only a return to the initially instructed procedure, the data matrix, could 'save the day'.

The impact of this misunderstanding was still felt much later, and the work always lagged behind. Up until end of November, Deepak seemingly felt he had to make excuses for the situation, with comments such as "at least a data matrix for the mean- and median-related values exists". The necessity of a solid numerical overview, however, remained noticeable until the end, when the IC demanded additional analysis for the annexes of the report:

> There is still some information I require from village enumeration in South Kordofan. I do assume you digitize / have digitized the village enumeration data together with the survey information? Needed: village enumeration data on gender to be matched with main source of income. This will tell us something about the main livelihood of female-headed households, which I expect to be field crops. One of the few gender things we have - so I would like to see this.

Another persistent source of delay was caused by changes made to the original tables, which always took considerable time to implement, while the subsequent gaps between intention and implementation caused regular frustration for both IC and the data processors. The former felt he had to deal with rather slow responses of his staff under time pressure, while the latter felt they had to compensate for the IC's flawed preparations by working additional hours.

On November 15th, the IC began to ask that the data processors use, for tables with reasons (i.e. qualifying answers), the number of actual responses, rather than the total number included in the overall sample, as the basis for calculating their percentages. Ten days later, he observed that "in many cases you still work with the number of people interviewed - rather then with the number answering the question", and on 1 December he repeated:

> I just started with the field crops, and noted that you still calculate percentages based on the total sample, as a result of which in all instances where cases are missing the total does not add up to 100. If this is a lot quicker for you, OK, then I'll make the adjustments, otherwise, if it does not cost much extra time, please use the number of respondents (total in Table) to calculate the percentages.

But in cases in which two answers, both percentages, whether based on n = respondents, or n = sample, did not add up to 100 %, the IC and Deepak had agreed to add "no answers" as an option, thus arranging it so that the number of respondents equalled the total number in sample. The IC had deprioritized this later, however, after Deepak had started to change the tables, and therefore he now sent a slightly frustrated message:

> The percentage you mention is exactly how it was in the beginning (% of respondents) before we decided to change it to the whole sample. Therefore I would have to rework something I just worked in before. Anyhow, I am not sure if it wouldn't be better to show the answers in the relation to all interviewees and to add simply a 'No answer' row as you did in some cases. A general question just answered by 5 persons would show 3 as 60%, which seems to distort somehow that we only know what 5 of 120 (f.i.) think - a similar problem like in democratic elections, when only 30% elect and then announcements speak about what 70% of the nation want...

The IC answered shortly the other day, that the use of the category "'No answer' works when it's just a few cases, not when it's 20% or more". The problem, from Deepak's point of view, was that in cases in which no answer was available, the IC interpreted it as meaning "not that there was no answer, but that in so many cases apparently the question wasn't asked at all", a reference to recurring procedural problems on a lower level.

The case-sensitivity of the adjustment of the tables continued to cause problems, however, and three weeks later, when Rāsiḫ had been working alone for some time, the IC began to show his frustration, as is evident in this message:

> One more clarification for the production costs – though Rāsiḫ should know this by now, I've indicated this on at least six occasions! No. of farmers should be the farmers that have spent on something, meaning that value of 1449 is not 0. And percentage is that number of farmers as a percentage of the whole sample (or the number for which data are available). Please confirm this is now clear.

Numbers

The IC had written in the mission report that "the data matrix is used to facilitate data entry into the computer". After the decision had been taken on November 9th to change the data processing system, the new procedure was to employ a group of students in teams of two, of which one would read the variables from the questionnaire, while the second would type them into the computer.

The efficiency of this task, however, was also partly determined by how clearly and correctly the answers had been codified, as the data entry staff were only performing a mechanical task. The interviewers had been instructed to write the answers, as given, during the interviews, and to codify them afterwards. But at this point a revision of all questionnaires was required to check for coding errors and to produce new codifications of those answers not conforming to the pre-coded ones. Since this task had to be performed by those acquainted with all previous steps, Sābit, Deepak, and Rāsiḫ had to add this to their other activities.

To avoid the difficulties involved with guessing, in case of inconsistencies or errors in the questionnaires, what the original answer or misunderstanding might have been, the IC had given this advice:

> Reviewing the coding will also give the opportunity to look for any inconsistencies, errors or other shortcomings in the answers given, notably in terms of identifying values that deviate very much from the rest. This should therefore be done as much as possible in the field, as this will give the opportunity to check such issues with the interviewer. In such cases the corresponding section on the interview form should be checked carefully to see if a correction is warranted.

> Coding of the forms should be done as much as possible the same day that the interviews are done, checking of the coding can then be done the next day by the state consultant. Any issues can then be resolved at the end of that day, after the interviewers have returned from the field.

After the meeting on November 9th, conclusions reached then began to be implemented, and Sābit wrote to the IC on November 11th:

> Tomorrow the selected students will be briefed about the work and they are expected to start their work next Saturday. Meanwhile the three of us will be working of correcting and or coding or recoding the other questionnaires. Deepak is also preparing the needed format to start with.

The task of these students was to go through the questionnaires and to enter each variable in the relevant location in an Excel table. As suggested by the IC in his mission report, the y-axis was used for the variables (1, 2, 3, etc.), while the x-axis, the letters along the head of the table, represented respondents.

Two elements made the task difficult, and caused most of the later discrepancies: The mechanical nature of the data entry induced many of the students to perform it with the relaxed attitude that one might naturally hold towards such seemingly easy, repetitious work, and they then fell into the trap of reduced awareness of irregularities.

Not all variables were successive numbers: For instance, 1-5 existed, but not 6-9; in consequence, sometimes lines were missed and data put under a completely different variable. On the x-axis, the trap was that respondents were categorized according to their main productive activity; as either farmers, horticulturalists, or pastoralists. In addition to the general survey, each group had also been asked further separate questions on other forms. To keep them apart in the matrix, certain groups of columns were connected to certain groups of producers, for instance A-AN represented the farmers. Data entered in the wrong position on this axis then caused overlapping when different sections were put together in the central data matrix.

After a short while, Deepak began to feel like a lower level version of the IC. The simple little systems he had developed were sometimes either only partially understood or even simply ignored. This tendency began even with the file names, which were not titled according to the pre-existing system – <name of state>_data matrix_<name of producer group>_<date> - but instead with a colourful assortment of personal names, fragments of information about date, state, and variables, which caused immense loss of time when file corruption occurred and the tedious search for filled fields in the misnamed Excel tables began.

But Deepak admitted that he was not prepared to attempt to provide a flawless theoretical system as a template; many uncertainties appeared only during the working process, and meanwhile mistakes were made that were difficult to trace afterwards.

The proposed procedure involved multiple reproductions and translations of the answers: from the mouth of the respondent to the written entry on the interview form, to the codification in the evening, the review by the NC afterwards, the transfer of the codes to the data matrix, the entry into the computer from the data matrix into the survey tables with parallel calculations by the data processor, and, finally, the analysis of the resulting data by the IC.

The system of multiple control points to ensure 'clean' or minimally distorted transfer of information did not work out as hoped, but rather operated as a maze of overlapping translations with many obscurities. Deepak, who engaged in all direct contact with the IC, had on October 15th already started to address these 'obscurities':

> Inconsistencies, mistakes aso. [sic] in the questionnaires: Would you rather have us to decide ourselves from case-to-case, or would you like to give a feedback first? To give an example: In a general questionnaire with a pastoralist two reasons are given for the reduction of number of meals per day: lack of rain, and lack of durra. The second one, however, is not a reason, but a result of a reason, so the answer doesn't fit the idea of the question, so none of the given values can be used. Question would be: Should one treat the second reason as not answered, or should one guess, what is meant (the data collector interpreted the answer as: lack of food aid - but it could be everything else). I would favour the first option.

The IC was on vacation at that time, and answered that they should use their own best judgment and interpretation to work out the tables; so the work performed between that time and November 7th was to be governed by that judgment. Deepak had therefore noted down all the various interpretations he made during this time, and ended up in a situation of having many insights, but few results. After returning and reengaging with his own work, the IC, too, noted after a week, that "especially interpretation - reworking of non-coded values took more time than expected".

The next month and a half was characterized by a constant questioning of the results of the data entry and the subsequent processing, during which process the IC doubted the unexpected and the unlikely, and Deepak tried to identify the mistakes in oceans of numbers. On many occasions, he and Rāsiḫ had to dig again into the paper version of the information to find out what might have gone wrong between that point and the entry into the tables: Was it the interviewer? The coding? The entry? The formulas?

Since he himself occupied the middle field of the data production hierarchy, Deepak could not help but think that this middle field alone was the object of doubt, because two critical questions were not asked by the International Consultant when trying to discover the possible reasons for error, namely: Was it the *question*? and, subsequently: Was it the *one who formulated the question*? The request the IC made to them was always "please check all the tables that have not been checked yet".

Tables

In order to translate the numbers into data for analysis, several calculations had to be made: means, medians, and frequency distributions. While Deepak had certainly calculated averages before, he had to scratch his head about the median, and had certainly had nothing to do with frequency distribution before. This lack of experience with quantitative data bothered him, and the prospect of gaining such experience was one of the reasons he had agreed to put himself in this situation. But it meant also a time-consuming struggle with spreadsheets in Microsoft Excel.

Deepak was aware that the formulas he had to write were not at all complicated, and the task was clear from the Terms of Reference:

> The data processing consultant is to make the indicated calculations (no. and % of respondents in the different frequency ranges, means, medians) in his/her data processing program, and then pass the information on to the tables in Word.
>
> In case only one answer is possible frequency distributions mostly entail indicating the number of farmers per frequency range (e.g., cultivating between 1 and 3 feddāns). In case more than one answer can be given the data to be presented is the number of times the answer is given and the % of the total number of answers given (e.g., answers to the question what the reasons are for not cultivating a larger area of land, to which two answers can be given).

Several sets of tables had to be handled here: general information per type of respondent, and data on sorghum, field crops, horticulture, and livestock. Mistakes were foreseen, as well as necessary adaptations and corrections of tables, and it was "therefore important that the data processing consultant remains available to respond to corresponding requests".

In one and a half months, this data processing consultant moved from active consideration to frustrated laxity. When Deepak had asked on October 30th, he was still told to use his own judgment:

> To calculate the median of livestock (general information, variables 33-37), would you prefer us to leave out the nulls, as we count before only the numbers of farmers who have cattle, goats aso. [sic]? Or shall we give the number and percentage of livestock owners, but calculate the median based on the whole sample? As I understand it, the first option would say something about the wealth of the livestock owners, the second option would state rather the level of livestock property in the whole sample. So it is a question of what is more relevant.

On December 18th, the IC sent a note of harsh criticism, suggesting lack of self-initiative by the data processors:

> Please assume a critical attitude to the data and the outcomes. Until now you have seemed to do just the mechanics of the calculations, but you also have a key role in judging if the data and outcomes make sense. I can pick out some extreme things, such as the above, but not others,

> and especially, I cannot check with the forms. Actually, it shouldn't even get so far as my having to pick out such extreme values, they should ring a bell with you straight away, and you should act, verify and correct.

The data the IC had criticized was the average yield per *feddān* in 2006-2007, which was calculated from the yield (variable 203) divided by the cultivated area (variable 201). He marked two impossibly high values of 36,090 kg / *feddān* and 45,000 kg / *feddān*, which were caused by the high yield being given as 1203 and 2000 sacks, respectively.

At this point, Deepak was exasperated to such a degree that he refused to go back once more to two of the several hundred questionnaire sheets in order to find these two numbers, and so he wiped out the error in two steps: First he deleted the last digits of the yield, 3 and 0, because 3 and 0 were also written in the row above and seemed to have been typed again erroneously after the 'real' values 120 and 200. When this produced no viable result, he deleted the numbers altogether. The IC had only older versions of the matrix, he supposed, and could only judge according to the calculated average whether the new value was 'right' or not.

How did the initial enthusiasm for data processing transform into these practices of data distortion? A juxtaposition of Deepak's private comments to me and his written comments to the IC shows how his sense of frustration had built up with successive setbacks.

After the meeting on November 9th, the IC had started to go thoroughly through the first results. The first observation he communicated to the data processors, on November 16th, was also related to the issue of yields of sorghum, but in this instance the situation was the reverse of that mentioned above: the values were too low. But since these values had been processed before the data matrix, one by one, Deepak was sure of their validity. As it turned out, the problem had started only after the data entry, because the IC had written the variables 200 and 201 instead of 201 and 202 in the survey forms, an error that was then transferred to the Arabic forms, and accordingly typed into the matrix. Only at the end of December was the source of this error discovered.

A second observation came one day later:

> Could you please check the figures for livestock - mortality from disease, starvation, lack of water, and off-take due to sales, theft, and exchange / giving away? The percentages - means and medians appear way to high -if you add them up you arrive at a reduction in animals larger than the herd size. I don't know if the problem is in the survey execution or in the data processing, please review at your earliest convenience.

No, Deepak said; the problem is the *question*. The size of the herd at the beginning of the year was asked for, then the number lost to disease, starvation, and lack of water, (all of which could in fact occur at the same time, as noted previously) but then there followed no

questions about acquisition or purchase of livestock, nor about any other means by which herd size might be increased. Respondents were understandably confused, but such confusion was a problem the IC didn't seem ready to consider.

For a week, one "check this" chased another. Meanwhile Deepak had tried to arrange the Excel tables in such a way that the formulas worked. But even the medians were not immune to distrust, as the IC indicated:

> I frequently come across medians with one decimal. As you know, the median is the "middle" value, so a median of 3.5 heads of cattle, to give an example, should not appear: no respondent will have given that number. In some cases a median can have a decimal if it concerns the value of a calculated variable, e.g. yield per feddān, but otherwise it should be - how do you call it, an integer?

No, Deepak said, and wrote in reply that an odd number of values characteristically has a median that is not an integer, but has a value of *n*.5; for instance, the median of 1,2,4,5,7,8 is 4.5. In that case, the value behind the comma should *only* be 5, nothing else, the IC answered, "I'll take another look to see if that's indeed the case for non-calculated variables". Deepak grumbled, slightly chagrined, that the IC should have done this in the first place; but he wrote no reply to the IC's email.

The frustration about tiny corrections taking too much time increased, and on November 24th Deepak asked if the IC could bundle the requests:

> It is easier to have a complete group of variables and to go through the papers once than to do that for several variables several times. The three days since Sunday we very only busy to work on smaller corrections. In the present situation I think we should concentrate on the greater tasks. The deadline draws very near, and still major things have to be done. Do you agree?

The IC suggested that the data processors put the single emails into separate folders, but promised to try to bundle. However, Deepak had felt pressure increasing as the task entered its third month. Despite being only the second data processor, he still felt that a large part of the detailed knowledge of the process was held by him, and he felt burdened by this position. He wanted to take a break, to spend his days doing something other than manipulating numbers and formulas, frustrated by the lack of qualitative 'flesh' on the numerical bones of the tables. Finally, he lay down with a headache and was unreachable for a couple of days.

When Deepak came back, the bombardment of questions was still the same, or even intensified. He pulled himself together and fixed the last discrepancies as far as was possible. Now, sitting in the Omdurman office in the midday heat, he read the last email from the IC:

> Thanks very much for this last clarification. As far as I'm concerned, that wraps everything up (though I may still run into something in my last review of the documents!). I would still like to receive the corrected databases, and also the data of village enumeration. Can you send those? Thanks again for all your efforts, good luck with your research, and keep in touch.

Deepak's primary research had nothing to do with what he had done over the last months, and a part of his frustration, heightened sensitivity, and laxity had something to do with that fact. Finally, he decided not to answer the email and not to send the matrices, in order to avoid further discussions about missing data and mistakes. The report was due to be submitted in the next couple of days, and the IC had written about his last steps:

> In the evenings here I am making some progress in wrapping up the work, but it is slow going. One lesson learned: I am not going to work again on data that were not thoroughly checked on the forms, at the time of coding, and at data data entry [sic] - it just takes too much time to go back two or three times over and adapt tables, text, and conclusions. A lesson to be learned for all of us, because it has been more work for the whole team - with time pressure as an important culprit, but not the only one.
>
> I think that again, bringing the forms to your office was premature, as I still encounter problems - not many, fortunately - in the latest files that may require checking with the forms. But perhaps in the report I can and will gloss over those and write around them. That approach would mean, however, that the errors remain in the database.

A day later, the teamleader had answered:

> I'm sure we all share the lesson learnt as you have pointed out. Anyway, if issues still require to be checked back, it can be done here if Rāsiḍ or Deepak can find the time to do so. For practical purposes I think that at this stage your proposed solution to these issues 'gloss over and write around them', though unsatisfactory from a professional point of view, might be the best solution. We do need the reports.

Reports

A week later, the final report arrived. Deepak was most interested in one question that was discussed immediately after he had come back from 'leave'.

On December 19th, the IC had asked in an email why only a small percentage of farmers had stated that they received income from selling in the market. He wondered if in such cases perhaps nothing had been cultivated, although total crop failures seemed to him improbable, as did the singular usage of sesame and groundnut for home consumption. A processing mistake was also recognised as a possibility, as when "some farmers couldn't give estimates, and value 0 was given".

Sābit had answered that in a subsistence economy the absence of marketing is the rule, and "that we are talking about communities just trying to recover from a long devastating war", therefore "three or four years are not sufficient to bring their productive capacities back to normal". He received the reply that this would most probably not be the case for "typical" cash crops like sesame and groundnut: "I would assume, therefore, that people growing these crops sell most of it. Is that a correct assumption?"

In the report, the IC wrote that between 50% and 60% had not earned any income from field crops, which he related to the 50 to 55 %, who did not grow sesame or groundnut, "which are mostly cash crops". He confirmed his own assumption, and ignored any non-numerical factors Sābit had mentioned – The word 'war' appeared exactly twice in the report: the first when South Kordofan was initially classified as 'war-affected area', where it was used as a mere keyword without further elaboration, and the second when it was claimed that the existence of almost 20% of all households being female-headed "is likely to be due to the fact that the region was a war zone during the civil war".

A similar way of thinking compromised the reliability of the data about main sources of income. The aim had been to divide the 120 households sampled into those whose main incomes were provided either by agriculture, horticulture, or livestock, to give samples of 40 of each. The IC qualified that during village enumeration some information had been provided by the enumerator himself or key informants, and that the actual sample consisted of 53 field crop farmers, 28 horticulturalists, and 33 pastoralists.

His explanation was that during village enumeration interviewers, key informants or household members themselves overrated the relative importance of horticulture and livestock. "Where heads of household did this it may have been induced by leading questions from enumerators. Then, during the survey, the heads of households corrected themselves and indicated field crops rather than horticulture or livestock as their main source of income."

No household was found to depend on agricultural labour as their main source of income; only 5% had non-agricultural activities on this level. He also added that

> livestock is likely to be seen as a form of *wealth* rather than as a source of *income*: that is, a household may own considerable numbers of livestock – a source of wealth – but only sell a very limited amount, or none of their herd, generating little or no income. On the other hand, dry land farming can raise significant income. However, while the size of the area cultivated and the quantity of produce in storage may reflect household wealth to some extent, they do not represent it in the same way that livestock does.

For Deepak, two points were critical regarding these facts. First of all, the category of 'main' was in this case fixed and treated as an obvious, documented fact, while the questionnaire actually dealt with members of communities where regular cash income is not a dominant

economic category. Fluctuations of capital were much more a regular phenomena: One year, a great yield could provide a good source of cash, while the next year one of the goats might have to be sold.

But this aspect of income had to be differentiated further. For instance, the main occupation in terms of working time was not necessarily the main income source. In a discussion with Deepak, Sābit quoted the example of his father, who was by occupation a farmer, but received much higher monthly payments from his son, a well-established scholar, than he got from cash crops. His son, again, could cover only half of his monthly costs with his income from his main employment in the university, but had working contracts, rent from tenants, and other sources of income. Thus the exemption of 'other income' from the sample, and the blurring of the categories of 'main occupation' and 'main income' were, analytically speaking, highly questionable.

For Deepak, the problem was that the International Consultant concentrated on the figures of the questionnaire, thereby excluding the possibility of developing a more understanding interpretation. The analysis was conducted as if the system used to identify, gather and sort the data was a 'black box', assumed to have no effect on the data, but merely to be filled by whatever the survey found. Thus the survey fed its own assumptions, for instance in the case of its preconceptions about 'rural economy'.

Deepak reflected therefore on the main limitations of the report, which seemed to be: a) time constraints, i.e. concerning the time necessary to either invent a new format or to compare different possible standards, leading to preferences for specific routine solutions; and b) the right language, i.e. to avoid 'striking a wrong note' by presenting observations in an inappropriate or less understandable way; *inappropriate* meaning in this case outside 'how things are done', *less understandable* meaning deviation from standards of presentation, and thus from expectation.

In order to more closely approximate 'how things are done', he considered lessons learned from the language used in the report:

1. Avoid specific names in official documents; speak as if specific persons are exchangeable representatives of functions, for instance, IC, NC, TL. This aspect had to be qualified, of course. For instance, Sābit mentioned the specific names of data collectors in his report, because they were the staff the Technical Adviser had to work with in future; i.e. their exchangeability was limited. The IC suggested acknowledgements to be added as annex to his report, too. Nevertheless, the named persons were depicted as members of a group defined by their function, and as such they were valued as "one of the key factors", but never 'blamed' personally.

2. Leave out everything that could be seen as blaming, and circumscribe deviations from the plan as technical problems caused by technical – i.e. 'objective'– obstacles; present all problems as maybe difficult, but nevertheless solvable, if approached in line with the recommendations given; etc.

3. Structure the report in a non-chronological fashion; this means presenting working processes as mechanical, causative, and therefore repeatable steps, and not as the lurching trial and error process they really have been. One obvious rationale for such a 'laundering of the facts' is the vital importance that a report does not convey any impression of 'bumbling around' within the framework of a project that is, by definition, aimed at 'capacity building' through the transfer of expertise.

From Deepak's point of view, the report simply presented a surface behind which the whole complexity of its creation disappeared. But Deepak's actions and interpretations were related to his position in the project: The temporal limit of his employment also limited the weight he laid on the consequences of his work. In fact, the report was a significant element in the collaboration the project tried to initiate, and was an important instrument of communication and control for the project management that tried to coordinate this collaboration. Deepak neglected, so it seems, to recognize this aspect.

5C: Evidence-based development

A main problem of management is to be informed about what exactly is being managed. This necessitates the *collection* of information, which should give an – ideally – complete picture of the situation. Referents therefore have to be created to represent reality in forms that can be translated into directives. This implies that whatever information is lost on the way should not be relevant or important enough to distort the result beyond practicality.

In development cooperation, this problem has multiple layers, caused by the inherently ambiguous nature of the various translations that occur. Based on the logic that the lack of sufficient information is a fundamental problem of development, the concept of 'evidence-based development' has been coined (Forss & Bandstein 2008). It seeks to improve the collection and analysis of data, or to help public administrative organs to develop the ability to do so. Seen from this point of view, it is crucial to incorporate many small points of data collection into a network of information.

Several models have been developed to facilitate this extension of networks. UNDP led the development of several databases, for instance, to connect points of data collection. Among them, the Sudan Aid Information Database (SAID) was developed as part of the UNDP and Ministry of International Cooperation (MIC) Capacity Development for Aid Management and Coordination project. The goal was to have a database that serves as an aid management and coordination tool, promoting 'good governance', 'public accountability' and 'transparency'. According to its stated intention, it will enable the government and donors to track and analyze aid flows into Sudan and ensure the effective access to development aid data. The system will track funds and map both proposed and approved programmes and projects by sector and location. The current web-based SAID system has been populated with data covering the period 2005-2011.[326]

A quick look through the tables of the database tables reveals some contradictions and gaps. It surprises, for instance, to find both 'Nuba Mountains' and 'South Kordofan' as regional categories, with a mass of agencies appearing as active in the latter up to 2011, but only UNDP and World Bank active in the former until 2007, because of a single example, the Nuba Mountains Community Empowerment Project.[327] Among the executive agencies, one finds only FAO, GoNU, UNDP, UNICEF, UNIDO, UNMAO, and Vet-Care, while the large programmes of IFAD and numerous other organizations are missing. NCA, a major contributor in South Kordofan's NGO landscape, appears only once with a number for 2006, but never for South Kordofan; Samaritan's Purse and NRRDO do not appear at all.

What leads to such contradictions and gaps? Are they simply symptomatic of initial difficulties, which will be eventually managed? Can a constant improvement and extendability be presumed, once a database system has been installed?

One of UNDP's other attempts, the South Kordofan database of the Threats and Risks Programme (TRP), was instigated by UNDP's Resident Coordination (RCO) Officer in Kadugli, who asked in 2008 for a TRP database about non-governmental institutions and their activities, based on his own data collection and on the database of UNOCHA of 2006, saved in the UN Sudan Information Gateway.[328] The RCO had replaced NMPACT, which had operated under UNOCHA as long as the region was classified as being in a situation of emergency.[329] This replacement indicated the change of status of the region, in the UN system of classification, from 'relief' to 'recovery and development'. While both UNOCHA and UNDP continued to collect data, TRP was established as a data collection point for information generation and management under the umbrella of the Bureau of Crisis Prevention & Recovery in UNDP (BCPR). The main outcome of this work, the so-called Threat and Risk Mapping Analyses (TRMA), resulted in several maps showing the status of facilities and the existence of UN/NGO projects.[330]

The objective of the South Kordofan database was to support GIS-based, cartographic depiction of this information, especially for the analysis of lack, conflict potential and the need to act, but also to make this data management transferable to the state authorities. I discussed the details of the database with the Database Coordinator and with the Deputy Chief Technical Adviser, in order to examine conditions of transferability.[331]

From the point of view of the Database Coordinator, all planning and development starts with information or else fails through the lack thereof, and therefore TRP's data processing played a crucial role. However, verification and correction of the collected data was not part of the mandate, and no control agency existed. In fact, the database suffered from lack of data transparency and flaws in the definition and usage of variables, but the coordinator considered that this situation reflected the status of the database as a work-in-progress, and that the problems encountered would be solved over time.

The data were mostly collected in the district of Kadugli from sources cooperating with the RCO, heavily over-representing this area. Most activities were only given by name; variables such as time, budget and other details were often missing. 'Activity' was defined as any partial effort of a project of an organization, which was the basic unit in this system, but there was no clear demarcation of the extent of these 'activities'. Among the data not included, were budgets, the basic situation without the project, the donors, etc. A short inquiry showed, too, that only one of the several hundred 'activities' recorded, namely a school in Talodi, was reported as finished.

The Coordinator's opinion that these flaws could be improved during use was based on the assumption they were flaws of usage, not of design, and that initial mistakes would not become perpetual mistakes. A look at the Coordinator's approach to dealing with software problems threw that view into question:

The new database worked with the main threats and risks database, TRMA, of 2007, in which data from different UN agencies and the results of workshops in different regions were processed, based on indicators taken from brainstorming and academic work. The format of the database was Microsoft Access' mdb, which was transferred into the programme TREE 1.0, from which the information was mapped and transferred again as pmf into ArcGIS, whose freeware subprogramme, Arcreader, rendered the information generally accessible, but not editable. When the Database Coordinator presented the database to me, some links were not working. It took him only a few steps to change that, but the database and the software would be delivered in the end as a package. Unless substantial training of permanent users took place, that would mean that every problem and every projected improvement would require the attention of the programmer.

The Deputy Chief Technical Adviser added details about the TRMA data collection workshops in different localities of South Kordofan. The main object was to build capacities for follow-up and re-evaluation of the collected data, because comprehensive data sets were, according to him, not only the most recommendable form of information to use as a basis for government planning, but also gave the government the feeling of ownership of the data and of the results of analyses. The resulting information would allow them to define priority sectors.

He showed me a PowerPoint presentation used in the workshops, which depicted men and one woman pointing at problem zones on maps and drawing nomad routes. His crew held meetings in every locality to get information about that locality's specific problems, which were put into pre-defined categories. He said that one would invite pure chaos if one tried to allow them to create their own categories of problems, therefore the categories were pre-structured, and only seldom did a new one prove necessary. He seemed to assume that these pre-defined structures did not impose limits on which categories of problems were made communicable.

The procedure also assumed that individuals and groups were appropriately represented. The workshop groups were structured into such categories as 'government officials', 'CSO representatives', 'minorities' and 'traditional leaders'. The workshops were also provided for so-called focus groups such as women, youth, and nomads. All those labels appeared to represent homogeneous groups to him, and he reacted with irritation when I asked about the actual process of selection.

However, maps were created based on the results of the workshops, GPS positioned, with different colours for different categories of dangers and priority, and marking the condition of facilities (usable / non-functional); all information that was easily changeable on the level of data entry. In the presentation, the process of the creation of the maps was shown step by step, configured differently for the various purposes of different ministries, and with lists about which information was available from TRMA and which had to come from the Central Bureau of Statistics (CBS) and other state-based institutions. When the data sets are complete, they will be handed over to the state ministries – again, to give them the chance to 'sell' this information as their own, as he said. It will then be their task to find priorities for action–for instance, by concentrating on regions represented as having many colourful triangles – and to re-delegate organizations if their activities overlap too much.

The Deputy Chief Technical Adviser finished with the observation that the database project had encountered some 'paranoia' concerning 'backdoor issues' like security, concerns which can only be met with evidence; this paranoia would also be the only reason for hostility against UN. For him, the main problems were only lack of information and disorganization, which could only be solved by implementing a system that defines clear priorities. So, according to this view, it is unreasonable to build schools in insecure regions, where they are likely to be destroyed. In this sense, it is in the interest of 'the government' to learn to do 'evidence-based development', i.e. to learn 'how things are done'.

5D: Public administration

The integration of an administrative system and its different levels was one of the main fields of application of development efforts in South Kordofan after 2005. South Kordofan was supposed to experience the transition from a divided administration, which it inherited from the civil war and the dichotomy of rebel-held (SPLA) and government-held (NCP) areas, to an integration of state organs and civil servants.[332] The transition proceeded in slow motion from the Ceasefire Agreement in 2002 until the appointment of Aḥmad Harūn Kafi as NCP governor in 2008 and the appointment of ᶜAbd al-ᶜAzīz al-Hīlū as SPLM vice-governor in the same year.[333] The appointment of the former brought a sudden flow of financial means from the central Ministry of Finance,[334] and a corresponding swiftness of completion of major construction projects, among them tarmac roads, two major hospitals in the state capital Kadugli,[335] telecommunication transmitter masts, and major water storages, many of them based on contracts arranged in Khartoum.[336] What was supposed to be a process of 'administrative peace-building', thus actually perpetuated a kind of system of dominance, resisting which had been one of the basic reasons to go to war in the first place.[337]

Several development programmes were started to address these 'governance' issues.[338] These programmes always operated in a state of tension with the existing power structures, although these tensions tended to be directly experienced more by smaller organizations.[339] The most obvious case was the expulsion of thirteen international organizations that had been working in Darfur in March 2009, a blow that had also a major impact on South Kordofan (Pantuliano et. al. 2009).[340] The gaps appearing afterwards showed not only the central importance of INGOs in basic service delivery, but also the lack of capability of national public administration and national NGOs, which were supposed to fill these gaps. Indeed, several of the expelled organizations received an offer to continue their operations under a different name or through other branches immediately after the expulsion had been announced. In South Kordofan, the programmes of Save the Children USA were continued by Save the Children Sweden, Merci Corps came back as Merci Corps Holland, and Care USA changed to Care Switzerland; to a great extent, even the same national staff were re-employed, although on a lower budget.

Other discontinuities were caused by macro-political decisions in the global arena. An example is the decision of the Sudanese government in mid-June 2009 to refuse the signature on the latest amendments to the Cotonou Agreement,[341] which affected all EU-funded projects, for instance, the Sudan Productive Capacity Recovery Programme, a STABEX-funded project.[342] The general aim of the SPCRP was to support recovery and strengthening of livelihoods by increasing food production, specifically animal husbandry,

fishing, horticulture and agriculture, as a cooperative effort of the FAO, the EU-funded Humanitarian Plus and the Sudanese Ministry of International Cooperation. The specific aim was to establish models for state ministries, local NGOs and CBOs to achieve the general aims with relatively little external funding.[343] If the government's refusal was not reversed, the approved EU funds would run out at the end of 2012, which was the end of its 9th budget period.[344]

Within the framework of many governance-related programmes, however, these underlying conditions were often translated into the category 'challenges', explained as arising due to 'limited capacities', 'lack of technical expertise' or, in slightly more critical reports, 'political will'. In this sense, UNDP launched the project 'Local Governance Capacity Building in South Kordofan' in 2006, intended to run until December 2012.[345] Additionally, the UNMIS Civil Affairs was "working with the State Parliament on the legislative process, and implementation of the power sharing agreement" (Klugman & Wee 2008: 49).

In the language of the programmes implemented under the Participating Agency Service Agreement (PASA) between the United States Department of Agriculture (USDA) and the United States Agency for International Development (USAID), the rationale behind these interventions was intended "to provide the peace dividend promised to the Sudanese" and to "lay the foundation for democracy and good governance that will be required for successful implementation of the CPA" (USAID-USDA 2006: 2).

Since the underlying causes of the war were related to a long history of marginalization,[346] the claim of these programmes to stabilize the region assumed that they contributed to the reduction of previous disparities. A World Bank report quoting South Kordofan's Five Year Strategic Plan (2006-2011) observed that "[t]he investment plan together with the detailed project proposals and costing […] serve as useful background documentation for the way forward" (Klugman & Wee 2008: 45). But in this report several shortcomings are criticized, namely lack of prioritization, no sequencing of interventions, lack of clarity about stakeholder and non-governmental participation, and, above all, an unrealistic and unbalanced budget: annual costs of US$ 68.40 per capita were planned, against federal transfers of US$ 6 per capita in 2006 and US$ 30 per capita external assistance for humanitarian aid.

Localities were also planned to receive only 21% of the finance, which not only contradicted the stated priority of decentralization, but, beyond what is said in the report, raised questions as to which items would be neglected in the event that the envisioned costs were not covered. (Klugman & Wee 2008: 45) This was reinforced by the "poor track record on development spending" and "very limited capacity at the state level to plan and maintain development projects", while planning was mostly done in Khartoum, with wide gaps between budget plans and actual transfers. Furthermore, the planning department was

moved from the South Kordofan Ministry of Finance to the Ministry of Economy and Investment in March 2006, a step, which, according to the assessment, reduced "further the link between the budgets and planning processes" (Klugman & Wee 2008: 45-46).

Additionally, delays in the formation of administrative units and their basic functions, especially in SPLM-dominated areas, continued to be factors of exclusion.[347] An example was one of the largest programmes to establish productive village communities and links to the state administration through localities and extension services, namely IFAD's South Kordofan Rural Development Programme (SKRDP).[348]

The International Fund for Agricultural Development is a Rome-based organization and concentrates on issues of food security in rural areas.[349] It funds projects in cooperation with national governments; in SKRDP, its role was limited to providing 70% of the necessary funds, while the local administration was undertaken by employees from the Ministry of Agriculture and Forestry. In the wake of the 'peace from within' policy of the NCP (from 1997), an agreement was made to engage in a 10-year-programme with IFAD; the baseline survey was done in 2000 in the government-held areas.

The initial proposal defined a set of objectives, which summarized their aims as being "to improve and sustain the living standards of the target group by assuring their food security and providing them with social services in a secure environment in which they can manage their own community affairs" (IFAD 2000a: 4). It noted also that

> [t]he programme will rely heavily on State and locality authorities, whose institutional capacity will be built up within their existing structure to minimize the accumulation of additional costs that they will not be able to bear in the future. Strong emphasis will be placed on beneficiary participation through their spontaneous development committees where they do exist, or through the formation of apex community-based institutions at the village level. They will be supported by a small but strong programme management unit (PMU) that will have a high degree of autonomy in coordinating the implementation of the programme's activities. This will include the readjustment and strengthening of the systems of delivery of integrated community-driven services.
>
> Programme components are simple and will be vested in the beneficiaries, with specific criteria for participation of the target groups and their locality councils. Implementation will be the responsibility of the locality councils supported by the established cadre of the relevant State ministries and agencies currently operating in South Kordofan. This will be done in close cooperation with the target groups. (IFAD 2000a: 5).

While the extension of administrative access points was thus a basic component of the programme, accessibility was also a definite element in deciding where exactly to implement it. A security assessment in the same year found that

> [t]here is indeed some evidence that poor mechanisms for resource management, especially in relation to the need to balance the interests of pastoral and farming communities, have contributed to the conflict that has now in turn worsened relations between the two groups in the target area. According to a 1995 report by a London-based Minority Rights Group non-governmental organization (NGO), the civil strife that has affected the population of the Nuba Mountains in South Kordofan since the late 1960s has its origins in the take-over of Nuba arable lands by the Jellaba merchant class under mechanized farming corporation schemes, coupled with the disruption of patterns of access to migratory routes and water points traditionally used by the Baggara and Nuba in the central mountain regions. At a more general level, the abolition of the Native Administration system in the early 1970s led to the collapse of traditional conflict-management mechanisms, resulting in the intensification of intertribal conflicts and in the spread of banditry in rural areas. Since the early 1980s, structural instability has been intensified by the pressure on permanent water sources due to the deterioration of existing wells (largely owing to overuse) and to the virtual halt to well-building from the mid-1970s to the mid-1990s. Thus, devising an efficient management system for farming and herding resources, as proposed under SKRDP, may well be a significant way of contributing to the removal of the structural causes of local instability. (IFAD 2000b: 3).

After this omission of any role of state-instigated violence, the selection process is then continually discussed based on seemingly technical criteria, one of which is 'security'. For the sake of 'success stories', lack of security is implicitly treated as a criterion of exclusion:

> The selection of localities for the introduction of the complete package of programme interventions will be made in such a way as to ensure the greatest opportunity for the successful achievement of targets and the safeguarding of assets. This will mean that the programme will commence in secure areas in the northern, north-western and eastern parts of the State (with the exception of basic assistance). (IFAD 2000a: 5).

The proposal continues with criteria for selection at successive levels, from regional to local, arrived at through a start-up workshop and a subsequent Programme Implementation Manual, and leading, from the selection of localities (by PMU and state authorities), to the selection of communities (by a Community Selection Committee in each locality), to the selection of beneficiaries (by a Community Development Committee in each village).

In order to understand the basic history of implementation of the community aspect of this programme, I talked with the former (2001-2007) and current (since 2008) directors of the Agricultural Extension (*mudīr al-iršād*).[350] The selection of the needy villages had been made on the basis of a ranking based on the 2001 survey and follow-up, which showed 25,000 families to be needy; the indicator used to assign a status of 'poor / war victim' was the income of the family.[351] No similar survey was conducted for the SPLM-dominated areas, arguably those poorest and most war-affected.

Both directors described the programme similarly in all interviews: According to a law of 2001 for Development Committees (*liğān al-tanmiyya*), the committees form the obligatory entry point to rural communities. Beside the rehabilitation of the region, the aim of IFAD's programme was to attempt to institutionalize the structures prescribed in this law. This was also supposed to create an overarching structure for the creation of subordinate formations:

- extensions (*iršād*; registration in the Ministry of Justice),
- charitable associations (*ğamaᶜiyyāt ḫayriyya;* registration in HAC) and *zakāt* (registration in the Ministry of Social Development),
- cooperatives (*ğamaᶜiyyāt taᶜwūniyya;* registration in the Union of Cooperatives, Ministry of Finance and Economy).

The respective administrative organs bring together communities, which form subcommittees corresponding to the programmes' various sectors (women, animal resources, agriculture, education, health) and appoint representatives (*dubāṭ*) by election. Then there are contact farmers for the specific sub-projects of IFAD, which are mediated through these development committees. The vision was to make this the general model for the region, therefore the IFAD programme disregarded those organizations that established other, non-registered committees. This was an attempt to delegitimize organizations not linked to the Kadugli-based state administration. The IFAD programme therefore engaged in cooperation with USAID's Community Development Fund, but not with organizations such as Samaritan's Purse and Concern Worldwide. It also addressed 'rural development' through the representation of villages, rather than referring to ethnic or other categories.

In 2009, the South Kordofan Rural Development Programme was in its last phase, although an extension of four years had been negotiated. The staff of the Programme Management Unit in Kadugli was reduced to a single person, the Programme Director, whose Deputy was a victim of the rationalization. The Director gave me the following overview of the situation: In 2009, a final 4-year-program was begun, in connection with a final transfer of the administrative staff of the Programme Management Unit – namely the five sector heads, the programme director and the general director – to the Ministry of Agriculture and Forestry. The Programme Director stayed another 2 years, the General Director 4 years.[352]

However, in IFAD's internal reviews, the SKRDP appeared, remarkably often, in a negative light.[353] The central Office of Evaluation's report about operations in 2008, for instance, mentioned SKRDP mostly with reference to problems:[354]

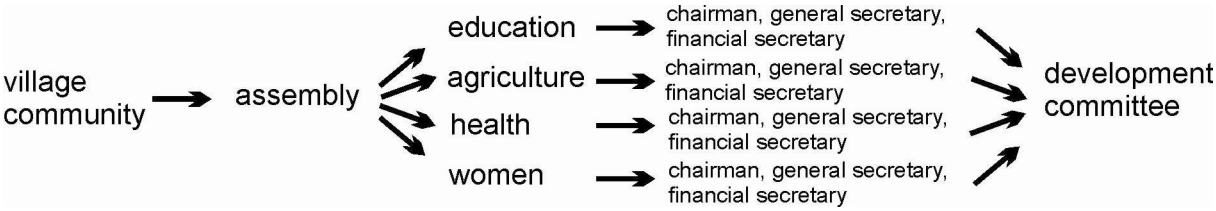
- poor involvement by co-financiers (IFAD 2009a: 18)
- design weaknesses, such as overly optimistic targets combined with insufficient inputs (IFAD 2009a: 19)
- inefficient project components dispersed over large, poorly accessible geographic areas (IFAD 2009a: 20)
- limited improvement in household financial assets, associated with weak performance of rural financial services undertaken by the programme (IFAD 2009a: 23)
- no sustainable impact on agricultural productivity and food security, due to absence of a sustainable seed supply system (IFAD 2009a: 24)[355]
- under-designed and underfunded components (IFAD 2009a: 32)
- adverse effect on project performance by political instability, causing high turnover among senior government officials, together with lack of counterpart funding (IFAD 2009a: 34).

What caused those apparently good ideas to fail to flourish as they were supposed to? Wasn't a network of small, non-partisan administrative units, linked to the regional and supra-regional administrative structure, exactly what was needed to solve most of the problems of governance and supply? A referential system, by which central organs could channel resources to where they were needed most? Did those channels remain dry, because there was nothing to flow through them? Or did whatever *had* flowed through them leak away before it reached its intended goal?

5E: Development Committees

In April 2009, the Heiban Association held its annual conference in Heiban. At one point, one of its members stepped forward and criticized IFAD's performance in the region. He highlighted IFAD's shameful role in the planned establishment of a water yard in Abol, the shabby refurbishment of the Health Centre, its tiny women's centre in Heiban, and so on. In conclusion, he condemned its overall small contribution to the region's development, especially regarding the organization's huge financial means. What made this even more appalling, in his view, was the fact that other organizations were blocked by state administration in areas, where IFAD had instigated projects.[356]
What happened?[357]

Committees
In October 2009, a new director for the IFAD office for the Heiban Locality was appointed, a Kahālī from Kalogi who had studied Rural Development in the Islamic University of Omdurman. According to his account, he found the following situation in the office: After the opening of the office in 2006, a first evaluation began in April 2007 with the formation of a group of 12 Native Administration leaders, so-called *ᶜayyīn*, and five employees of IFAD. They made a profile of the region, and teams were sent to villages for three days to evaluate. Then the Village Development Committees were formed. In theory, this formation began with an assembly of the village community (*muǧtamaᶜ al-qarya*), which was then formed into groups (*maǧmūᶜāt*) for the purposes of education (*taᶜlīm*), agriculture and livestock (*zirāᶜa wa rāᶜa*), and health (*ṣaḥḥa*), and also a women's group (*mar'a*). Each group would then appoint a chairperson (*ra'īs*), general secretary (*amīn al-ᶜām*) and financial secretary (*amīn al-māl*), who together would constitute the twelve members of the development committee (*laǧna al-tanmiyya*).



Furthermore, contact persons were established for conducting experiments in agriculture, animal husbandry, and orchards, one man and one woman for each category. Evaluation reports were written based on the feedback from these development committees and contact persons. The evaluation was to be made through use of a questionnaire, which is filled out

together with the local VDCs. Using this data, the poverty level and proportions of various groups in the population were defined from village to village, to form a basis for further planning.

The report of 2007 was the only documentation from the programme that had made it to the agricultural extension office in Kadugli; the papers from 2008 were nowhere to be found. The only other documents consisted of some procurement lists for development centres, the town hall (paint, roofs of corrugated iron), and the Health Centre (paint, beds, laboratory) in Heiban. The existing report showed the responses, and thus indicated the basic functioning, of only 8 of the 50 targeted villages in the Locality. In 2009, the financial means for evaluation trips were cut completely. In 2010, all fifty villages were supposed to be brought into the extension system.

In Heiban, the new director, Nūr al-Dīn, had found a dysfunctional development committee. After it was formed, its members had failed to come to training in Kadugli, which was supposed to clarify the system. Others had been appointed in their place by the present local IFAD office, but the convened assembly failed to attract significant responses and the new committee thus lacked sufficient legitimacy as a form of community representation. As a result, everything stopped. Nūr al-Dīn therefore went to the Native Administration leaders, to religious authorities, and from house to house, and presented a plan of what he wanted to do. Finally he succeeded in convening a second meeting with about 300 persons.

According to his account, signs of enmity between members of the old and the new committee immediately became evident in the assembly, as well as demands to represent the 'five tribes' equally. After some negotiation, the assembly managed to elect a new development committee and highlighted the issue of renovating the secondary school as its highest priority. Complaints had also been filed about the women's centre, among other projects, and the director pointed out apparent communicative difficulties with the previous IFAD staff, and promised decisive action.

The IFAD representative had stressed in the assembly the independence of the development committee from ethnicity and Native Administration. In our discussion, though, the stance he took became more differentiated. The formal IFAD criteria for the selection of priority villages were: more than 150 households; no previous existence of schools, clinics, water pumps etc.[358] Abol, for instance, fitted only some of the criteria, but it was included during the first period, because it was close to Heiban and representative of the 'Abol ethnic group'. Furthermore, he succeeded in convening a bigger meeting in Heiban only by appealing to supposedly unrelated Native Administration leaders.

However, he also identified a strange lack of motivation among 'the people here', who did not use the summer for projects such as construction, paid work etc., unlike 'the people of

Gezira', for instance, or of Al-Rashad, where he had been before and where the reference system worked well and the development centres hosted manifold activities.[359] So I decided to take a closer look at 'those people', who had been part of failing IFAD projects such as the women's centre.

Centres

In May 2009, I had already discussed the 'communication difficulties' with the former chairwoman of the women's section of the development committee, Sara. She stated that 'the organization''s processes were never really clear; they just held a meeting in order to form the committee and told them to bring ideas to their office. This never took place.

The women's centre in Heiban had been built with cement and partly bricks brought by NCA, while the women brought stones, and a local trader, Ḫālid, sand; IFAD funded the material costs for the upper part of the walls, the fence and the red roof sheeting. The IFAD staff also provided devices for the production of jam and noodles, as well as a television with video player. Several practical problems prevented their fruitful usage. In the case of jam and noodle production, the initial capital to start production was lacking. In case of the television, the women had no experience of how to use or organize it; IFAD promised training in its use that it never delivered - *al-markiz da akbar minana*, "this centre is larger than us", Sara said, meaning that it was beyond their capacity.

But the reaction to these problems was not at all one of resignation. The idea of running video evenings was pursued with the help of an Arab woman, the wife of a migrant from Heiban, who operated the TV for some time, and through the introduction of admission cards. Sara saw in this evidence of the non-ethnic self-conception of the women's group; i.e. membership and involvement were open to all the women who lived in Heiban: The group included a Fellata, a Tira, a Fur etc. Sara herself fulfilled a bridge-building function, for instance, through her knowledge of Haussa, which facilitated communication with Fellata.

She reflected that she had been appointed based on her experiences in Nigeria, where she had gone to school from 1976, since the age of fourteen, and had visited an evening school teaching sewing, small-scale horticulture, and domestic animal husbandry, among other skills. Another reason for her key importance was her experience in teaching, as she was one of twenty teachers who had taken a course at the Teacher Training Centre in Kauda, where fifty female students were trained for ten days in practical skills. In a similar way, she taught about eighty students in Heiban, but while the women in Kauda had succeeded in opening shops to sell products such as jam, edible oils, embroidery, etc., the same did not occur in Heiban. Some production did take place though, and there had previously been two exhibitions of some of the products made by women in the village, to which IFAD had invited

staff members of the international organizations in Kauda, many of whom bought some of these items.

Sara herself opened a restaurant, named 'Abu Sisra' after her daughter's father, where she employed and taught other women, who then went on to open their own restaurants. These restaurants, she claimed, were the first in the market. The food in her restaurant was prepared by a Fellata cook; Sara only kept the accounts. Apart from that she had been working as secretary and typist in Heiban's local administration for twenty years, and she was appointed as the female representative of the Heiban Association's branch in Heiban, with her husband as chairman. She was unseated a year after that; she claims the others demanded 'new faces' and that she 'give others a chance to work'. However, the newly appointed representatives never even managed to organize a meeting.

In her view, the problem with international organizations was their concentration in Kauda and the limitation of contacts with training courses beyond Kauda. Only once one succeeded in enter these courses did contacts multiply: She met, for instance, the chairwoman of the Kadugli-based organization Rū'ya, Zaynab Balandiyya, who, though she offered no funding, did share plenty of ideas, such as that of a 'mill fund' (*ṣunduq al-taḥūna*), which organizes women using the electrical mills. This idea included the collection of money to be distributed to 'the needy' during regular tours through the town, and developed several pre-existing pooling practices, such as that adopted in the market, where about ten shop owners would each pay a small amount weekly in order to buy stock for a different one of their number each week.

The established contacts also increased in number by themselves. Her restaurant became one of the 'women's success stories', which drew visitors from Kauda's development landscape to Heiban. Once she received a visit from Concern Worldwide staff, a Sudanese and a Bangladeshi, who asked her about her experiences and offered to provide her with seeds, if she cleared a plot for a garden. She talked to them about her idea of rearing poultry in a covered row of clay jars (*azyār*), regular feeding and cleaning, and usage of their manure as fertilizer. The two encouraged her, asked why she had not come to them before, and urged her to write a proposal. Likewise some biologists and ornithologists working in the area had also visited her restaurant.[360]

These activities were not the only ones of their kind. SPLM had a women's union since its beginning, and the chairwoman of the Nuba Mountains branch of 1984, Amna, was still occupying this role in 2010. In the beginning her work comprised rather secretarial duties: writing reports about burnt churches and violence against women, and giving lectures in Nairobi. The work became more directly related to rehabilitation with the influx of certain development organizations, for instance, Samaritan's Purse. The latter established

horticultural courses in a nursery in Kauda, whose work was linked to relief: The SPLM secretariat itself had no money, but paid the women in kind (*ʿayyānāt*), which they took from the international relief deliveries. This was enough for the women, so that they went on with their work, although there were no vehicles and they had to go, for example, to meetings in Dilling by foot. With the end of relief provision, this kind of work stopped, too, and at the time of writing the women's union awaited either the formation of a new national union or its integration into the existing union by grassroots elections.[361]

One effort initiated by the SPLM women's union was the organization Delēbāya, which was also funded by an organization in Kauda. Mary James, the wife of Daniel Kodi, who was in Nairobi at that time, had acted as contact person since the beginning of the programme in 2002, and initially she brought Kenyan schoolbooks for adult education courses. One activity I observed was a computer course that ran from October 2009 to January 2010, which took place in the former NCA compound, and was taught by a Yemeni teacher and organized by NCA, Delēbāya, and SPLM's development organization Rifāq.[362]

The combination of manifold ideas and external finance, with its unpredictable nature, also nurtured projects with individuals who were not part of the 'development establishment'. The Dutch photographer Hannie Halma, for instance, founded the organization Stichting Abdo, Vluchteling uit het Nuba Gebergte (Abdu Foundation for Refugees from the Nuba Mountains) – according to her account, after she had met an ʿAbdu from Heiban on a boat travel from Aswān to Wādī Halfa before the CPA was signed, and promised him that she would come to the Nuba Mountains when peace came.

Before she arrived, she had started to collect money from private contacts in the Netherlands and in Khartoum, and was then supported by local employees of NCA, whose contribution she explicitly referred to as the basis of her work. She was involved in the extension of schools, specifically in Shawaya, with rooms for orphans, and a kindergarten. She lent her support by paying bricklayers and arranging and funding the transport of cement and iron roofs from Khartoum. She had also organized workshops for women about the usage of ox ploughs and how to set out gardens, and brought in a Dutch artist studying puppet theatre to educate a school group in Heiban, concentrating on issues such as alcohol abuse and harmful 'traditional' medicine.[363]

However, her approach to these projects was marked by specific conditions of communication. She started her work with the Heiban Association, for instance, with a meeting in the Hilton Hotel in Khartoum, where she told them about her work in India and provided a DVD with information on 'how to develop'.[364] Indeed, her presence in the area was limited to short trips, which she explained as being limited by her 60 years of age, and so her contact with those she attempted to support remained shallow.[365]

To come back to the IFAD-supported women's centre: Nūr al-Dīn, the new director, had spread optimism due to his new leadership. After a meeting to draw up a finance plan at the beginning of February 2010, the IFAD staff installed a generator to power the television and the other devices again, and everything seemed to go onto a different track. Yet only a month later, only the television was working, and production of spaghetti had taken place only twice. The weekly meetings worked twice, too; then absences began, and two weeks after that no more meeting came together: No caretakers for the children could be found.

Why had IFAD's attempts to establish a new framework of social activity experienced so many obstacles to its stabilization?

If one looks more closely, the aforementioned 'communication difficulties' do not concern language barriers or cultural heterogeneity in a *narrow* sense. Rather, the attempt to transfer technology – both in the form of devices and in the form of organizing principles – underestimated the complexity of this process and its implications, or de-prioritized the need to address such complexity. This problem also haunted other elements of IFAD's programme, for instance the experiments with contact farmers.

Contacts

According to the technical supervisor of the Extension Programme, the agriculture part of this programme was organized as a seed bank (*bank al-taqāwī*). In the 1960s and 1970s, a system was established in which the Agricultural Research Corporation sent samples of nationally usable seeds to the local research stations, which sowed them on experimental farms and sent back the results. This system broke down, budgets for studies were stopped, and today only a few young graduates, with little or no experience, are sent, while experienced researchers stay in El Obeid and Wad Madani. ARC continues to try to distribute standardized seeds, which, however, are only tested in Gezira and El Obeid. IFAD and the Ministry of Agriculture and Forestry now receive samples of 'improved seeds' (*'aṣnāf*) from the Arab Seed Corporation in El Obeid; these are incorporated into the seed bank system.[366]

The system is supposed to work in such a way that the development committees receive an amount of basic seed capital as a loan, which must be paid back after the harvest. The problems started with the return from these seeds, which often either failed to materialize or consisted of inferior seeds, mechanically damaged by threshing, infested by germs, or mixed with dirt. Particularly in communities without a storage facility, these low-quality seeds were sold locally, and the difference in prices was still compensated by IFAD. In order to produce a sustainable system, however, there were attempts to refer to existing practices of seed selection (*intiḫāba*), in which, for instance, selected sorghum heads are hung on trees, as

opposed to practices such as seed propagation or outcrossing. In the storage system set up by the seed bank, though, this was connected with a contract; i.e. the receiver agreed to give back only clean, selected seeds.

At the time I visited, studies with recommendations were only being done on the seeds returned from the VDCs. But the programme's problems were more substantial: There were widespread practices of early sowing, for instance in May, when first rains were coming, while the seed bank's species from North Kordofan were accustomed to germinating in July, when there was comparatively little rain, and so tended to ripen more quickly. Furthermore the purity of species was not maintained, because of mixed sowing. The technical supervisor concluded that research could be conducted here to find solutions for the Agricultural Extension section, who acted purely as implementers.[367]

In the IFAD office in Heiban, the local director and the Administrative Officer of Forests from the local administration didn't deny the role of the Agricultural Research Corporation, but they maintained the superiority of the seeds coming from El Obeid over those of the locally prevalent red sorghum. They admitted that the species brought from El Obeid, such as *qaddum dibiliyya*, had a relatively low yield among contact farmers; for instance, only 60 sacks on 5-6 fd (900-1080 kg / *feddān*). According to their argument, however, the long and the short species of red sorghum were limited by their relatively long growing period, while their high sugar content made them unsuitable for diabetics. The director also claimed that the advantage of the new species was apparent in direct comparisons of contact farmer systems with demonstration farms.[368]

According to the accounts of IFAD contact farmers in Abol, this issue took a different shape. At the beginning of May 2009, I had asked about IFAD's presence there. One of the contact farmers stated that they had had a bad year with the seeds from their seed bank, and so they had silently replaced them with those of the local varieties they knew. When I asked if the IFAD people knew of this, he replied that "they never show up".[369] One year later, in February 2010, I talked again with another contact farmer, who was also the local primary school director. He and the other contact farmers had been sent to a three-day workshop in 2007, where 'modern' cultivation methods were described. Those conducting the workshop had then given him some seeds of a white species of sesame not found locally– it was already July, therefore sorghum was not provided; his female colleague received groundnuts. Both had bad harvests, were not asked again in 2008 or 2009 about their results, and therefore left the experiment. His conclusion was that they did not teach him anything, and that the knowledge of the elders (*ǧidūdnā*) was 'a thousand times' better.[370]

Clarification

With this multitude of missing links in the chains of translation, the various participants in IFAD's development projects seemed to know little about each others' situation. Monitoring, and specifically regular inspection tours of local IFAD staff, were supposed to provide this kind of knowledge, at least to the centres of calculation.

Normally, the market days would be used to make contact with the villages in the area, as many people from surrounding villages would come to Heiban, among them, potentially, contact farmers and midwives supported by IFAD's programme. However, at the end of January 2010, I found Nūr al-Dīn and Zakariyya Uṯmān, the expert for horticulture, sitting together planning an inspection tour. January 31st was the deadline for the 2009 report, and data about the productivity of contact farmers were still incomplete. Zakariyya said that they, as data collectors, would sometimes ask anybody in the village about the harvest, when they had no time to search for the contact farmers. But the data demanded by the Technical Adviser in Kadugli included the name of the contact farmer, the delivered amount, the cultivated area (comparison 'traditional' method / 'modern' method), and the yield. In cases of very low yield, reasons had to be given, e.g. lack of rain, livestock damage, etc. To solve this data problem, a plan was made to travel to five villages with actual cultivation, namely Serrēf, Abol, Mer, Lochlo, and Ure.

On February 3rd, I started out with the IFAD staff on one of these tours for data collection. We set off at about 9:00 am, and the director planned to visit first Mer and Abol (north-east of Heiban), and then to arrive at a meeting appointment around 11 o'clock in Lochlo (south of Heiban). My doubt as to whether there would be enough time for this was answered with the comment that they only wanted 'specific, little information' from Abol and Mer. During the trip, the young people chatted about questions such as where Heiban ended and Abol began, who lived in which house, as well as run-and-hide stories from the war, and also involved the discussion about a sign for the women's centre in Heiban and who would write it.

In Abol, it was the *buma* representative, ᶜAz al-Dīn, who now led the development committee, since the elected chairman, the primary school director Mubārak, had withdrawn from active participation. It was also ᶜAz al-Dīn who had agreed to a work contract with IFAD for Abol's development centre. We found him busy with the construction of the church, and he complained that the water situation was worse than ever, that they had to get water from Heiban, and that he had not taken a bath for days. Nūr al-Dīn promised to speak with the IFAD director in Kadugli, and excused their slow progress with the water yard by saying that there had been financial problems during the recent period. Two sacks of cement were taken from the development centre's storeroom, which was full of pumpkin marmalade, sacks of *kongles*, devices for producing noodles and marmalade, pots, forms for baking etc. The

women group's production, said the acting VDC chairman, was very high during celebration periods.

This was discussed by the IFAD staff as a success, while we proceeded to Mer. We passed quickly through Kubang, and soon reached our goal. Mer was a small village, and it was the weekly market day there, although the market was almost empty. The youth representative of the development committee accompanied us, but the committee itself was dysfunctional. The chairman, who had been elected in 2007, was now old and had given the job to a Yunān, who was not 'trained', in IFAD's terms. IFAD's Heiban director asked several times how this reassignment had taken place, and whether a general assembly (*ǧamaᶜiyya ᶜumūmiyya*) had been convened, as stipulated by IFAD regulations. The unclear answer was that the development committee had agreed.

The director insisted on a clear distinction between those 'trained', i.e. those introduced through, and thus acceptable to, the system, and those 'untrained'. In this sense, a new chairperson should be elected from those 'trained', because IFAD can work only with 'trained' people. That those 'trained' also had a positive, representative position in their society seemed to be merely presumed, although the dynamics of community trust were shown to be a crucial issue: One contact farmer had in the first year received support from people in the village in cultivating the experimental field, but had not shared the profits and, now alone, did not manage to do the work anymore. The director's conclusion was that such issues had to be monitored more closely.

At this point, in order to fill gaps in the data, the contact farmers should have been interviewed. However, the women's representative and contact farmer were at the teachers' training in Kauda; another contact farmer was away travelling, and others were also unavailable. Given this situation, the youth representative was interviewed about the harvest. He said that rains had fallen only from June to August and that the loss of harvest was so great that they had started to sell livestock to have money for sorghum. The experimental field had failed, too, because the seeds had only been delivered in August. Here the director intervened and said that this would have been exactly the right time to sow the delivered white sorghum variety, *tabad*; information that apparently had not reached the farmers. But no further effort was made to verify this casual information, and it would enter the final report in this form.

Afterwards, we met also the 'untrained' midwife al-Ṭawma, who belonged administratively to the health unit in Ḥağir Bago. However, the unit's assistant doctor had demanded a certificate before he would allow her to work with him, which she then tried to acquire through IFAD. An arrangement with the Ministry of Health allowed IFAD to grant midwives without

formal training a legal status, in cases where they fulfilled certain requirements. The IFAD team interviewed her in her kiosk over a glass of tea.

Approaching her in a light-hearted manner, the group introduced themselves by name – Nūr al-Dīn, Zakariyya, and Mağda – and also by their positions – director, head of the horticultural section, and head of the women's section. The interview remained somewhere between a formal check and small-talk: Did she report her work? Al-Ṭawma explained that she had a list of patients and pregnant women in her notebook, in order to thereby gain her midwife's certificate. Was her work place pleasant? She said that she still had to work at home, but only on Friday and on Sunday in the morning, because otherwise she was busy and there were many disturbing things in the house, such as the poultry. Did she take payment for her work? She took 1 SDG per consultation during pregnancy, and had up until now helped with the birth of three children. Mağda urged her again at the end to submit her report about who was examined, when, for how much, the results, number of deliveries, etc., so she could receive her certificate. Showing her dissatisfaction with the lack of clarity, Al-Ṭawma asked if she should bring the report, or if it is would be taken from there, and said that this had to be stated clearly (*kalām wādiḥ*). The visitors blithely told her that it was no problem, and told her just to give it to somebody coming to the market in Heiban – and in the last moments Mağda repeated that she should bring only the report.

It was already early afternoon now, and Nūr al-Dīn decided to go to Lochlo on another day, despite their planned appointment.[371]

The group, centred around Nūr al-Dīn, claimed that everything always went well through light talk, *wanasa*, with 'the people' (*al-nās*). At the same time, their main intention was to create forms, to insist on forms, and their 'who's who' was based on recognition of formal positions in an organizational framework that they had tried to establish. In this context, the relative importance of the insistence on form and the persistent usage of casualness altered. The resulting sites of interaction were situated somewhere between content without form – practices ignoring the intended templates – and form without content – templates ignoring practical boundaries. Within this tenuous field, a thin communicative link emerged.

But the reasons for IFAD's programme being so ineffective were not limited to the unpredictability of the various principles that organized communicative links. Even assuming the presence of an *intention* to establish sustainable links, there were no *means* of doing so: At the beginning of 2010, Nūr al-Dīn and his staff had to work mostly inside the IFAD office in Heiban, because of the delay of the budget due to the change of their source of funding – now the Dutch government – and the formal procedures connected to such a step.

However, Nūr al-Dīn stated that the cash flow during the whole South Kordofan Rural Development Programme had been difficult, because the government had not paid its share,

at which point IFAD also stopped its funding. Only in Rashad could this be levelled out through a micro-credit programme, which started with a basic capital that was given each year, on credit, to borrowers, and was demanded back without interest after the harvest, while the profit stayed with the borrower. This programme was handed over to the development committee, which managed without further external finance.

But in Heiban there had been a recession for six months. Food and other daily need were taken from the shops on credit, and shop owners grew tired of it. No salaries had been paid, and there was only accommodation because the rent for a whole year had been paid ten months ago. Electricity was only borrowed from the house owner, and the water tanker of the Ministry of Agriculture and Forestry was used for bringing water. There was no money for petrol – they got it only as an advance – and the programme's tractor, which could have been leased to provide income, had been used only once, for going to a workshop in Abu Jibayha; it was driven to Kadugli, where it had remained since in the storehouse of the Ministry of Rural Development, with cable damage.

Finance remained the pivot, or rather pitfall, of the whole matter: More than a month later, I was back in Heiban. I met Zakariyya Uṯman playing cards, and I found out that the IFAD staff were still sitting around; that the General Director had actually been supposed to come by after a visit to Kauda, but had not; that Nūr al-Dīn was now on vacation in Khartoum; and that they had intended to go on the 16th of March to Kadugli to find out what would happen to the project. Zakariyya still awaited confirmation of this plan.[372]

Consequences

The presence of IFAD in Heiban remained fragmentary, with an initial office in 2007, which worked for a long time on an initial report, then spent most of its time chasing finance from Kadugli, which always arrived too late, and trying to maintain a certain regularity of tours to the established committees. But when money was late for several months in 2010, activities more or less died down completely.

While everything was on hold in Heiban, IFAD in Kadugli was nearing the end of its South Kordofan Rural Development Programme, albeit with an extension of 4 years. It was unclear how IFAD's would be implemented in 4 years in such a way that the extension system would function without external funding. It was unclear how functional development committees were to be established in only 4 years, some completely from scratch, if setting up such initiatives in even relatively uncomplicated sites had required all previous years of the programme.

The technical feedback that was one of the basic functions of the development committees should have been handled with care under these circumstances. But whatever information

arrived in Kadugli was included into governmental planning. When I went to the Planning Management section (*idārat al-taḫṭīṭ*) of the Ministry of Agriculture and Forestry, the staff showed me their data, dispersed throughout various different computers, and knowledge about available data had to be discovered through collective communication. I received some data, as both soft and hard copies, in the form in which they were used by the Minister in presentations and reports. The staff of the Planning Management section said that these were the data from the development committees, which were brought together here as aggregated numbers for further usage in Khartoum.[373] What kinds of information could these aggregated numbers have possibly facilitated?

Conclusion

Development is a discourse and set of practices, an imperial intervention, a cultural construction of modern origin, a space of struggle over the terms of society and the economy, a desire on the part of many people the world over, and even the political and cultural struggles arising from the promises it makes and rarely fulfils. It is also a network of sites, a complex object of ethnographic investigation, a site of the construction of hegemony, and a site of contestation. As an expression of the modern constructs of progress and overcoming, of linear time and accumulation, of a liberalism based on private property and representative democracy, development is deeply entangled in the process of modernity – for some, it continues to be the main mechanism for enforcing such modernity, more apparent at a global scale today than ever.

Arturo Escobar, Development, trans/modernities, and the politics of theory
(Escobar 2008: 129)

When Schumpeter summarized his concept of creative destruction in the midst of World War II, it was written implicitly for a time after the war had ended. He meant to point out the long-term process underlying the many different episodes and phenomena that tend to seduce us into missing or misunderstanding their larger background. In one of the most critical passages of *Capitalism, socialism and democracy* he wrote:

> The opening up of new markets, foreign or domestic, and the organizational development from the craft shop and factory to such concerns as U. S. Steel illustrate the same process of industrial mutation […] that revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism. (Schumpeter 1942/2008: 83).

On the surface an analytical concept, Schumpeter's usage involves subtle judgments about the 'better' and the 'worse' outcomes of this process. Similarly, the following move towards a concept of development as the extension of organizing principles is also an attempt to integrate analytical and normative elements.

The foregoing text describes emerging sites of development projects against the background of recurring wars, surrounded and pervaded by both destructive *and* constructive dynamics. The conceptual work underlying and resulting from the case studies is an attempt to grasp the complexity of a particular term, 'development', which is widely used to claim, or at least imply, that certain situations and their conditions are 'better' than others, according to seemingly universal criteria. This conceptual work will proceed now in five steps:

First, a review of the case study of agricultural production (row 2) will indicate the complex relation of technical and political aspects when problematizing development. Second, a look back at the issues surrounding water supply in Abol (row 3) will discuss the implications of regarding development as an issue of organization. Third, the issue of connections (row 4) will be brought in to highlight implicit and explicit normative valuations in development cooperation. Fourth, the terminology of translation will be considered to streamline these aspects, using observations from the section on information (row 5).

Finally, an analytical perspective drawn from these lines of thought will be summarized.[374]

Development and problems

After recounting a walk through fields around Heiban with a befriended subsistence farmer, I documented various different forms of spatial organization of agricultural fields in Heiban. The way in which access to food and water was organized is more or less similar among most of Heiban's rural population: subsistence production of staple food; additional purchases from local markets; manual transport from source to home. But a closer analysis of food production arrangements supported earlier studies documenting not only

organizational complexity and plurality, but also an element of experimentation amidst convention and routine.[375] Many of those spending most of their lives in rural settings also experienced other arrangements at least occasionally, either as guests in urban households that relied exclusively on market goods, or as receivers of relief distributed by aid organizations. Some had lived so long with other arrangements that formerly routine tasks had become burdensome chores, and the recurring potential crises of access to sufficient food made the prospect of alternatives attractive.

I related current assessments of, and governmental plans for, the agricultural production sector in northern Sudan to an attempt by the Heiban Cooperative for Agricultural Development to register land and begin mechanized farming. Numerous studies have documented a lack of governmental responsibility, or ability to provide food to 'the citizens', and the subsequent reliance on aid.[376] Although current dynamics render the national state apparatus merely one among many active political entities, propositions for solutions deal for the most part with metaphors and institutions representing a unified territory ruled by a single governmental administration, as was shown above through an examination of the food security assessments of FAO and WFP. Such a singular conceptual entity, so it seems, makes it easy to speak clearly about what is 'internal' and what is 'external', to distinguish sharply between 'the citizen' and 'the foreigner'.

In a national five-year plan, priority was given to the availability of land for commercial investments and 'modernization' as way to encourage higher productivity to supply the national food stocks. This presumed the existence of a national entity, whose primary interest was to ensure that the food needs of its citizens are covered. Large-scale investors and farmer associations were identified as the entrepreneurial driving forces of a so-called agricultural revival to this end. In South Kordofan, a tractor distribution programme for registered cooperatives was initiated based on this rationale.

But the case study highlighted the disparity between the explicit aims and presumptions of governmental planning and those of a studied cooperative. The case of the Heiban Cooperative showed that the issues its members attempted to address were very different. The initiators of the cooperative did not share the presumption of a primary commercial or national interest in land. They started based on the observation that what they regarded as ancestral land had, from their point of view, been appropriated by foreigners, and they perceived a need to reinforce a sense of belonging to this land. In addition, an attempt was made to strengthen their claim to this land through recognition by the governmental legal system, specifically by registration through a legal entity, the cooperative. This attempt resulted only in the registration of about 1% of the overall claim, embedded into the state's administration of agricultural lands. The other aim, that of contributing to the livelihoods of

members, was not achieved, either, since neither the organizational complications inherent in maintaining connections between three locations (Khartoum, Kadugli and Heiban) could be solved nor the weak response to calls for participation be improved. Obligations related to paying instalments for a tractor finally brought the cooperative into a financial crisis.

The initiators' aims were displayed in this study against a backdrop of fundamentally contested land issues in present South Kordofan and beyond. But they were also part of a wider striving for emancipation, in which the complex relation between food supply and power structures was but one element. Apart from that, this study also highlighted the different socio-economic bases from which the cooperative's various members operated, which in turn influenced how they invested time and energy into the emerging site. Since members with a stable monetary income did not actually need to ensure the project produced economic output, and subsistence farmers could not be sure of gaining a surplus from this investment, nobody involved made actual food production a central matter of concern.

In order to grasp not only the organizational plurality, but also the plurality of concerns involved, I approached these issues with the pre-conception of the existence of intertwined political and technical processes. While 'political' in this context is defined as 'whatever leads to something being a problem for somebody', 'technical' specifies the definition and organization of potential solutions. Both continually co-exist and intersperse, as problems urge the formulation of solutions, and solutions in turn can cause or become problems. The resulting dynamics of problematization can be analyzed at many scales, for instance, in the temporary unease of an individual person or in the long-term going concerns of a large group of people.[377]

The disappearance of subsistence manual labour appeared, in the governmental development plans analyzed, not as a problem but as a potential solution, while the challenge to their livelihoods heralded by large-scale mechanized farms was a going concern for many subsistence farmers. A solution proposed for subsistence farmers – an agricultural cooperative – was problematized not only in the course of organizational difficulties, but also in the course of solving other problems competing for time and energy. Some members regarded the cooperative as representing a revival of a sense of fundamental belonging; others regarded it as merely one potentially negligible social activity among others. Time was invested by the main initiator in the task of finding appropriate land to cultivate for the cooperative; but he also spent time finding land for individual production. Some understood the financial and legal implications of the tractor programme; others, uninformed, simply followed the promise of 'modern' equipment.

The terminology used ('technical' / 'political') is intended to help grasp the interactional fields related to individual 'bouquets' of identified problems and the various skills and techniques used to react to these perceived problems. This not only addresses the observation of such fields, but also engages with the organizational necessity for both individual lives and social interrelation to constantly negotiate the ascription of relatively 'higher' or 'lower' values to problems and solutions. The following two argumentative steps relate these aspects of organization and valuation to the case studies about water and infrastructure.

Development and organization

I described the situation of water in Abol as highly problematic. A visualization of water sources, integrating GPS measurements with direct identification by local residents, was created in an attempt to indicate the temporal and spatial conditions of this situation. Seasonal fluctuations in rainfall regularly confronted the residents with uncertainty concerning not only the abundance of natural water resources, but also the availability of water for rainfed agriculture. I briefly discussed different projection models designed to reduce this uncertainty, but pointed out how governmental data production for such models was limited, concentrated on only a few locations.

I then showed how both a governmental plan and an NGO development project aimed at constructing dams, larger in scale in the former case, smaller in the latter. Both required and assumed the presence of a combination of so-called 'local interest' in the construction projects and recruitability of so-called 'local labour', which, again it was assumed, would merely have to be organized. The emergence of the smaller dam project was followed through narratives of those involved and participant observation, and some contradictions were specified. The most momentous contradictions were found in the various temporal perspectives on the outcomes of the project and in the differing interpretations of the kind of labour involved. The greatest differences between the temporal perspectives were evident in the contrast between the long-term effects considered by engineers and other designers of the project plan and the first season's changes perceived by many residents to be insignificant.

A financial arrangement in the project, which took the form a payment divided between a water committee fund and the individual worker, was supposed to level out potential conflicts between individual interests and communal benefits. While this represented an attempt to go beyond the presumption of villages as consensus communities, the relative insignificance of the payment combined with the content of the task itself – carrying stones to the locations for micro-dams – created confusion as to what was paid. Especially young men who engaged

regularly in the construction labour market refused this kind of ‘semi-paid’ labour, the purpose of which was unclear to them.

Paid labour was not the only existing form of organized labour, though. In the case study about agricultural production, I stressed the importance of ‘work parties’ as a strong, albeit fading, form of social organization. Because such collaboration was based on reciprocity, it had to emerge from a sense of belonging and moral duty. In other words, the actual devotion of time and energy marked the strong ties in social relations. In this sense, the micro-dam project was an offer *and* a request to devote time and energy to a certain organizational framework, its procedures, and its prospected outcomes. Actual engagement with such an offer and such a request thus seemed contingent on the emergence or non-emergence of a form of collective action that outdid alternatives for a number of reasons surpassing the criterion of payment. In a simpler form, this posed the research question: what induces people to work together in a development project?

I introduced a further example from water-related interventions in Abol to contextualize the micro-dam project. The initial mapping of water sources had pointed to the basic difficulty in ascertaining where and when water would be found. In the case of underground water whose existence could not be deduced from the surface, the effort to tackle this difficulty was connected with devices to enhance both human perception and the ability to gain access to the water. An attempt to organize both discovery of and access to additional water sources in the form of a water yard triggered a number of interactions that I tried to trace through interviews.

The resulting narratives showed a great disparity between various perspectives and claims, which indicated ambiguous and dysfunctional links in what had been initiated as part of a system of state-based water administration. This points to the implications of establishing connections, which I will come to in the next section. I want to stress here how the perspective of development as organization requires questioning basic entities of analysis and social action.

In the analyzed case studies, the intention was to create organizational frameworks. The intention to bring people together for collective action had to work, in both its planning and its communication, with the ontological presuppositions of a shared interest and of achievability; presuppositions without which the proposed interaction would lose its grounding. However, the projects actually resulted in something else with unintended consequences.

Therefore the usage of the terms *emergence* and *site* was preferred here: The analysis of the structures, conditions and dynamics of direct interaction were facilitated by grounding the analysis on the interaction itself. Its context had to be uncovered through the identification of implicit elements that both allowed the interaction to take place and actively shaped its

formation, but at the same time they were also reformed through it.[378] To see the content of interaction in sites as emerging through a co-creation with their context made these concepts very useful for the specific situation of development projects.

At the same time, there had to be a reference to the organizing elements which brought, or were intended to bring, people temporarily together in cooperative, coordinated action. In the following sections the bases of cooperation and coordination will be reviewed further.

Development and values

The social ties that are both necessary for and strengthened by pooled labour can also be described as meaningful connections. Connections were discussed in the case study about physical infrastructure, in relation to the conditions of their creation. This started with a short historical background on Kubang during the war and on road construction during British colonial times, and continued with an overview of recent assessments and development programmes intended to extent road and electricity networks. The overarching perspective in the planning of network extension was found to be that of economic feasibility, i.e. the balance of costs involved in creating new connections against their prospective benefits. A short reference to resistance to the creation of road extensions in South Kordofan was then carried over to questioning not only who, exactly, the intended beneficiaries of such interventions are intended to be, but also what formations of leadership and domination are negotiated with and around these roads.

Both observations relate to normative distinctions between more or less important, between higher and lower; in other words, they are related to issues of priority. Details of the historical and current planning of roads for the central Nuba Mountains, for instance, showed the distinction of roads according to economic function; a World Bank report directly defined so-called connectivity standards by the recognition of a link between rural areas and the importance of their agricultural production for the 'national network'. A quoted growth diagnostic for South Kordofan also placed emphasis on the importance of the connection of markets. This points to the ascription of specific values to specific areas, and subsequently to prospective roads connecting those areas.

My argument stressed that processes of prioritization have to be considered, not only in order to understand the *politics* of distribution, but also to understand the way in which it is approached *technically*.

The history of distribution politics in the region is well-documented for the 20th century. But in order to become a problem, individuals' experience of variable access to productive and distributional arrangements has to meet the perception of inequalities *as a problem*. For instance, the prospects of a progressive increase of available energy also increased the

demands for and the necessity of new arrangements for providing access to this energy; in other words, a change of distribution practices. This not only concerned the claim of armed forces to have privileged access to resources, which was increasingly challenged after the war. The promise of electricity at home also opened new perspectives, and led to other demands for energy supply increasingly perceived as indispensable: electric light, refrigerators, television, etc.

In a planning perspective that is mainly concerned with ascribing economic value to different regions, development appears merely as contest for importance in networks of distribution. This touches on the power-driven process of objectivization of the values and needs of people excluded from active participation in this process, namely the decision about what and who is important. This process perpetuates economic inequality through political inequality, and vice versa. In this sense, it doesn't change structures of inequality per se, whether the decision-making passes from state-based administration to market-oriented companies or, to so-called non-profit organizations.

But my argument has highlighted also that the implicit and explicit prioritization in the course of engaging various *techniques* of distribution can perpetuate inequality just as well, even if the techniques themselves are ostensibly participatory and this effect is unintended.

The organization of distribution requires skills that are themselves unequally distributed. As the example of the *buma* representative in Abol showed, the accumulation of decisive functions in his hands was not simply explainable due to his connection with a powerful organization, SPLM. His dominance in several construction projects was also a result of his skills, which were again reproduced and enhanced by his recurrent function as leader: A person's embodied skills and knowledge, and the social conditions of access to further skills and knowledge *together* determine the scope of tasks that this person could handle.[379]

Accordingly the question of how leaders are appointed in order to further the aims of organization cannot be reduced to the single purpose of perpetuation – or alteration – of power structures.

The case study showed, too, that leadership was contested as new forms of leadership emerged, which operated based on different principles of representation. A look at the historical background of several forms of leadership in Kubang indicated that such a contest had to do with ideas about arrangements before, during, and after the war. The Native Administration system, though at least instrumentalized if not even formed by British colonial rulers, was to some extent regarded as a more 'indigenous' form of rule than the SPLA/M-based *buma-payam* system. At the same time, it seemed that the source of authority during the last twenty years was one legitimized by threats and violence, with the result that comparatively 'soft', consensus-based forms of authority lost their power.

In a more general perspective, this change is a part of the ongoing negotiations about how leadership in society, and thereby also social orders themselves, 'should' be: How to regulate and administer resources and produces; by facilitating or by limiting access? How is labour force and energy recruited, directed, maintained, and extended? Who works on what? For whom do they work? When and where do they work, and what technologies and information do they use?

I will not engage in an old sociological debate touched by these questions, namely the idea of the division of labour as constitutive of social orders.[380] Instead I want to highlight that development interventions address and strengthen specific kinds of organizational, directive setup. This is not only co-constitutive with the conditions of possibility of leadership *in the emerging site* of social interaction. It also implies the *kind of society* that is envisaged, what kinds of inclusion and exclusion are likely to result, what channels of resource extraction and accumulation are selected to be maintained, cut off, or changed,[381] etc.: Who is supposed to be engaged in what kind of activity, for the benefit of whom, and according to whose concept of a 'future society'?

One point indicated by the case of the *buma* representative is that this directional 'vision', this anticipation of a desirable 'future' is a co-creation of both individual minds and social conditions.[382] The *buma* representative, on the basis of his position in society, simultaneously both handled the construction of central buildings in and connections to his home village of Abol, and manipulated the planned position of a water yard so as to have it built near to his household, which would have been of use both to him *and* the people living nearby. This specific connection of priorities, however, caused a redirection of technical considerations, which finally led to a failure.

In fact, the emergence of development projects' interaction with their 'beneficiaries' is connected to the pragmatic necessity to have guiding ideas about what would be 'better' for whom. But the explicit ideas conveyed by specific development programmes have to be persuasive enough to attract the devotion of time and energy of many individuals to the projects. Persuasion and other forms of directive influence are not only connected to the existence and recruitment of leaders and authority. Individual, biographical perspectives add to the general organizational considerations about development sites by raising questions about who can be convinced of what. The persuasive power that development projects' offers can extend during their emergence thus has to do with values embedded in the way in which this emergence takes place, including valuations of what is more or less important, and who is 'higher' or 'lower' in society.

Central for this perspective is the ambiguity of projective thinking and its consequences. What is constructed must to be connected with the question what is destroyed, and the

apparent clarity of objectives must be scrutinized to determine what viewpoints and voices might have been eliminated in their creation. In a marginalized region full of violent conflicts, this seems to be a crucial point.

Development and translation

The last case study reviewed one of the largest recent attempts to re-establish rural administrative structures in South Kordofan, IFAD's South Kordofan Rural Development Programme. This programme aimed to establish regular communication interfaces between rural areas and public administration in the urban centres, among others, in order to convey information about productive activities and needs through Village Development Committees. In its plan, the IFAD programme described 'simple' procedures designed to secure implementation with low budgets. At the same time, insecure areas were excluded from this implementation, in order to protect any assets that would be created and to help to ensure sustainable results. During the design period, at the end of the 1990s, this referred specifically to the ongoing war in SPLA-held areas. After the Ceasefire Agreement in 2002 and the Comprehensive Peace Agreement in 2005, the bases of the programme were not reviewed, though, and therefore security-related arrangements perpetuated the very patterns of exclusion that had originally led to armed resistance, and thereby the 'insecurity' of established structures.

But even the rudimentary extension of the programme into SPLM-dominated areas was found to lack 'simple' bases: Lack of supportive finance for the local office prevented regular contact with the committees; lack of thorough organization disregarded basic arrangements, such as for the provision of child-care to allow members with children to attend meetings. But fragmentary activities, and information about them, as in the case of the contact farmer experiments, were still fed into the federal and national databases as 'results of development efforts'.

These databases were shown to be connected with concepts such as evidence-based development, and several kinds of information-improvement programmes. These programmes are based on the presumption that facilitating access to information about needs leads to the improvement of a situation, a presumption that seemed to neglect the question of whether such information does indeed trigger action. In fact, this question problematizes development cooperation as a process fluctuating between political valuations ('what and who is a problem?') and valuations of technical capabilities ('what and who can solve this problem?').

Since it seems that 'development' is going to stay, both as a discourse and as a set of practices, there have been several conceptual attempts to come to terms with it and its

critical elements, some of which have already been indicated in the preceding analyses. Criticism from the point of view of political economy, for instance, might start by questioning property relations and self-reproducing processes of capital accumulation (Cox & Negi 2010). Another prominent line of new studies has placed so-called development experts in the spotlight, viewing them through the lens of politics of knowledge, which stresses that the performance of knowledge as 'expertise' itself acts to legitimize, maintain and reproduce its superior status *as* 'expertise' (Mosse 2008, Mosse 2011). A more activist strand of criticism has considered development projects as potential sites of critical political engagement, where terms of modernity are negotiated (Escobar 2008).

Critical debates have triggered the recurrent observation that these manifold critical comments, often denoted as being 'anthropological', do not contribute anything useful to the problem of actually addressing "the need to manage ignorance" (Fforde 2010: 202). As Deepak came to realize, the creation of operational categories that 'one can work with' had to become his main organizational necessity, as "it is the management of inconsistency that confronts practitioners head-on, not the realisation that knowledge is socially constructed, useful as that is" (Fforde 2010: 202).

One way of addressing this perceived 'impracticality' of critical development studies has been to distinguish between research *on* development and research *for* development. Further reflection on their relation considered that this only would constitute a fruitful division of labour when there are bridges of dialogue between these two areas of research *and* between the several disciplines practicing them *and* those with whom the research is actually concerned (Habermann & Langthaler 2010, Kolawole 2010).

A particularly influential concept for the investigation of alternative operational models was Amartya Sen's *Development as freedom* (Sen 1999). Sen's critical concept was translated, for instance, into the Capability Approach. This approach is seen as complementary to the dominant Rights-Based Approach (RBA) used, e.g. by UNDP, and the Sustainable Livelihoods Framework (SLF). It was intended "to move away from the income-led evaluation methods and focus on people's ability to achieve the things that they value" (Frediani 2010: 175). Resulting operational models, for instance, attempt to connect together many different kinds of information: 'conventional' forms of data such as the Human Development Index; the informed guesses of researchers in order to provide normative assumptions; 'public consensus' through participatory evaluations; group discussions and participatory analysis to assess people's values; and empirical data to allow expert analyses of these values (Frediani 2010: 177).

Cozzens et. al. 2008 considered three 'literatures' about development and urged their co-reading towards a concept of 'development as freedom'. In this account, New Growth Theory

stresses “the role of the State in assuring the conditions for economic growth through monopoly over new commercially important knowledge” (Cozzens et. al. 2008: 793). The network-actor perspective of innovation system approaches “focuses on firms and their learning processes, asking how these can be enhanced by incentives and interactions with other institutions” (Cozzens et. al. 2008: 793). STS literature, finally, “follows the science and technology institutions of the North as they encounter and engage knowledge produced in other contexts in the South” (Cozzens et. al. 2008: 793). Such a co-reading, the authors argue, could nurture fruitful analyses of knowledge confrontations, and stories of ‘successful confrontations’ can help by “informing the practice of those at the bottom” (Cozzens et. al. 2008: 803).

The extension of analytical perspectives also underlay demands to include frequently disregarded actors such as businesses and migrants’ organizations, whether they are considered as “a fourth pillar” (Develtere & De Bruyn 2009) or conceptually included from the beginning, as has been attempted here, within the framework of practice theory. Others urged the use of narratives as a tool of communication in development cooperation (Carr 2010) and, by extension, counselled taking narrative accounts about development seriously in their complex representation of actors and their perspectives (Lewis et. al. 2008).

Attempts to extend the definition of ‘developers’ led also to an explosion of networking concepts and, specifically, to a high currency of the term ‘participation’. A mass of participation concepts (and their acronyms) have appeared throughout recent years (Cornish & Dunn 2009). The concept of Real-time Research (RTR), for instance, incorporated strategic action planning (SAP) and community action planning (CAP) by identifying those to be worked with as ‘partners’ and ‘principal stakeholders’ (Brun & Lund 2010).[383]

The different concepts of ‘participation’ attempted to react to demands for bringing what Rottenburg called ‘centers of calculation’ (e.g. the head office of an international donor organization) more or less at eye level with ‘implementers’ and ‘beneficiaries’. This can be regarded in the context of attempts to co-create operational information *outside* managerial centres that perpetuate a kind of imperial paternalism, and beyond dichotomies of ‘academics’ and ‘practitioners’.[384]

Indeed, participation can be treated as a concept that allows the extension of social interaction to be addressed in the process of planning and directive management. One of the attempts to find a flexible middle ground between autocratic managerial hierarchy and dysfunctional plurality was the concept of ‘communities of practice’, which was proposed by Jean Lave and Etienne Wenger to discuss practical learning (Lave & Wenger 1991). The starting point of their argument was the situatedness of learning, which “implied emphasis on comprehensive understanding involving the whole person rather than ‘receiving’ a body of

factual knowledge about the world; on activity in and with the world; and on the view that agent, activity, and the world mutually constitute each other" (Lave & Wenger 1991: 33). Participation in such learning communities was seen to be peripheral, as there are "multiple, varied, more- or less-engaged and inclusive ways of being located in the fields of participation defined by a community" (Lave & Wenger 1991: 36).[385]

This construction of the interaction in development through learning communities or learning organizations also nurtured the formulation of a large number of models (Parkinson 2010). The potentially self-defeating dynamics of these concepts have been critically reviewed, again, often under the term 'buzzwords' (Cornwall & Eade 2010). 'Participation' was identified as a 'buzzword' that began as a counter-hegemonic concept of empowerment and ended up as a form of "currency and trade value in the competitive market struggle for development project contracts" (Leal 2010: 89). This assimilation of critical discourses into the mainstream can be described using a managerial concept: 'Out-of-the-box' is often used to denote supposedly unconventional thinking that is nevertheless sufficiently thinkable to be noticed and potentially to become conventional. According to a concept I will now address, these processes are translation processes of problematization and stabilization that constantly negotiate social orders of interaction.

I return to Escobar, who asked what kind of anthropological engagement should follow from so many critical perspectives, and pointed to the possibility of political engagement *through* development discourses and interventions. A concept of 'translation' can contributed to providing a bridge between epistemic heterogeneity and practical integration. My case studies and the preceding review of concepts have pointed in manifold ways to processes of translation in a sense that I particularly want to highlight at this point.

Recently there have been several attempts to make the term 'translation' useful in order to analyze what is going on under the term 'development'. One line, following the conceptual work of Bruno Latour, attempts to dissolve binomial oppositions such as context / content, developer / beneficiary etc. by tracing chains of translation.[386] Authors like David Lewis and David Mosse have stressed the existence of 'brokers', translators in this process, who perform the necessary tasks of mediation between heterogeneous actors supposedly interacting in the development sites (Lewis & Mosse 2006).[387] Another focus has been developed by Richard Rottenburg, whose argument in *Far-fetched facts* I will now take up again, to show that 'translation' can be seen to go beyond what has already been mentioned.

One of the starting points of a collaboration between Michel Callon and Bruno Latour with the intention of making the term 'translation' useful for the social sciences was a question they derived from what Hobbes had called Leviathan: "How does a micro-actor become a macro-actor? How can men act 'like one man'?" (Callon & Latour 1981: 279). In other words, their

approach to social analysis emphasized the search for processes of translation, by which many can act as one, as a 'macro-actor' or collective actor, without thereby dissolving the individual actor and this actor's ability to act as individual. This concept was supposed to go beyond presumed macro-actors such as 'the state', 'the organization' and the like, and thereby beyond the assumption that these macro-actors act somehow differently than individual actors and thus warrant different analytical treatment, in a way that effectively treats individual actors as 'swallowed' by a big black-box macro-actor. This attempt to 'unscrew the big Leviathan' was thus not just about looking behind the curtain of such powerful collective actors, but also about questioning the power relations that make them 'big'.

Using this terminology, Rottenburg described what happens in development cooperation, concentrating on managerial processes between financiers, project-executing agencies and projects. What he calls 'technologies of translation' will serve me here as a conceptual means of integrating the lines of thoughts considered up to this point: how something becomes a problem for somebody; how this somebody takes up the problem and tries to find and organize a solution; how this somebody relates different possible solutions to that something through the ascription of values of 'better' and 'worse'; and how, finally, many heterogeneous somebodies with heterogeneous problems come together in the context of a 'development project' and try to cooperate and coordinate under these conditions of heterogeneity.

Let me redraw a simplified version of Rottenburg's argument (Rottenburg 2009: 173-200): Development cooperation is based on a narrative of progress, according to which 'modernization' is the creation of better solutions to contemporary problems, a process intimately connected with the creation of certainties about 'the reality' of the situation. At the same time, this cooperation operates internationally with the ideology of political equality and technical inequality; in other words, sovereign nation states define their own problems, but developed countries, or development partners in general, help out with their superior technologies to solve these problems. But political and technical processes are actually interwoven; whatever occurs in such cooperation has thus to be translated into a *technical game*, as Rottenburg calls it: Contested knowledge is translated into consensual information by research; disagreements about goals are translated – whether by negotiation or coercion – into problems that can be solved by 'objective' calculation. In this sense, the negotiation of 'reality' and the negotiation of values intertwine.

This is based on the – perhaps structurally unavoidable – assumption that everything that occurs can be translated into a presumed-objective, universal technical language: that of facts and figures, which everybody in the game understands and shares. It actually creates a

very specific form of visibility, containing distortions and inconsistencies that have to be regarded as negligible, in order to go on with the attempt of cooperation and coordination. These distortions are the result of multiple translations between sites of intervention and managerial centres of calculation, where resources and actions are planned for the sake of the – ostensibly – consensual development goal. This involves the aforementioned principal-agent problem, in which the distance between the centres and something 'out there' has to be overcome by mediating agents, who create trustworthy, accountable representations that can then be used as bases for communication and decisions about 'the project'.

Managerial communication and decisions happen in moments of aggregation of people and things, who then must both disseminate and be disseminated in order that the decisions can be implemented. The constant cycle of aggregation and dissemination is mediated through multiple processes of translation, referred to by Rottenburg as translation chains:

> "[T]he objectivity of a representation cannot be resolved according to the model *adaequatio rei et intellectus*, the equation of thought and thing. The issue is instead the clarity and the methodological validity of the aggregation used to compose the bigger picture from the individual pieces. Because these individual pieces are not direct substitutes for an external reality but instead bring forth a cascade of further substitutes, one is never dealing with a single referent but rather with a diversity of internal or *transversal referents* that have been organized into a chain such that they support themselves as they proceed along it. From this perspective, a representation is always a cascade of re-re-…representations" (Rottenburg 2009: xxxii).

In practice, these translation chains create many uncertainties, which haunt those who "seek to cooperate under conditions of *heterogeneity*" (Rottenburg 2009: 191). Instead of multiplying more or less equal centres of calculation, acknowledging the limits of local contexts in each of them, a hegemonic practice maintains the belief that facts can be fetched and managed from afar, provided that those outside the centres can be disciplined and learn 'how things are done'. Under this hegemony, people meet in 'trading zones', ideologically as equal players in markets, but actually under condition of inequality and heterogeneity. Those interacting in trading zones use a 'pidgin trade language', reduced to what is necessary for and allows cooperation to occur at all. Even when it appears that this reduction has caused something important to individual players, or even something necessary in order to actually solve a defined problem, to be disregarded, the existence of the trading zone as such is seldom questioned. In the silence that is maintained in order to keep trade going at all, inequality continues to suppress what is important to those who are less at liberty to decide their participation, if they are able to choose at all.

As with any hegemony, this is not without its counter-currents, everyday resistance and hidden transcripts (Scott 1985, Scott 1990).[388] In negotiations *inter imparēs*, there is still the

need for a common language, especially if the official claim of the negotiation is a condition of equality. Rottenburg calls this common language *metacode*, from which the negotiating participants switch into a cultural code in the pauses in negotiation. Neither can replace the other without transgressing the rules of the game, but some space might be created for mutual extension of vocabulary, to stay with the metaphor:

> [T]o engage in reflection means to consider the objectivist metacode during pauses in negotiations as a cultural code and to review the basic cultural assumptions that surreptitiously flow into it. If it is impossible to replace the metacode with a cultural code, it is both possible and advisable to alternate continuously between the two in order to avoid being trapped by one's own blind spots. This recalls the elementary imperative of anthropology: to learn to see through the eyes of others, even if the other actors in this play with changing perspectives often do this unwillingly and rather poorly. (Rottenburg 2009: 200).

To change perspectives means also to vary forms and styles of presentation and communication. Rottenburg used a parable mixing reflection and invention to make sense of the complexity and uncertainty that modernization by so-called development cooperation actually brings about. My final conceptual thoughts try to relate these lines of thought to the processes of problematization, and the subsequent searches for solutions that emerged in the sites of development projects in and around Heiban.

Development as the extension of organizing principles

I certainly subscribe to Sen's credo to "have tried to present, analyze and defend a particular approach to development, seen as a process of expanding substantive freedoms that people have" (Sen 1999: 297). However, what needs to be communicated, or better, translated to 'expand substantive freedoms' goes well beyond the frame of this text.

I will concentrate therefore on wrapping up the perspectives and terminologies I have used – to say it with Bateson – to make informed guesses about the cases I studied.[389] Therein my analytical perspectives rest comfortably on conceptual precedents, and I have simply attempted to add terminological variations to increase the comprehensibility of the studied situations and their contexts. In this sense, the rationale for describing development as the extension of organizing principles is as follows:

Development as a discourse is about how to do things better, in order to approach some state of affairs which is considered a desirable 'future'. This understanding places a normative distinction between 'better' and 'worse' at the heart of the concept, which nevertheless has, in principle, no centre: Desirability is a valuation contingent on perspective, which is negotiated both within individual minds and through the intersubjective relations in which they are embedded. Development negotiated in an organizational field, however, has

to be pursued based on some kind of agreement about what is ‘better’ and what is ‘worse’, and what practical consequences such distinctions are supposed to have.

These consequences intervene in an essential sense in human lives: A change of practices implies also a change of what occupies a human’s time and energy, and the ways in which it does so. Since this occupation defines human life as well as the position of the individual in society, it has an essential quality, and its qualification is imbued with a high degree of urgency.

In fact, the negotiation of how to do things better takes place in relation to contests over what constitutes legitimate representation, and thereby directive power, at different scales. Based on that consideration, development cooperation can be seen as a process of negotiation of normative orders, or, in its practical attempts as intervention, as an *extension* of specific ways of ‘how to do things’.

In the terminology employed here, extension takes place through processes of translation. The creation of collective actors, the aggregation of people and things, in short, *organizing,* occurs through – more or less voluntary – delegation (of representation and subsequent directives for action) to substitutes, referents, managers, or rulers. Extension connotes, however, that such processes are intended to grow in scope, to accumulate, incorporating the normative judgment that they are ‘better’ than alternatives.

In addition to this expansive, superseding character of extension, the directive character of organizing also makes development an issue intimately related to ideas of ‘more’ or ‘less’ important, of ‘higher’ and ‘lower’, and thereby of restraint or emancipation of the less important ’lower’. In this sense, development cooperation is a contested field of interaction, in which positions in power relations are negotiated, i.e. cemented or challenged. Planned directives to act experience political resistance and technical challenges and thus have diverging consequences. These diverging consequences call for an assessment of the role of directed motions and planning in the interactional sites of development projects, which are far from being the intended result of purposive social action.

The terminology of technologies and practices adds a further layer to this concept: Everyday problems, such as getting food and water, require *principle* solutions that can be trusted, or, in other words, institutionalized, internalized, normalized solutions that inform daily practices. A major concern of what is frequently discussed under the term ‘sustainable development’ is how to create a new normality, how to *extend ‘better’ organizing principles*. But everyday practices consist of a multitude of interrelated organizing principles; therefore even small changes have a high degree of complexity. For instance, the change from washing hands once a day to washing hands before, during and after cooking can be broken down into many smaller changes, both cognitive and behavioural:

- recognition of unwashed hands as a problem, *and*
- reorganization of water supply for increased use, *and*
- recognition of the washing of hands before, during and after cooking as a better way, *and*
- rethinking of how to organize cooking so as to include washing hands, *and*
- actual change of many routines of cooking as a practice.[390]

Since development projects, and development cooperation in general, cannot deal with this complexity as such, they rather deal with fragmented and re-aggregated representations of reality, by means of established technologies of representation such as lists, questionnaires and reports. This process necessarily creates invisibilities, but such invisibilities also exist on a deeper level. Invisibilities are created by taking things for granted, for ideological or practical reasons. In the process of building up something new, of introducing new technologies to solve problems, this 'ontological shadow' is reproduced and can result in a failure to establish meaningful connections, either from the beginning, or after those who were able to read the technologies' inscribed, black-boxed rules of usage have left the field. Most especially the provision or offer of technologies without an accompanying provision of adequate information (assuming future legitimacy and practicability to be facilitated by the label 'development'), has often resulted in a failure of the 'beneficiaries' to integrate these technologies into everyday practices and to reproduce them through institutionalized social action.

On this basis, my thesis deals with a simple question: If development is understood as a change from existing organizing principles towards better organizing principles, how is this change brought about, sustained and extended? Rather than dealing with this question primarily on a conceptual level, I have concentrated on issue-oriented case studies and adopted several different perspectives from which to examine them.

This started with considerations about the appropriate form of textual representation. The Nuba Mountains have seen many contentions during recurring wars, in which there was conflict over where legal and political borders lay, and who should make decisions about, and finally be the main beneficiaries of, natural resources and human capital. During the last decade, the result of this struggle was an initial period of stagnation after the CPA, followed by a return to war. To adopt a linear text structure in this thesis seemed to be at odds with the cycles of violent ruptures and contradictions in the region, which forced residents to remain flexible in their strategies of survival, rather than building a linear perspective of growth and progress.

A linear perspective also seemed to contradict the actual heterogeneity of actors involved in development projects –including myself – and the heterogeneity of their representations. The chosen compromise was a form both indicating and taming ruptures and heterogeneity by distinguishing various different perspectives in terms of both scale and direction. Rather than suggesting a causal progression, this distinction was meant to indicate the co-presence of interlocked perspectives.

The term 'topography' was used to indicate the implications of intersubjective perspectives on what the main issues in the region actually are (column A). Through narratives recounting conversations and personal visual impressions and experiences, I have tried to convey my exposure to social situations that indicated that certain issues were more relevant than others: In [c]Isa's account of his subsistence farming, I sensed that the way in which space is organized for agricultural production was an important issue, concerning both the availability of land for use and the availability and allocation of labour force. In Abol, continual complaints about lack of water were related through accounts of tours to the village's water sources, and connected considerations about how, where and when water can be found. Failure to find sustainable ways to solve organizational conflicts in Kubang, and the position of the village in the recent war induced me to think about how connections in and around the village were and are created, including those connections between people that are established through representatives and mediators. Finally, impressions and memories of buildings in Heiban brought me to examine attempts to create administrative and other structures for networks of cooperation and coordination between supposed citizens of a nation state and their government.

Following this, I prepared a reflective analysis of these issues by focusing on specific aspects of and considerations about the creation of representations that support and make sense of these issues (column B). This started with the analysis of differing and differentiating usages of space for agricultural production in Heiban, which also touched on the question of who directed this spatial organization. The perception and visualization of timespace was considered for seasonal water sources in Abol, as part of an exercise in mapping based on heterogeneous sources of information. Finally, the 'mundane politics' of creating and maintaining physical infrastructure such as roads was examined through a historical study of road-building around Heiban during British colonial times. I then moved the spotlight to focus on technologies of representation used in development cooperation, through an anonymized study of the creation of an inception report in an international organization.

To introduce the element of 'improvement' that underlies development, I mentioned several concepts designed to generalize desirable situations (column C): food security (when everybody, at all times, has enough food, and that food is in a form that accords with their

own preferences); safe water (when available water is balanced both in quantity and quality); sustainable growth (when steadily increasing demands are steadily fulfilled); and evidence-based development (when needs are assessed using the best available data and are met accordingly). My subsequent analysis moved from food security assessment, to projection models for rainfall distribution, to the implication of so-called growth diagnosis, in order to point out underlying presumptions, such as national governments' responsibility to feed their citizens, the predictability of future precipitation based on historical trends, and the primacy of entrepreneurs and markets in promoting economic growth. A detailed look at a database created to assess development needs in South Kordofan was then described, and used to highlight some of the limitations inherent in the transfer of such information technologies to state administration under the banner of 'evidence-based development'.

After I considered some of the implications and pitfalls involved in identifying *what* is to be changed, I continued with some examples of planning that was an attempt to specify *how* certain changes should take place (column D). This account started with a short review of a governmental plan for agricultural revival, which regarded all land within a national territory as potential for foreign and domestic investment, but didn't mention any arrangements for distribution following production. Investment plans for water supply in South Kordofan were based on information from a data collection system that favoured economic hotspots and potential agricultural schemes for mechanized farming. International programmes for road and electricity networks followed the same pattern, linking prospective productive output of certain regions directly to the need to connect these regions with the networks in question. The links supposed to be created through a rural development programme for South Kordofan, finally, were found to exclude some regions on the basis of their 'lack of security' a concept whereby those areas considered less stable were considered a liability for investment due to the increased uncertainty involved in predicting their feasibility or success rates. All these plans continued, in spite of a rhetorical claim to the contrary, to perpetuate patterns of exclusion and inequality, by concentrating development efforts on favourable, because better-off, areas.

Similarly, my accounts of specific projects seemed to report only disappointments (column E): An agricultural cooperative in Heiban tried to register ancestral land and begin mechanized production, but registered only a relatively small plot and produced nothing. Years were spent on attempts to increase the availability of water in Abol by building micro-dams and a water yard, none of which, however, were constructed as planned. In Kubang, roads were built to other villages, but quickly became both indicators and casualties of contested leadership, as had other obstructed road constructions in other parts of the Nuba Mountains. The attempt to establish a network of village development committees through a

programme instigated by the organization IFAD remained at an embryonic stage right to the end.

But beyond the lines drawn by planning, small achievements were made: Instead of sitting back, some people started to organize themselves to resist what they regarded as violation of their rights. Instead of just moving to urban centres, some people stubbornly resisted the hardships of their natural environment and searched constantly for their own solutions. Instead of bending to the logic of military rule, some people tried to establish new, non-coercive ways of organizing public infrastructure. Instead of buying blindly into administrative concepts and distributional arrangements, some people actively tested the offers made under the label 'development' and took the liberty – whether 'offered' or not – of refusing them.

A final aspect must be mentioned, which has been touched only lightly throughout this text. Development projects often came in the form of initiatives, which triggered both reluctance *and* euphoria.[391] Maybe the emotional power of – perceived – new beginnings, and initial investments such as new buildings and other 'side benefits', are also responsible for continued participation in development projects even after the experience of long chains of disappointments. Maybe these little achievements, these 'side benefits', even constitute the beating heart of so-called local participation. At least, the importance of their role in determining the future of those seeds of organizing principles that were planted and left behind after the end of timed projects should not be underestimated.

[1] Apart from the theoretical implications of aggregating a 'region', the politically relevant definition of this 'region' is a problematic issue, which it is not my intention to discuss here. For practical reasons, I follow the distinction made by Guma Kunda Komey: 'Nuba Mountains' refers to an ethno-political region approximately 10° to 12° N, and 29° to 31° E, with elevations as geographical features distinguishing it from surrounding areas. 'South Kordofan' denotes a newer geo-administrative unit inside the administrative system of the present Republic of Sudan, whose exact extension is a contentious political issue. During a closed district policy during British colonial rule (1922-1949), the region 'Nuba Mountains' was first separated into districts and then in 1929 reunited with the northern part as Kordofan province. In 1971, it again became an individual province, now under the name 'South Kordofan'. 'Kordofan Region' was created in 1980 under the Regional Government Act, comprising both South and North Kordofan, while the introduction of a new federal system in 1991 divided the region into the three states North, West, and South Kordofan. (Teraifi 1987: 57, 60; Komey 2005: 189-190) The current South Kordofan includes parts of the former West Kordofan, according to an agreement made under the framework of the CPA (Chapter V, Paragraph 2: "The boundaries of Southern Kordofan/Nuba Mountains State shall be the same boundaries of former South Kordofan Province when Greater Kordofan was sub-divided into two provinces."). The open issue concerning the appropriate name (Nuba Mountains or South Kordofan) was mentioned in footnote 2 of CPA's Chapter V, to be solved by a committee. Although 'South Kordofan' was the name officially adopted, the political discussion continues, as do contentions over its southern and western borders.

[2] To explore this claim about the Nuba Mountains' history would require a deeper discussion, which cannot be undertaken here. A serious debate about the people of this region as previously untouched natives formed part of British colonial discourses about the right way to deal with 'the Nuba', which had as much to do with constructs of 'pure culture' and 'natural development' as with a reaction to asymmetries in economic power in relation to Nile Valley-based traders. However, the resulting policy had lasting consequences, the extent of which is the issue of numerous publications (for the most extensive blame see e.g. Ibrahim AUM 1977, Salih 1982, Ibrahim AUM 1985, Salih 1990, Willis 2003, Abu Saq 2003). Even this colonial discourse was not without differentations and differing voices, though (Gillan 1931; Henderson 1953: 41-98). The only extended ethnographic monograph from that time (Nadel 1947) was deeply entangled with these discourses (Faris 1973) and Nadel had to actively relate himself to them in order to be admitted (Henderson 1953: 496-500).
Nadel's verdict that most of migrations that took place were "on a very small scale" (Nadel 1947: 5) was arrived at on the basis of very limited historical information, and in a situation and at a time when new elements of 'world' were actively migrating into the social life he described. Instead, the few existing studies focusing on pre-colonial history (e.g. Husmann 1984, Spaulding 1987, Ewald 1990) describe a dynamic relation between 'inside' and 'outside'. The undisputed image of a (historically and ideally) 'pure and remote culture' can however be found in the accounts of occasional visitors publishing in popular media (e.g. Riefenstahl 1973-1976/2006, Castiglioni & Castiglioni 1977).

[3] The legacy of former slaves was topic e.g. in Kurita 2003a-b and Ahmed 2007. Studies addressing the issue of military recruitment before and during British colonial time and its consequences are Prunier 1992 and Salih 2005.

[4] This relationship was, among others, at the centre of Richard Rottenburg's concept of *Akkreszenz* (accretion) based on research among the Lemwareng (Moro) of Lebu. Results were published in Rottenburg 1988, Rottenburg 1989, Rottenburg 1990, and Rottenburg 1991; an English translation of the latter is presently under preparation.

[5] An obvious counter-example is Tagali and its varied relation to the Funj Kingdom. However, both the character and extent of this relation and Tagali's rule over parts of the Nuba Mountains are contested issues (Spaulding 1987, Ewald 1990, Ille 2011). In this regard, one of the ambiguous institutions is *sīd al-darib* (Master of the path), the namesake of which was described as negotiator of peace agreements and protection of strangers, both as extension of Funj rule (Spaulding 1984: 33) and as arrangement between communities in the Nuba Mountains (Ewald 1990: 25).

[6] The term *rīf* denotes rural areas, mostly around an administrative centre like Heiban. The formal terminology for the administrative area changed several times during the years, the most recent being *maḥaliyya*, 'locality', of which there were 19 in South Kordofan. According to the 2010 census, Heiban Locality had 211,474 inhabitants in 5 administrative units (Heiban, Kauda, Debbi, Umm Durdu, Al-Azraq); the administrative unit Heiban discussed here had 32,370 inhabitants, and comprised Heiban town and some surrounding villages (Komey & Ille 2010).

In a wider sense, Heiban describes the groups often designated as the 'five tribes', namely Heiban (Irral), Leira (Laro), Shawaya, Atoro, and Tira. The grouping was inherited from the 'Central Jebels' conglomerate of the British system, which was established as an institution by a council of the chiefs (*mağlis al-mukūk*), the main Native Administration court of the area. The council was continued after independence, in other forms existing during the *ḫumsiyya*-system under Numayri, and finally dissolved as a concept of cooperation after 1989. It was resurrected and given new consideration in recent 'native leaders' conferences (Nabudere 2005, Prah 2006). Detailed studies of these courts during British colonial time are, for instance, Salih 1982 and Ibrahim AA 1997.

[7] In the tradition of social anthropology, groups formed on the basis of territorial proximity in the Nuba Mountains are called 'hill communities' after Nadel (Nadel 1947: 24). A statement originally made about the Atoro is also true for the other groups; specifically that "repeated movements, the natural growth of one or the decline of another settlement, keep its boundaries fluid". (Nadel 1947: 88). Furthermore, close ties between Heiban and Abol were obvious, while the relation with Laro (Leira) were ambiguous: "Till the advent of the present Government, Laro and Abol maintained no contacts except those of mutual rids and fights 'at sight'. The same state of permanent hostility between Laro and Heiban seems to have given way later to a pact of friendship engineered by the 'Big Chief' of Laro, which even led to intermarriage between the two tribes." (Nadel 1947: 84).

[8] Ethnicity is one of the grand themes of Nuba Mountains studies. The process of ethnic identification in the Nuba Mountains has been discussed in a small number of intensive ethnographic monographs (e.g. Nadel 1947, Stevenson 1984, Baumann 1987, Faris 1989, Rottenburg 1991, Kramer & Marx 1993, Manger 1994, Hesse 2002). Partially overlapping, the impact of political and administrative history on ethnic relations was subject of a much broader body of literature (e.g. Ibrahim AUM 1977, Salih 1982, Ibrahim AUM 1985, Ibrahim HB n.d., 1988, 2002, Salih 1990, Saavedra 1998, Battahani 1998, Jedrej 2006, Battahani 1986, 2009, Elsayed 2005, Yūsif 2008, Komey 2009, Abdelhay 2010, Ille 2011).

A further aspect is the impact of migration (e.g. Mohamed Salih 1983, 1991, 1994, Fihail 1988, Meier 1989, 1990, Mohamed 1990, Häußer 1992) and land rights (e.g. Manger 2008, Komey 2010c) on ethnic identity. Recent years saw a greater focus on the role of ethnicity in violent conflicts (e.g. Suliman 1997, Manger 2001, 2003, 2007, Rahama & Mansour 2005, Komey 2010a-c), also around the issue of genocide (e.g. Mohamed Salih 1995, 1999, Manger 1998).

[9] This, at least, is the argument in publications like Ibrahim FN 2004, Flint & Waal 2005, Prunier 2005, Ahmed & Manger 2006, and Collins & Burr 2008.

[10] An attempt to draw the main lines of these conflicts has been made in Rottenburg et.al. 2011.

[11] The terminology 'matter of concern' has been propagated by Bruno Latour (Latour 2004, Latour 2005/2008), and much of the way in which I refer here to 'issues' I owe to this and related texts about social criticism, and to discussions about them in Richard Rottenburg's Law, Organization, Science and Technology group at the Max Planck Institute of Social Anthropology in Halle, Germany.

[12] This is an attempt to contribute to the ethnographic literature on the Nuba Mountains region. The last comprehensive attempt to produce a bibliographical overview of academic Nuba Mountains studies was made almost three decades ago (Dabitz 1985). The long lists and quotation of references also have the function of bringing together much of the relevant secondary literature to the aspects touched there.

This also offers glimpses at my academic environment through the bibliography, which consists basically of the references collected 1) in the context of the DFG-funded SFB 586 and the research projects "Contested autochthony. Land and water rights, and the relation of nomadic and sedentary people of South Kordofan / Nuba Mountains, Sudan" (2004-2008) and "Market institutions in the relation of nomadic and sedentary people in South Kordofan, Sudan" (2008-2012), both headed by Prof. Richard Rottenburg, Institute of Anthropology and Philosophy, University of Halle, and Dr. Guma Kunda Komey, Department of Geography, University of Juba (now Baḥri); 2) in frame of the research group Law, Organization, Science and Technology, headed by Prof. Richard Rottenburg, at the Max-Planck-Institute of Social Anthropology Halle, Germany.

[13] Itself resulting from a research project – and thus effectively a project about projects – the creation of this text shares the same problems of structure, and the same structures of problems, as its subject matter. However, I will not go deeper into this structural intertwining at this point.

[14] My overall fieldwork in the Sudan with a focus on the Nuba Mountains covers six periods between October 2005 and March 2010, a total of 31 months. The ethnographic data used in this thesis was produced based on fieldwork in Khartoum (November 2008 – March 2009, September & December 2009) and in the Nuba Mountains (Heiban, Abol, Kubang, Kadugli; April – May 2009, January – March 2010).

The primary data collection was undertaken mainly through narrative interviews and conversations, supported by participant observation. The interaction with state bureaucracy was assessed during visits and interviews in respective ministries and administrative offices. Furthermore, processes of data production through the use of surveys was observed through my active involvement in the creation of the inception report of an internationally funded project; data collection procedures of organizations' local offices in Heiban were followed. Furthermore, periodic market days in Heiban were visited, in connection with a case study of a major trader of agricultural goods.

The secondary data collection used publications about the Nuba Mountains with a focus on the period after 2005. The thematic focus was on studies about the agricultural and water sector, and the evolution of public and cooperative institutions. The past and present states of development projects were evaluated through reports and recent research. Documents from the Sudan Archive in Durham covered some additional historical aspects.

[15] The writing of Arabic words in this text results from a difficult, but necessary compromise: Words belonging to the sphere of oral communication have been transcribed approximately, allowing those familiar with them to recognize them; in other words, they have not been transcribed in a phonological way. Words quoted from written communication have been transliterated according to DIN 31635. This standard of the German Institute of Standardization (DIN) defined in 1982 the transliteration of the Arabic alphabet based on the rules of the German Oriental Society (DMG) and their modification by the International Orientalist Congress 1936 in Rome. It was used, for instance, in the influential dictionary of Hans Wehr (Wehr 1985).

[16] The transcription of the words from the Abol language is based on Schadeberg 1981, the only thorough linguistic analysis available. The language is closely related to the Heiban language, *ḍeebaŋ*. Since rudimentary knowledge of Abol language was acquired through oral conversation, and not by linguistic documentation, the results should be regarded as approximations.

[17] This nickname is derived from the usual female name for the third child, *kújay*. Several social groups in the Nuba Mountains have a naming system based on the chronological order of birth, similar to that used by the Didinga and others in southern Sudan (Kafi 2004: 35-37, see also Crevatin 1994). The number of names differs. Heiban and Abol, for instance, use 2 x 6 terms (boys: 1. kúku, 2. kódi / kútti, 3. kaalɔ, 4. kómi, 5. kájo, 6. kunda; girls: 1. kaaka, 2. kánni, 3. kújay, 4. káji, 5. kɔ́ŋɔ, 6. kútɔ). The position in this order is based on the number of previously born children, even if they may have died in the meantime. Once six children were born, the naming starts from number 1. A linguistic convention to speak about the number of children, especially of polygamous men, is then to say, for example, 'he has three *kúkuꞌ*, implying that he has 13 children.

[18] The term is also used for sorghum itself, while 'bread' can be specified with the rather standard Arabic word *raġīf* (unleavened bread) or formally *ḫubz* (bread).

[19] Descriptions of this meal can be found in almost any account about the region, an attempt to systematize the existing variations is Dirar 1993.

[20] Geographical names of the Sudan are transcribed according to the suggestions of the Permanent Committee on Geographical Names for British Official Use, which concern some changes of the spelling of British colonial maps (PCGN 2004).

[21] The establishment of these units is based on paragraph 4 of Chapter VI of the CPA ("Security arrangements"). A background to Joint Military Units in given in Verjee 2011.

[22] This college is the result of the initiative of a graduate of a Jordanian Christian college, who attempted to establish a place where Protestant pastors could be trained and ordained after three years. The first generation of pastors graduated in 2010. It has also been the temporary living and working place of young people of several nationalities, among them Canadians and Americans, whose internet blogs give some insight in their motivations and perceptions. One of Samaritan's Purse's most active employees, Ryan Boyette, received recently more attention due to his refusal to leave the area because of the war, a stance similar to that of the medical doctor Tom Catena of the Diocese of Elobeid hospital in Gidel (Chapman 2008).

[23] My understanding of the implications of this perspective has been formed by Gluckman's writings, especially his *Analysis of a social situation in modern Zululand* and his introduction to *Order and rebellion in tribal Africa* (Gluckman 1963). A concentrated genealogy of the debates around the extended-case methods can be found in Burawoy 1998.

[24] This term was loaned from Latour (Latour 1990), who, in a different paper, spoke about processes as a 'fifth dimension', urging studies of timing, spacing and acting (Latour 1997: 179) to approach the question why this dimension is "so difficult to register" (Latour 1997: 187).

[25] This 'social world perspective' has been developed by Strauss to "provide a means for better understanding the processes of social change" (Strauss 1978: 120). Though relating explicitly to symbolic interactionism, it can be understood as acting in parallel with other analytical metaphors attempting to circumvent certain stereotyped, predefined structures towards more conceptual flexibility concerning what specific frame for social action one talks about, for instance, social spaces/fields (e.g. Bourdieu 1985).

[26] The 'version' that has influenced me here is Clarke's *Situational analysis* (Clarke 2005), although less in its concrete methodological tools than in its 'cartographic mentality', and its convictions 1) that any analysis is "no more than one or a few 'readings' of a situation" (Clarke 2005: xxxvii), and 2) that "the era of grand or formal

theory is long over“ (Clarke 2005: 293), which makes social theory much more about supporting sensitivity to the presence or possibility of alternative perspectives and overlooked situations.

[27] Maranhão & Streck 2003 is a reflection from my immediate academic environment about how the term ‘translation‘ can be made fruitful for ethnography.

[28] In a recent publication on this debate, its editors identify a consensus to look for “ways that exhibit their reflexivity less in terms of textual strategies of self-reference and more in terms of a heightened awareness of the inidividual condition and conditionalities of the author” (Zenker & Kumoll 2010: 29).

[29] This viewpoint was expressed clearly by Christophe Heintz: “Ethnographies are not written in the field. They are written in an academic setting – back at the ethnographers’ home university, where they reflect on their fieldwork experience. They reflect by entering into a critical dialogue with both the literature in anthropology and with their colleagues. This dialogue is so intrinsic to the writing process that it is possible to say that the cognitive processes of writing ethnographies are always distributed among anthropologists.“ (Heintz 2010: 152-153). What has now become a truism, namely that ‘the field’ and ‘the researcher’ are not clearly divided, is also obvious in my case, in which my closest academic colleague is also my main partner in dialogue from ‘the field’.

[30] Other definitions of the term are quite established in the social sciences, too. Among others, Ferguson used the term ‘topography’ to mean the “mapping of political and social space” (Ferguson 2006: 90).

[31] ‘Thickening’ of descriptions has been most widely propagated through the writings of Clifford Geertz (Geertz 1973), who adopted this terminology from Gilbert Ryle to denote the danger of misinterpretation that can arise due to looking at phenomena isolated from their context. The particular example used was that of the fast movement of an eyelid, which could be either unintended twitching or intended communication, depending on the context.

[32] Scott’s top-bottom dichotomy has been thoroughly criticized; I follow Murray Tania Li’s opinion that “we need to go beyond the question posed by Scott – why have certain schemes designed to improve the human condition failed? – to examine the question posed by Ferguson: What do these schemes do? What are their messy, contradictory, multilayered, and conjunctural effects?” (Li 2005: 384).

[33] The issue of ‘indigenous knowledge’ in development discourses is another aspect only briefly touched on here. While this kind of knowledge is something of a mainstay of anthropological work, the co-reading, and possibly mediation, of seemingly diametrically opposed forms of knowledge meeting in the development sites has received increasing attention during the last two decades (Sillitoe 2007). These attempts may be seen as soothing voices among the anti-development sentiments rising during the 1990s (Escobar 1995), or as a way to come to terms with their own work in this arena (Robins 2004).

[34] The correlation of time and space as timespace has gained more currency in the social sciences since 2001, when May and Thrift criticized the spatial tendency, among others, toward a conceptual division between the two (May & Thrift 2001; see also Schatzki 2010). The chosen order ‘time-space’ has no hierarchical meaning, but simply avoids the terminology of space-time, a term describing a four-dimensional coordinate system used in the special theory of relativity.

[35] This usage is the extension of a concept of strategic essentialism that counters post-colonial critique, such as Spivak 1988, with a differentiated look at the bases of essentialisms (Werbner 1997). Katharina Schramm summarized that this differentiation “asks *why* people employ essentialisms and to what purposes” (Schramm 2008: 218).

[36] This has been called metacode by Rottenburg (Rottenburg 2005) as part of a code-switch, which, to him, "seems a more reasonable alternative" than an "absolute differentiation between reality and fiction" (Rottenburg 2005: 274), or, by extension, the 'absolute relativity' of reality.

[37] I distinguish "the future", as a general idea *that* something will come after what is currently occurring from "the 'future'" as a specific idea or projection of *what* will come after what is currently happening.

[38] Another straightforward formulation of the problem is: "To say that valid predictions are those based on past regularities, without being able to say *which* regularities, is […] quite pointless. Regularities are where you find them, and you can find them anywhere" (Goodman 1954/1983: 82).

[39] Foucault noted in his *Archaeology of knowledge* the theme of (inevitable) continuity embedded in the terms 'development' and 'evolution' as one of the restrictive conventions of thought to be abandoned: "They make it possible to group a succession of dispersed events, to link them to one and the same organising principle" (Foucault 1972/2002: 24).

[40] As indicated by the formulation, the following text connects to the debates influenced by Merton's 1936 article 'The Unanticipated Consequences of Purposive Social Action'. Among others, it tries to build on the statement "that no blanket statement categorically affirming or denying the practical feasibility of all social planning is warranted" (Merton 1936: 904).

[41] One indication is the broad production of development management guides, which are often dominated by objective-oriented project planning, for instance, through GTZ's influential ZOPP model (GTZ 1997).

[42] The military character of many project management terms may not be entirely coincidental, as this short 'heroic' narrative of its progressive history in an influential handbook suggests: "Projects have been with us since the coming of man […], certainly since the beginnings of organized hunting and farming. Mankind's earliest buildings, military campaigns, and religious festivals attest to our ability to conceive goals, develop plans for achieving them, and deliver the desired outcome successfully. In the past we did this almost instinctively […] without necessarily articulating or consciously reflecting on our way of doing so. Slowly, however, […] tools emerged […], project organization structures became formalized […], and ultimately, in the early to mid 1950s, a fully blown discipline – project management – was articulated and mandated by the US Air Force to integrate the engineering and production of its technically complex, urgent missile development programs." (Morris et. al. 2011: 1).

[43] Todaro & Smith wrote, for instance, that "[a]s a result of the disenchantment with planning and the perceived failure of government intervention, many economists, some finance ministers in developing countries, and the heads of the major international development organizations advocated the increased use of the market mechanism as a key instrument for promoting greater efficiency and more rapid economic growth" (Todaro & Smith 2003: 696).

[44] Picked from the flood of business strategy publications, one published by Financial Times Prentice Hall claims that "[a]ll organisations, but especially large organisations, are faced with the challenge of deciding how to support a strategy with appropriate resources […]. Planning systems plan and control the allocation of resources and monitor their utilisation." (Johnson et. al. 2012: 238).

[45] Scott – speaking in general about institutional theory – later distinguished three pillars of institutions: regulative, normative, and cognitive. An approach that places emphasis on the first, nearest to a concept of top-down control, is likely to be connected with "a *social realist* ontology and a rational choice logic of action" (Scott 1995: 49), while the latter two are closer to social constructivism and new institutionalism.

[46] My understanding of this problem's relevance for the development field was informed by Rottenburg 2009, whose principal-agent concept refers to Pratt & Zeckhauser 1985/1991.

[47] This is part of a discourse in the self-perceived discipline of spatial planning theory, which refers to a wide range of philosophical works, especially Lacan, Derrida, and Foucault. The argumentation of authors such as Gunder stresses the processuality of planning and its structural inequalities (Gunder & Mouat 2002), the constitution of 'the Other' and the desire for harmonious fantasies, which they see at the bottom of planning's power (Gunder 2003).

[48] In addition to the established questionnaires and interviews, present methodologies also include guided dialogue techniques, which are often brought in under the label 'participatory', as in the case of Participatory Rapid Appraisals (PRA). An example of a South Kordofan study using PRA is Adam 2009.

[49] Ferguson used this phrasing: "Instead of ignoring the orderly field of statements produced by the "development" apparatus on the grounds that the statements are ideological, the study below takes this field as its point of departure for an exploration of the way in which "development" initiatives are produced and put into practice" (Ferguson 1990/2002: 400).

[50] The work of Axelrod (1984), however one values its basic assumptions, is useful in pointing out the impact of temporal dimensions on social behavior: "[I]f the other player is not likely to be seen again, defecting right away is better than being nice." (Axelrod 1984: 115). He gives the example of nomadic groups not paying for services they can get somewhere else the next time, but paying for services they will need every time. In general, 'the end is near' is strong enough as a framing perspective to fill long histories of eschatological behavior.

[51] It is not my intention to discuss donor policy here, which would be necessary in order to develop a critique of the field. It should be noted, too, that there is an awareness of development projects' limitations, which led to differentiation of objectives, for which projects are the appropriate organizational form.

[52] 'The practitioner' is a recurring figure in management studies, but the specific discourse around the so-called 'practice turn' in social science has been adopted recently to speak of projects-as-practice (Hällgren & Söderholm 2010).

[53] Bourdieu outlined in his *Esquisse d'une théorie de la pratique* a both scientific and self-reflexive "mode de connaissance praxéologique", which not only looks at "le système des relations objectives que construit le mode de connaissance objectiviste, mais les relations *dialectiques* entre ces structures objectives et les *dispositions* structurées dans lesquelles elles s'actualisent et qui tendent à les reproduire, c'est-à-dire le double processus d'intériorisation de l'extériorité de d'extériorisation de l'intériorité" (Bourdieu 1972/2000: 235).

[54] Sense, a recurrent concept throughout my argument, is understood here as the implicit and explicit answers given to the question of how to act. Questions, another recurring term, direct and avert attention, and thereby implicate a normative distinction between what is significant and what is not. In this sense, any directed question within the framework of intersubjective communication is also formed by the complex conditions of this communication.

[55] The 'being thrown' in projects could be related to an etymological core of the word, whose elements are *pro* (forward) and *iacĕre* (to throw, past participle *iactum*) and combine to *prōicere* (to stretch or throw forward).

[56] In a link with chaos theory, which Weick himself makes, this can be seen as following the question how "groups of agents manage to transcend themselves and become something new" (Waldrop 1992: 289). Without falling into "fashionable nonsense" here (Sokal & Bricmont 1998), this invokes the complexity and significance of the seemingly small, which inspired Weick to write: "A surprising variety of organizational phenomena are visible in and perpetuated by surprisingly small units of analysis." (Weick 1969/1979: 236).

[57] This touches on the problem of innovation, which may be discovered in any debate on social change. One branch of organization studies has addressed the tension between institutional reproduction and change to something new through the concepts translation, travelling, and fashion (Czarniawska & Sevón 1996, Czarniawska & Sevón 2005).

[58] This refers especially to the issue of accountability regimes, whose implications for development aid were understood through Rottenburg 2000, but cannot be elaborated here.

[59] For example, the abilities and attitudes of urban elites towards organizational work accord better with the expectations of development agents in the rural area than those targeted by development projects. Robert Chambers, among others, has criticized the resulting 'urban trap' since the 1980s, which includes the urban-grown objectives for a lifeworld of which its propagators are only temporarily a part, and do not themselves aspire to: The field of rural development is populated by actors who are neither acquainted with rural life nor consider the rural environment a possible primary living space for themselves. At the same time, they try to convince their 'beneficiaries' to live in such an environment, although in a 'developed' way, where 'development' is perceived and understood in the context of the actual primary living space of the propagators of development, the urban agglomeration. This is only one small aspect of the criticism of so-called outsiders' attempted domination of lives they do not intend to share permanently. Chambers states that "[t]here is no complete escape from the way outsiders project their ideologies and values into analysis and prescription, but at least we have identified two antidotes: first, repeatedly to enquire and reflect upon what poor people themselves want; and second, to return again and again to examples of the unacceptable, and to analyse these rather than theoretical abstraction." (Chambers 1983: 146).

[60] As such, development projects are different from relief and emergency interventions, since they intend to create new normalities, whereas humanitarian aid is intended to establish temporary distribution patterns. However, the harshest criticisms of development aid question exactly this intention and aid's consequences, whether within the framework of critical theories of global capitalism (e.g. Amin 1973/1976) or from the point of view of an entrepreneurial background (Moyo 2009). Mohamed 1988 studied the influence of aid on small-scale agricultural production in South Kordofan.

[61] The flexible character of this infrastructure has been addressed by the concept of *loose coupling* (Weick 1976, 1969/1979), which is also used in Rottenburg 2009, but is peripheral to the argument extended here.

[62] A number of coping strategies during the war have been described in Corbett 2011.

[63] Conversation with Yussif Tiya, Mubārak Faḍul, Idris Kuku Mān, May 3rd, 2009, Abol.

[64] USAID sponsored a number of these freeplay™ radios, which work with a dynamo generator. They were distributed as part of a community radio service project based in Kauda, which was organized by NRRDO and supported by studio expertise from Mercy Corps.

[65] The issue of labour extracted by physical violence is one of the continual topics of the region, especially under the heading of 'slavery'. Writings on this topic cover the 19th century (e.g. Rüppell 1829, Pallme 1843, Petherick 1861, Prunier 1992, Collins 1992) until present civil wars (e.g. UNCHR 1994, Omaar & Waal 1995).

[66] The following data are based on a tour on January 30th, 2010 to all plots, whose corner points were measured with the support of a GPS device. The discussions about measurements and labour organization took place throughout the stay in Heiban (mid to end of January), as his household was next to that of my hosts.

[67] Colvin recorded the same measure for *ḥabl*, but at his time a pace was 1.2 to 1.6 metres (Colvin 1939: 39).

[68] Several statistics for field sizes have been reported, e.g. Kersany Mohamed 1981, Ahmed 1983, Battahani 1983.

[69] Other instances for the distance between fields and homes are documented in Mohammed 1986. Nadel 1947 classified farms based on their distance from the homes (house farms, hillside farms, far farms); most subsequent studies (from Iten 1979 to Pantuliano 2005b) support this classification, with slight variations.

[70] Like all specialists, subsistence farmers here distinguish numerous varieties of their staple crops concerning colour, growth period, taste, hardness, even yield for flour and quality for beer-making, among others. Thorough documentation of this knowledge has been limited, exceptions are, for instance, Colvin 1939, March 1954, Bedigan 1983, and the aforementioned ethnographic monographs.

[71] The question of land property and land use was also one of the most difficult issues in South Kordofan, even more after the war than during it. Many conflicts are born out of unresolved disputes about land rights, where many different legal systems overlap: Processes of individual land registration may contradict existing understandings of customary rights; tribal boundaries, which were subject to flexible intergroup negotiations in the past, were now to be fixed through the work of land commissions. Since land rights became one of the central issues of the region, there have been extensive publications about this topic (Manger 2008, Komey 2008a-c, Komey 2010a-d, Alden Wily 2010, Large & El-Basha 2010). The most comprehensive work is Komey 2010a.

[72] As in any mountainous area, the soil structure in the Nuba Mountains is very complex, most economic studies have a section on soil types. Several natural science studies have been published specifying soil types and soil characteristics, too (Colvin 1939, HTS 1981a, Nawari & Schetelig 1991, Olsson & Rapp 1991, Nawari & Schetelig 1992, Poussart et. al. 2004, Elgubshawi 2008, Mubarak et. al. 2012). In his agricultural survey of 1939, R. C. Colvin distinguished six types of soil in the Nuba Mountains: I. Heavy clays (alluvial, cotton soil, noted as restricted to the north, but most probably like *ḥadab, ṭīn,* or *azraq* in Khūr Kauda/Khūr Jāmūs); II. Light clays (plains and high land, near *nīliyya*); III. Sandy loams; IV. Goz soils (mixture of sand and more or less clay, like *ramliyya* and *qūz*); V. Gardud (stony land with some clay, near *ḥaǧir*); VI. Waterlogged soil (useless, sour). He mentions also 'Jebel soil' used for terrace cultivation. (Colvin 1939: 1-3).

[73] M. F. Rose claimed in 1950 that Nuba farmers have no clear cultivation system (Rose 1950), while most of the aforementioned intensive economic studies documented differentiated systems of crop organization and partially crop rotation.

[74] This qualification of workers contains also an ethnic element: While Fur and Zaghawa are considered more for specialized labour, like burning strong bricks or gardening, Atoro and Shawaya are available for any work, such as building fences, clearing fields, working at stoves for bread etc. However, the analysis of the role of ethnic markers in the regional labour market is underrepresented and has often concentrated on the negative, rather than positive, aspects of discrimination.

[75] The difference is primarily not about nutrition. *kisra* is made from sorghum flour, bread often with a percentage of wheat flour, the latter is therefore more expensive and basically a market commodity, while the former is, together with the sorghum porridge, *ᶜasīda,* the main element of daily food consumption. Apart from being the dearer commodity, bread stands also for an urbanized and thereby modernized consumption.

[76] The most quoted study about *nafīr* in Sudan is Frederik Barth's text "Economic spheres in Darfur" (Barth 1967). He defined cooperation in these work-and-beer-parties as communal, reciprocal investment in time, work force and food in peak periods of agricultural labour. In a broader sense, *nafīr* covers all forms of communal labour. Apart from general economic studies, Manger et. al. 1987 has a focus on communal labour in the Sudan.

[77] The result is not only a lower availability of labour force. The invited helpers expect several meals each day, which include amounts of sorghum, okra, and meat. In cases in which not enough labourers come to eat all

the prepared food, this 'investment' is lost. However, the availability of socially recruitable labour is not just an economic variable, but speaks also for the kind of social environment labour exists in.

78 'Beer' has to be differentiated here. The most-consumed sorghum beer (*marīsa*) is rather alcoholic, but the fermentation process leads also to several other, less alcoholic products. The ratio of sorghum : beer depends on the variety and how 'heavy' (*taqīl*) it is; for instance, red sorghum is 'heavier' than white sorghum. The observed ratios range from 4.82 kg / 17 l to 4.82 kg / 32 l. A frequent observation nowadays is the mixture of *marīsa* with date spirits (*ᶜarakī*), which increases the alcoholic content but decreases the nutritional value.

79 Underground cooling, for instance in clay jars, was not observed, nor was the storing of fruits etc. under clay jars with water (*zīr*) or in the hollows of baobab trees.

80 Fruit trees and other non-timber forest products were documented in Bridel 2003 and Tahir & Gebauer 2004; another botanical study about trees in Rashad District is Mohammed & Salih 2007.

81 In several interviews inhabitants of villages around Heiban stressed the abundance of vegetables and fruits even in the dry season some decades ago. In their view, this situation has now changed completely to one of dependence on a market that in the main does not fit either the demand or the ability to pay, either in Heiban or the surrounding villages.

82 Barth 1967 identified orchards and marketing as main sources of innovation and growth in Darfur; Abdul-Jalil & Rabih 1986 offer a positive case study, while cautioning against the adverse effects that commercialization has often had on subsistence economies. In comparison, the horticultural sector is very much under-represented in Nuba Mountains research; a current project of the University of Kassel produces studies about house orchards (*ǧubrāka*) from a biodiversity point of view ("Effects of transformation processes in 'jubraka' agroforestry systems of the Nuba Mountains, Sudan, on plant diversity and nutrient fluxes", www.agrar.uni-kassel.de/opats/?c=199, retrieved 25-06-2012; Goenster et. al. 2011, Goenster et. al. 2012).

83 The lack of documentation makes it difficult to give more historical depth to this process. A recent study about Abu Jibayha quotes horticultural producers, who started irrigated schemes as early as 1966 (Bello Tendel 2012: 71-72).

84 The data for this example is based on a visit to the orchard on February 1st, 2010 and accompanying conversations with the horticulturalist and occasional visitors during that day.

85 While the construction and arrangement of houses and other small buildings has been covered in nearly every ethnography about the region (also Hodder 1982, Titherington 1931), the emerging role of brick-burning has seldom been addressed, although it represents a significant part of economy, social life (house construction) and time-management, the last increasingly also in a commercial sense. In a wider context, the introduction of new materials in construction, such as industrially produced bricks and cement, is an essential part of what is negotiated under the heading of 'modernization'.

86 This struggle of 'nature' vs. 'culture' is certainly one of the most persistent themes of human ecology. This dichotomy has been increasingly criticized during the last decades, however, for instance in the framework of political ecology (e.g. Biersack 2006, favouring 'first' and 'second' nature).

87 The insecticides and pesticides used (*mubīdāt*) include WS-16 / Pulmik (Chema), Farmata, and HDPE (equate, polyethylene). They are also frequently referred to using Arabic or Arabicized terms, like *malaseeya* (liquid, for termites), *seeram* (powder for ants), and *sweed* (powder).

88 This assessment of the market situation cannot easily be verified or falsified. Recent research in the market of Abu Jibayha suggests that Heiban and other markets in the region are at best peripheral to the distribution networks of horticultural producers in that area (Bello Tendel 2012). More general studies of trade in the

region are Manger 1984, Manger 1988, Sultan 1993, Hesse 2002, Mohamed & Siddig 2008, Mohamed et. al. 2008, Elamin et. al. 2009

89 The information provided here comes from a long visit of the orchard on February 4th, 2010, and several shorter visits and conversations around that date. The background of the brick-works was basically acquired in the course of four interviews with the owner, May 1st & 2nd, 2009, and February 1st & 6th, 2010, with the addition of other, shorter conversations. The owner of the land plot was interviewed on February 1st, 2010, too, when most of the details of costs and maintenance were found out.

90 His father had worked in the 1950s and 1960s as a dock worker in Port Sudan, then as assistant in the shop of an Indian trader, which is the basis of his business knowledge. The eldest son, the owner of the brickworks, was born in 1967 after the father's return. In 1988, the family went to Dongola and returned only after the war.

91 The diesel engines (*muwallid*) used in the region are mostly of Chinese origin. The one used here is a Jianyang, Jyde ZH1105WB2, 18 HP / 2200 rpm. The centrifugal pump (*ṭurumba*) is an Indian Rajkot-360 001 (Saraf) with belt drive, 1440 rpm.

92 The individual costs, referring to the situation in 2006, were 2600 SDG for the Jianyang engine with generator, 1000 SDG for the Rajkot pump, 1250 SDG for the pipes, (all bought in Khartoum), and 2000 SDG for installation of the engine and digging. The installation involves the construction of a socket (*kursī*) to prevent the engine from 'hopping', then a hole is dug down to the first layer of underground water (in Heiban about 3 m) which is tested for 3 hours; in the case that water pressure ceases during this time, the bore hole is deepened to the next layer.

93 This perception of profit is, however, not the result of book-keeping with income and expenditure documentation, but an assessment of available cash at the end of the season in July. The book-keeping practices of traders and others in the region is a field of enquiry into which apparently no research has been conducted.

94 This form of production differs in scope, though not in its most basic elements, from the small-scale working processes of most subsistence farmers in the area. In the latter case, too, soil is moistened, with or without other elements like grass, manure, or sand, then the soil is packed into wooden forms, which are also standardized, but much larger than those used for large-scale production. After removal of the form, the bricks are left to dry in the sun, which takes up to two days. In this way, about 100 bricks per hour are produced, which are – according to the possibilities available to the producer – also burned later on. Water is a limiting factor here, too. Not only do many young men build their own first houses this way, but brick production is also an important source of income between harvest and first clearing (January to March). The extension of this production, however, also starts to affect the availability of soils and cuts deep trenches into the landscape; in towns like Kadugli the movement of vehicles is severely hampered by these trenches in some quarters.

95 Regular requirements for the maintenance of the engine are distilled water (*mōya muqaṭṭara*), oil (*zayt*), and diesel (*ǧāz*). The price for a gallon of motor oil was 46 SDG, which sufficed for about 15-20 days of heavy use; a barrel of 44 gallons diesel cost 308 SDG at the same time, plus 20 SDG transport on a lorry already travelling in a suitable direction.

96 The price was 650 SDG per lorry from Khor Delēb at that time; this covered about half of the material required for a 20,000 piece tower.

97 A lively social atmosphere developed around the brickworks: Most of the workers are Atoro, who formed a regular group of beer-drinkers, sometimes together with girls and women. In a little hut (*rakūba*), a woman would sell tea all day, and nomadic pastoralist Fellata from a nearby camp also came by to flirt, buy vegetables, cut wood, and sell milk. Cattle guzzled from the puddles of water from which the clay is kept wet.

The workers involved in this production were organized by the owner into so-called teams (*atyām*), which received a shared payment per 1000 produced pieces. These teams comprised brick-formers, wood-collectors, pilers, tower-deconstructers, loaders, and burners; altogether about 40 workers. The price for 1000 pieces was 30 SDG at that time, compared with 28 SDG the year before; the process of negotiation of this price depended on previous mutual acquaintance, but also on the prices charged at similar workplaces. Because there are often larger orders with a time schedule, the owner ensures his workers' wages are both high and on time, to avoid any form of rebellion which would cause delay.

[98] At that time, other traders considered his local monopoly already to be seriously challenged. Another dominant trader in Heiban saw that his price of 120 SDG / 1000 pieces plus transport was way over the 45 SDG / 1000 pieces plus 117.50 SDG / 20,000 pieces transport costs from Abu Jibayha. In addition, no less than 11 competitors in Heiban had begun trading between 2006 and 2010, some of whom produced for only 90 SDG / 1000 pieces. However, this trader's longstanding reputation paid off: A larger order of 130,000 bricks was secured in 2010 from the Theological College in Heiban.

[99] The first production of tomatoes was started, and up to the end of January 2010 overall takings were 1,180 SDG. Although the tomatoes were sold in Heiban's market, about 22-25 SDG per box, they were also given as 'outlet' directly at the orchard.

[100] This part is based on two visits on January 30th and on February 4th, 2010, the latter with the designer of the orchard, who also provided the background information.

[101] The marketing of fruits was already a topic of research in the early 1980s, when the USAID financed Western Sudan Agricultural Research Programme had a research station in Kadugli. More general market analyses are Speece & Gillard-Byers 1986, Speece 1989, and Speece 1990.

[102] The use of natural resources, both land and stones, was permitted without further payments. The background is an investment strategy that tries to keep the project in the area by lowering the initial costs for the investor. Indeed, Samaritan's Purse had intended to build the orchard as an extension of its nursery in Kauda, but failed to get permission from the Native Administration of the Atoro, who are regarded as relevant communal owners there. As a result, the project was shifted to Heiban, where only the intervention from urban migrants led to permission being granted by Heiban's Native Administration. (I thank my colleague Dr. Guma Kunda Komey for pointing out this additional aspect.)

[103] Another claim was recognized and compensated by 130 SDG.

[104] The information supplied in this part is based on regular contact with the trader between January 18th and February 6th, 2010. A visit of his fields took place on February 5th, 2010.

[105] In February 2010, this production was at about 670 loaves per day, divided into 250 for the restaurant, 330 for separated sell in the market, 8 for consumption at home, each 4 for the three workers at the stove, and additional 70 for flexible distribution.

[106] These skills include the ability to 'map' commodities concerning their physical place and their price. Inside the shop, these coordinates had to be known fast, when many customers come at the same time and a routine of response is needed. This response includes also places beyond immediate reach, such as the storeroom or even other shops. As the distance grows larger, the effort of locating and transporting increases, and thus influences the price. For example, contact persons in stations of outside traders, like Khor Delēb and Abu Jibayha, provide information by mobile phone about prices there, which can then be matched against the customer price without the additional costs for transport. Prices in Heiban's market are more or less the same at one time, but can be highly variable over the season; the price for cardamom increased between 2009 and 2010 for instance from 75 SDG to 300 SDG per box. However, price competition, especially for staple crops is

rare, therefore the profit margin inside Heiban is limited. The commercial producers therefore look toward exportable cash crops like sunflowers, sesame, and okra to increase their margins.

[107] Apart from that, the shop demanded work efforts such as documentation and protection of the goods (30,000-40,000 SDG value), which he tried to reduce.

[108] In 2009, land in Heiban was sold for as little as 400 SDG / fd; free pieces could also be given away to 'outsiders' for investment purposes, although the notion 'free' may be contested. According to an expert on land issues in the region, Guma Kunda Komey, formal registration through land survey, planning, certificate etc. could take more than 10 years at that time; only then would the national legal framework become relevant. (Guma Kunda Komey in Heiban, April 22nd, 2009) The only effective tax system working in Heiban at that time was market taxation. 105 SDG were required for the opening of a shop, rather less for a restaurant, and incoming traders paid a fee per sack, for instance 15 SDG / sack of sorghum, accordingly 300-450 SDG for a lorry loaded with sorghum. The restart of war delayed this process further and redrew the lines of property and production yet again.

[109] Komey 2010a: 162-169, gives a detailed account of this contestation between the ᶜAyatqa pastoralists and the Leira farmers, but the contest is also between Heiban's Native Administration and that of Al-Azraq.

[110] The administration of land in Sudan organized all available land into planned (*muḫaṭṭaṭ*) and unplanned (*ḫāriğ al-taḫṭīṭ*) areas. In order to register land in planned areas, fees and taxes per square metre must be paid, which makes formal recognition of land property an expensive task.

[111] Massey Ferguson tractors were the most distributed models until short time ago. All are small models, production of which ceased in the 1980s (MF 275 from 1975-1983, 290, 440, 512). A recent programme of tractor distribution with the New Holland agent Central Trading Co. increased the presence of the New Holland TT75 model. Occasionally, a Ford 295 could be seen in Heiban, as well as a GIAD model from a joint venture with Massey Ferguson.

[112] This differentiation has been discussed, for instance, by Manger 1981, Baumann 1982, Ibrahim HB 1988, Ḥayr 1993-1994 and, more recently, by Abdelgabar 1997.

[113] He used a medical metaphor to describe the situation: Like diseases, engines also need different levels of specialization, and in Heiban they have some 'general practitioners', and a few 'dentists', but no 'brain surgeons'.

[114] It is not the intention of this thesis to discuss the wide field of agricultural production and its modernization. One point may be noted here, though: There is no doubt that 'modernization of agriculture' is a dominant feature of development discourses, much more so since 2007 (Larsen et. al. 2009). But the question of mechanization, and thereby of modernization, is addressed within an ambiguous field of negotiation: FAO, for instance, produced, on the one hand, reports stressing the necessity of mechanization in Sub-Saharan Africa to increase productivity to a level matching the increasing population and urbanization (FAO & UNIDO 2008). At the same time, conservation agriculture, basically connecting to concepts of no-till farming, intensification and soil health, is vigorously promoted by the same organization (FAO 2008, Thiombiano & Meshack 2009, FAO 2011).

[115] http://www.foodsec.org/docs/concepts_guide.pdf, retrieved 31-03-2011.

[116] The period 2002-2004 is representing 100%. The Food Price Index consists of 5 commodity group prices, only 'Cereals' and 'Sugar' are shown here. The group 'Cereals' encompasses indices of the International Grain Council for wheat and maize, and a Rice Price index. 'Sugar' has been taken from the International Sugar Agreement prices. Although the production of data is surely an issue to be considered carefully, the general

trend of rising prices is an obvious phenomenon unaffected by inevitable short-comings of representational data.

[117] This report was the result of a collaborative Crop and Food Security Assessment Mission of FAO and the Government of Sudan, compromising the members of the FAO – Sudan Institutional Capacity Programme : Food Security Information for Action (FAO/SIFSIA), the Food Security Technical Secretariat (FSTS) of the Ministry of Agriculture (MoA), the Ministry of Animal Resources and Fisheries (MoARF), the Humanitarian Aid Commission (HAC), the Strategic Reserve Corporation (SRCO), the Central Bureau of Statistics (CBS), FEWS NET, WFP and observers from USAID.

[118] The exact formulation is: “Farmers in the traditional subsector appear to pay much more attention to good farming practices than the investors in the mechanized subsector with a wider use of crop rotation, more frequent and timely sowing weeding, and higher sowing rates.“ (Robinson 2011: 13).

[119] The so-called strategic maps of South Kordofan, the most comprehensive attempt to aggregate data about the state, work with 4 types of agriculture: traditional smallholder rainfed farming, mechanized rainfed farming, smallholder mechanized farming, and irrigated farming. The third is said to have been exclusively connected to the Nuba Mountains Agricultural Corporation (1967-1994) as part of their modernization system (HSC 2008b: 7-8). Irrigated farming was said to be used only in horticultural production schemes. Accordingly, the areas of agricultural production are divided on the map and in the underlying data into mechanized and traditional farms (HSC 2008b: 10).

[120] This ‘individualization’ of access is based on WFP’s so-called Vulnerability Analysis and Mapping (VAM).

[121] The types go from preliminary Secondary Data Analyses (SDA) to broader Comprehensive Food Security and Vulnerability Analysis (CFSVA) and Crop and Food Security Assessment Mission (CFSAM). The functional and temporal difference can be seen between the rather situational Emergency Food Security Assessment (EFSA) and the continuous Food Security Monitoring System (FSMS). The involvement of different organizations is given in Joint Assessment Missions (JAM) and other so-called Multi-Agency Assessments (<http://www.wfp.org/food-security/assessments.htm>, retrieved 22-5-2012).

[122] A complementary tool is the National Response Capacity Matrix, which builds on the assumption that “[t]he primary responsibility for reacting to crises rests with national governments” (WFP 2009a: 2). Intervention should thus be complementary to national capacities and at the same time enhance such capacities.

[123] This assessment was conducted in connection with, though not exclusively for, the Crop and Food Security Assessment Mission quoted previously. The WFP team was supported by the Humanitarian Aid Commission, the State Ministry of Health and the Ministry of Agriculture.

[124] At the beginning of 2009, this problem was regarded as so imminent in South Kordofan by the government’s Humanitarian Aid Commission, the Sudan Relief and Rehabilitation Commission, and South Kordofan’s Food Security and Livelihood Coordination forum that WFP Sudan was asked to lead an assessment of the situation. The perception of the problem was triggered by “widespread crop failure due to insufficient rains during the 2008/2009 agricultural season and the continued influx of returnees to South Kordofan” (WFP 2009c: 2).

[125] This forecast resulted from a so-called shock and opportunity analysis (WFP 2009b: 170-174), which in this case took the form of a one-day workshop in Kadugli with “all stakeholders” (WFP 2010: 15), the identities of whom remain unspecified, however.

[126] A similar assumption underlies USAID’s Famine Early Warning System Network, with monthly Food Security Alerts, and FAO’s Global Information and Early Warning System (GIEWS). An attempt was made to introduce

the latter to Sudan's administrative system via FAO's Food Security for Action programme (SIFSIA), funded by the European Commission from 2005.

[127] Most critical political analyses agree with this general picture, e.g. Komey 2009, Elnur 2009.

[128] A World Bank Public Expenditure Review in 2007 noted, among other things, that more of 60 & of GoNU investments had been for the five largest national projects, especially the Merowe Dam, with limited "evidence of project cost/benefit analysis" (World Bank 2007: vi).

[129] In an undisclosed UNICONS report on the government's budget, 75% were found to be for military and public service expenses (www.sudantribune.com/Sudan-s-finance-minister-defends,37518, retrieved 16-04-2011).

[130] Reports specifying this development are Cotula et. al. 2009 and World Bank 2010. The former report points out that the present spatial reconfiguration through large-scale land deals displays an apparent absence of detailed written arrangements in contracts considering the legal and economic complexity of those deals (Cotula et. al. 2009: 102). It also notes that "the borderline between public and private investors is fluid" (Cotula et. al. 2009: 66).

[131] This step was initiated by the Al Gezira Scheme Act of 2005. A report by the Sudan Human Rights Organization Cairo indicates, however, that the new wave of privatization was nothing more than a change of government assets into ruling NCP members' private hands supported by governmental violence (<https://shro-cairoupdated.org/uploads/SHRO_on_Attacks_on_Gezira.doc>, retrieved 16-04-2011). The continuity of this practice is documented, for instance, in Suliman 2007. The Sudan Tribune article "Egypt's takeover of Sudan's Gezira scheme" by ᶜAli ᶜAbd Allah ᶜAli points both at the public discussion in late 2010 following a Sudanese Egyptian Protocol of Cooperation, which included the idea of an public-private input-export fixation for 1 million acres of the scheme, but was never signed. It shows, too, the nation-state as both a category and target of economic analysis, which reflects the impossibity or the unwillingness to address prevailing power structures in Sudan, and therefore make propositions such as this at least possible (<http://www.sudantribune.com/Egypt-s-takeover-of-Sudan-s-Gezira,37336>, retrieved 16-04-2011).

[132] This can be observed in numerous articles for example on Sudan Tribune, Sudan Vision Daily, and the official Sudan Media Center. The policy was announced in October 2010 (<http://www.sudantribune.com/Sudan-to-begin-mass-privatization,36707>, retrieved 16-04-2011) and specified for companies in March 2011 (<http://smc.sd/eng/news-details.html?rsnpid=32164>, retrieved 16-04-2011). Processes of privatization had already started in the 1990s, but largely failed to materialize (Bicciato & Faggi 1995), and both efficiency (Osman 2009) and distributional effects have been questioned (Dagdeviren 2006).

[133] Ḫiṭāb al-sayyid wazīr al-māliyya wa al-'iqtiṣād al-waṭanī bi-ša'n al-siyāsāt wa al-'iğrā'āt al-ḫāṣa bi-taršīd al-'infāq al-ḥakūmī wa ziyāda al-mawārid (http://smc.sd/news-details.html?rsnpid=19406, retrieved 31-03-2011).

[134] The main report also relates the new policies to Sudan's attempt to join WTO (and, in the process, to become sufficiently competitive to achieve this) (Council of Ministers 2008: 7), and to "the strategic option of achieving sustainable agricultural development" (Council of Ministers 2008: 8). Accordingly, the main references for the programme are the Strategic Five-Year Plan (2007-2011) and the so-called declaration of "Green Mobilization" (2006). The legal ground of the programme is the Council of Minister's Resolution No. 173 (2007), initiating a High Committee for the Study of the Current Situation in the Agricultural Sector and the Proposal of Appropriate Visions for its Future Development.

[135] This document was issued by the Council of Ministers, Republic of Sudan, in April 2008; the English version can be accessed on http://www.cmi.no/sudan/?id=52&Natural-Resources (retrieved 16-04-2011). It was not the first attempt to instigate such a programme; another National Agricultural Revival Programme had already been launched in 2005.

[136] This also includes subtle references to UN standards and documents, such as the objective 'reduction of poverty to 50% by 2015', which cites MDG 1.

[137] The Strategic Map for South Kordofan (HSC 2008b) makes basically the same point: Under the title "Agriculture Reviving Program", issues such as infrastructure, capacity building, backstopping services, conservation of natural resources, productivity improvement, agricultural rural small-scale industry and modernization are mentioned (HSC 2008b: 23-25). Nothing relates the categories 'small-scale' and 'large-scale' farmers, though, nor is any mention made of a conflict between the two. More importantly, any information regarding the government's role in instigating disputes over land rights is absent.

[138] Interestingly, the plan depicted the 'threats' to a successful implementation as problem of translating "the existing strong commitment declared by the government towards achievement of the Agricultural Revival into appropriate policies and to provide the necessary funds and technical assistance adequately and timely" (Council of Ministers 2008: 71). The usual tool for controlling outcomes, supervision, monitoring and evaluation is shown in one diagram as uni-directional (top-down) flow from the Vice President to the High Council for Agricultural Revival (approvals and reviews), on the one hand, and to the General Secretariat for Revival (management information system), on the other (Council of Ministers 2008: 72-73).

[139] The following case study is based on fieldwork in Heiban, Kadugli and Khartoum in May and September 2009, and January to March 2010. The data was derived from interviews with founding and other members of the cooperative, officials of the Union of Cooperatives, and both official and unofficial papers of the cooperative.

[140] Nadel was the first to analyze the complex relation between different, only partially overlapping forms of group genesis in the Nuba Mountains, based on cultural and / or spatial and / or genealogical proximity: tribe / ethnic group, hill / local community, clan / family (Nadel 1947: 84ff for Heiban). A disentanglement of these forms is not intended here.

[141] Interview with Ṣāliḥ Kuku Kunda in Kadugli, March 3rd, 2010.

[142] The organization of Native Administration in the levels *nāẓir* (Arabs) / *mak* (Nuba), *ᶜumda* (Arabs) and *šayḫ* is based on the Power of Sheikhs Ordinance of 1922, amended later several times (e.g. 1927, 1954). This organization was never fully consistent, though (Ibrahim AUM 1985). A *ᶜumudiyya* map connected to the first population census (1955/1956) confirmed the territorial principle of this form of rule.

[143] Based on the map's grid, the area is rather about 1800 km². The grid resolution is 50 m, the projection method is Universal Transverse Mercator (UTM), and the UTM grid shown has a 10 kilometre interval.

[144] Nāṣir ᶜAli ᶜUmar worked in 2010 on a PhD about the productivity of cooperatives in South Kordofan; the results of his work were not available for this thesis.

[145] Both systems are basically loans, which are given at the beginning of the season combined with a mortgage on part of the future harvest. The value of the mortgage is based on the price of the crops at the moment of the loan (*šayl*) or a price fixed by dividing the loan through a fixed amount of crops to be handed over (*salam*). The former occurs in informal settings without collateral, the latter in dealings with agricultural banks. Especially in the case of *salam*, the fixed price is mostly much lower than the price on the agricultural market after harvest. A background on agricultural credits in Sudan is given in Elhiraika & Ahmed 1998 and Saleem 1987; South Kordofan is subject of Ahmed 1983. Another initiative to increase the availability of capital for small-scale farmers is the Nuba Mountains Bank founded in 2006 (Ismāᶜīl 2010).

[146] This aspect is mostly discussed under the term 'participation'.

[147] The document continues with definitions, aims, and conditions reminding of the language of contracts and laws: After defining the 'head of the family' (*ᶜamīd al-'usra*), 'model person' (*al-šaḫṣ al-rimz*), 'person in charge

of family affairs' (*raʾīs šuʾūn al-ʿusra*), the aims are then defined as a legal framework of activities, including, in addition to what was mentioned above, the creation of jobs for youth and farmers. After defining the conditions for subscription and membership (*iktitāb, ištirāk*), the rights of the model persons, creditors (*dāʾinūn*) and the cooperative itself; a list of protective measures (*al-ʿuqūbāt*) ends the document, signed by the *ʿumda* of Lebaŋ for Khartoum. A lack of record of either date or place signed underline the lack of bureaucratic and legal rigour, though.

148 The description of these first years in based on interviews with Naʿīm Kuti in Omdurman, January 14th, 2010, and Ṣāliḥ Kuku in Kadugli, March 3rd, 2010. Naʿīm got involved in the cooperative in 2008 as accountant; he was responsible for selling shares.

149 The Heiban Association was founded by mostly professionally successful migrants from Heiban, Abol and Kubang in Khartoum, and has developed into numerous branches in the Sudan and abroad. Its active members are in intensive contact or even overlap with representatives of other social institutions of the migrant community, such as church groups and Native Administration, which also makes it a politically and intellectually significant force in its home region. The activities include regular meetings, conferences and cultural events (Sharif 2005).

150 Among others, these contentions were reconstructed based on an interview with Ṣāliḥ Kuku in Kadugli, March 3rd, 2010.

151 The office of the union carries a sign which states 1977 as its founding year and 1994 as its reopening date under the Ministry of Finance and Economy.

152 The proposition to establish cooperatives as institutional tools for agricultural development is several decades old in the development literature about Sudan and the Nuba Mountains (Wörz 1966, Khider & Simpson 1968, Bardeleben 1973, Mohammed 1979, Abdelrahman & Smith 1996). Baumann 1984 provides an intensive study of the social implications of such initiatives.

153 The original schedule of the training programme for the SPLM-areas (*al-manāṭiq al-muḥtāra*) set out three days with four 1.5-hour sessions each day, which were supposed to introduce the basics of cooperative administration, agricultural extension, finance by agricultural banks, modern production, and marketing. The fourth day was intended for presentations on how to use and maintain the disker and methods of plant protection. According to the Secretary of Agriculture for the Chosen Areas, the first training of the first year's 30 newly registered cooperatives brought together 90 persons who were supposed to lead their cooperatives after the training. Many of them were actually Native Administration leaders without previous experience in any of these fields.

154 According to Ṣāliḥ Kuku, the Agricultural Bank purchased the tractors for only 58,000 SDG (interview in Kadugli, March 3rd, 2010).

155 Interview with Maxim Ḫamīs in Kadugli, January 21st, 2010.

156 Interview with Ṣāliḥ Kuku in Kadugli, March 3rd, 2010.

157 Interview with Naʿīm Kuti in Omdurman, January 14th, 2010.

158 Interview with Patrick al-Tiğāni in Omdurman, May 22nd, 2009.

159 The real capital available was even less: The book-keeping showed a starting capital of 7458 SDG in the bank account, 1745 SDG cash; further expenditures before the assembly were 450 SDG for the official receipt booklets, 121 SDG bank fees to open an account, 87 SDG fees to let the booklets be certified by the tax authorities. The overall capital was therefore only 8545 SDG, from which the initial instalment of 6000 SDG was paid.

[160] Interview with Patrick al-Tiğāni in Omdurman, May 22nd, 2009.

[161] One of the juvenile members appointed as member of the cooperative's board in Khartoum was discharged during the general assembly due to inactivity and absence. She was not present at that time, and when I informed her later of this step, she shrugged her shoulders saying: "I am in so many other committees."

[162] Interview with Patrick al-Tiğāni in Omdurman, May 22nd, 2009. Others also registered cooperatives with this thought in mind. A major trader based in Heiban had registered a cooperative for his extended family explicitly to support an additional income independent from him as an individual. The surplus was thought to come from cultivation of 500 *feddān,* registered formally, for the purpose of which three family members were specifically put in charge (interview with Ḫālid Kunda in Heiban, February 1st, 2010). In Kadugli, I had spoken with one member of a Lebaŋ family. He stated with frustration that the problem was that the people in Heiban were not active, even if it was in their interest to be so. He preferred the idea of use or rental, via an acquaintance, of land south of Katcha (in the direction of Buram), which he considered easier to achieve as a family cooperative with capital and securities. (Interview in Kadugli, January 19th, 2010).

[163] This lack of control was one of the main reasons keeping many from joining. In Heiban, two of the most economically active young men said, of cooperatives in general, that such a form cannot work, because single persons hold the resources of many in their hands, while nobody controls them. Their example was that of the electrical mill (*taḥūna*) in Heiban, which had been managed by the same people since the 1980s, and whose profits were never evaluated. In the same way, they considered that most of the efforts involved in the cooperative would only be for money grabbing by those in charge, who are not even brought to court when embezzlement etc. is discovered, but only exchanged. Therefore they preferred to invest on their own account. (Interview with Amir and Steven Amdur Komey in Heiban, February 1st, 2010).

[164] Interview with Daud Narrpi in Kadugli, January 18th, 2010.

[165] Interview with Naᶜīm Kuti in Omdurman, January 14th, 2010.

[166] Interview with Ṣāliḥ Kuku in Kadugli, March 3rd, 2010.

[167] Interview with Daud Narrpi in Kadugli, January 18th, 2010.

[168] An assessment of this project is Muneer & Musa 1995.

[169] He made, together with the Financial Secretary, an agreement with the *ᶜumda* of Kweik (Keiga Jirru) to use land there as a cultivation area. (Interview with Maxim Ḫamīs in Kadugli, January 27th, 2010).

[170] This perception is part of a heightened awareness of land issues after the civil war, which can be observed in the documents produced in the All Nuba Conferences in 2003 and 2005.

[171] There are certain complex implications of this process that cannot be made fully explicit here. The initial claim of the Heiban *ᶜumūdiyya* is a contested one, which has to do with the present political situation of Native Administration and how representation on this level is organized. For the general situation of Native Administration and land claims see Komey 2010a.

[172] Interview with Faiṣal Bašīr, Executive Director of the Ministry of Agriculture and Forestry South Kordofan, January 21st, 2010, Kadugli.

[173] This included members of a cooperative that had existed in Heiban before the war. The main asset of the cooperative had been an electrical mill, which was now no longer in use. When the government brought a new diesel engine in the 1990s, it left the cooperative with quarrels about property rights, which are still not resolved.

[174] This chapter is based on three week-long stays in Abol in May 2009, and February and March 2010.

[175] 'Mountains' here designates a rocky area in an elevated landscape. Abol lies about 900m above sea level, and the rock formations do not rise more than 200-300m above this level, but their relative difference from the

lowlands, which cover most of the Sudan, led to the linguistic convention of calling them 'mountains'. In the language of Abol, rock formations are also called by one designation, -LAŋ OR -LEŋ (for instance GÚDLƐ-LƐŋ, NDƐ́ṚA-LAŋ; cp. lɛn in Schadeberg 1981: 40). Reportedly, the top of the mountain of Ebaŋ is the highest point in the Nuba Mountains, with an elevation of 1,326 m (UNEP 2007: 52).

176 John, Ibrahīm, and Muḥayy al-Dīn Budrus, February 7th – 9th, 2010, Abol.

177 Interview with Yussif Tiya, May 5th, 2009, Abol.

178 Already in 1947, Nadel stated 'environment and history' as main reasons for preferring uphill settlement, because "hills and hillsides offer the only sites with perennial water supply in a poorly watered country; and the fastness of hills and hillsides alone offered protection to the badly armed primitive Nuba groups from the attacks of the Dervish troops during the Mahdist régime." (Nadel 1947: 6).

179 Interviews with Mubārak Faḍul, Yussif Tiya, Idrīs Kuku Mān, and Ḥamīs, May 3rd & 5th, 2009, Abol.

180 According to Guma Kunda Komey, a colleague born in Abol, rainfall, and, subsequently, water availability had decreased significantly already before the war, and induced many families to move successively in direction of Heiban (conversation May 11th, 2012).

181 Interview with Yussif Tiya, May 5th & 8th, 2009, Abol.

182 Accordingly, this is not an attempt to substitute hydrological studies. An early groundwater study is that of Rodis et. al. 1968; a Landsat model of groundwater in the Nuba Mountains was worked out in 1984 (Ahmed et. al. 1984). General geological studies were Vail 1985, Sadig & Vail 1986, Dill et. al. 1991, Brinkmann et. al. 1994, Schwarz 1994, Sam & Holm 1995, Mohamed et. al. 2001, Adam et. al. 2011, Adam & Eltayeb 2012.

183 The geographical coordinates were converted into the MinDec form (degrees as integer, minutes as real number). For measurement, a Garmin eTrex Legend HCx was used. However, the accuracy is reduced to about 15 metres, because Sudan is outside any network of supporting ground reference stations, like the North American WAAS (Wide Area Augmentation System), the Japanese MSAS (Multi-Functional Satellite Augmentation System, or the European EGNOS (Euro Geostationary Navigation Overlay Service). The mountainous character of the area may have caused further distortions. See <http://www8.garmin.com/aboutGPS/index.html>, retrieved 14-01-2012.

184 The software used was CorelDraw 12.

185 The following argument has been discussed in more detail in Ille (forthcoming).

186 <http://www.who.int/water_sanitation_health/mdg1/en/index.html>, retrieved 13-05-2011; <mdgs.un.org/unsd/mdg/Resources/Attach/Indicators/OfficialList2008.pdf>, retrieved 13-05-2011.

187 Some studies even observed a greening of the Sahel, as argued in Olsson et. al. 2005.

188 This period was defined as the 'normal period' for current climate assessments by the World Meteorological Organization (WMO) and also recommended by the Intergovernmental Panel on Climate Change.

189 According to a software workbook, the Model for the Assessment of Greenhouse-gas Induced Climate Change (MAGICC) "is a set of linked simple models that, collectively, fall in the genre of a Simple Climate Model", being thus less dynamic than three-dimensional General Circulation Models (Hulme et. al. 2000: 6). SCENGEN is a complementary "global and regional SCENario GENerator", a database with multiple GCM experiments and data sets, which can be used together with MAGICC and a climate scenario to create projections for vulnerability & adaptation assessments (Hulme et. al. 2000: 6).

190 These influential scenarios provide basic assumptions for long-term climate change projections by suggesting developments in CO2 concentration. The 1992 IPCC Scientific Assessment provided, in a supplementary report, six scenarios (IS92a to f; Leggett et. al. 1992). Girod et. al. 2009 provide a detailed review of the

changes between three series of IPCC scenarios (1990, 1992, 2000). The IS92 scenarios also marked the change from the term 'predictions' to the more suggestive 'projections' (Girod et. al. 2009: 3).

[191] The Hadley Centre Coupled Model 2 Transient Ensemble (HADCM2) of the Met Office Hadley Centre U.K. was designed in 1995 for climate predictions (Johns et. al. 1997) and was used in IPCC's Second Assessment Report (1992).

[192] The Bureau of Meteorology Research Centre (BMRC) in Melbourne developed its model at the end of the 1980s and beginning of the 1990s (McAvaney et. al. 1991). The latest version, BMRC 3.2, was created in 1993.

[193] The GFDL Transient models are constantly developed and amended by the Geophysical Fluid Dynamics Laboratory of the National Oceanic and Atmospheric Administration at Princeton University. Its numerical models are, for instance, used for El Nino predictions and IPCC climate models.

[194] These 'anecdotes' were taken from unpublished data of the Ministry of Irrigation and Water Resources, UNEP's own interviews during field missions, and three projects of IFAD (Northern Province Irrigation Rehabilitation Project, Northern Region Agricultural Rehabilitation Project, Western Savannah Project; see <http://www.International%20Fund%20for%20Agricultural%20Development.org/evaluation/public_html/eksyst/doc/lle/pn/l103nrme.htm>, retrieved 24-05-2012).

[195] <http://www.sunanews.net/english-latest-news/17546-council-of-ministers-review-report-on-drinking-water.html>, retrieved 13-05-2011.

[196] This anticipated removal of South Sudan from the list is a case of diplomatic slippage: The referendum on separation was still no conducted, but North Sudan is projected to be alone by 2015.

[197] The latter study was conducted in frame of the Nile Capacity Building Network in Integrated Water Resources Management, established 2004 in Khartoum as non-profit network; the former by the Nile Basin Initiative. This makes the focus understandable, but does not change the issue of established observation points.

[198] Especially during the 1960s and the 1980s extensive studies on water resources in Kordofan were conducted, e.g. FAO & Doxiadis 1964-1966, HTS 1981b, and Riley 1985. Other early post-independence studies are Lebon 1956, and Rodis et. al. 1968. Among recent scientific studies providing hydrological information are Osman et. al. 2008, Abdalla 2009 and Mohamed et. al. 2011. A history of water planning and administration up to the 1980s is given in Shepherd et. al. 1987. Other studies have been concerned with the socio-economic impact of new sources of water (e.g. Ahmed 1982) or their environmental impacts (e.g. Tayeb 1981). Furthermore, nearly any socio-economic study on the rural South Kordofan discusses contentions over water, especially concerning water points used both by pastoralists and farmers (e.g. Saeed 1982; Khalifa et. al. 1985: 58-64; Manger 1988; Abdul-Jalil 1998; UNDP 2006; Siddig et. al. 2007; Saeed 2008; Chavunduka & Bromley 2011).

[199] These are the aggregate numbers for the whole year; the measurements for 2005 were only April-September, for 2006-2009 April to October.

[200] The primary governmental study is GoS 2003a-b. Other studies since the 1980s include Hielkema et. al. 1986, Olsson & Rapp 1991, Eltahir 1992, and Elagib & Elhag 2011. In all of these studies, South Kordofan is represented by the station in Kadugli.

[201] The Sudan Meteorological Authority, later integrated into the Sudanese Standards and Meteorology Organization, in 2003 began publishing the Sudan Agromet Dekadal Bulletin, containing data from the Satellite-based Agro-Meteorological Information System (SAMIS), which was funded by WFP and installed by the TAMSAT group of the Department of Meteorology, University of Reading, U.K. It is not clear to what extent the statistics quoted here are related to or integrated with this system.

[202] A cooperation between the United Nations Children's Fund (UNICEF) and the regional governments was formed to deal with water issues within the framework of a Water, Environment and Sanitation Programme (WES). WES is based on a 50/50 finance arrangement between the government and UNICEF, but the delay of payments by the government in South Kordofan led, in 2010, to the cease of almost all activities.

[203] This subchapter is based on interviews with Yussif Tiya and ᶜAiz al-Dīn Kuku Mān in Abol, on the May 5th & 8th, 2009, with Mubārak Faḍul in Abol on February 6th, 2010. Additional participant observations and interviews were made in Abol in April and May 2009 and in February and March 2010.

[204] Wells don't have to be dug more than 30 metres deep in the region, because it is part of the Umm Ruwaba Basement, which means there is basically no need for boreholes. A UNEP report of 2007 described the Umm Ruwaba formation as "reportedly an excellent source of near-surface groundwater" (UNEP 2007: 243).

[205] The implications of this situation were discussed in more detail in Ille (forthcoming).

[206] Concern Worldwide was started in Ireland, as Africa Concern, in reaction to the war in Biafra in 1968; two years later it brought emergency aid to East Pakistan as Concern. Emergency aid has remained one of its core activities in Sudan, with focus on West Darfur, but South Sudan is also an aid site (Concern Worldwide 2005, Concern Worldwide U.S. 2011). The main programmes in the Nuba Mountains were watershed management and seed banks, starting in the 1980s (<http://www.concernusa.org/ourwork/programs.asp?pid=56>, retrieved 18-02-2012). A similar programme, comprising courses in water cycle management, had also been run by Medair.

[207] The following section is based on an interview in Kubang, March 8th, 2010.

[208] The SPLM administration starts theoretically with either one large or several smaller villages that form a *buma*; several *bumas* form a *payam*; several *payams* a county, and several counties a state. So-called people's councils on the *buma* level select a *buma* representative, who leads the interaction and cooperation with the SPLM administration of a *payam*. According to this system, *buma* Kubang was part of *payam* Irral in Rashad County.

[209] Interview in Abol, February 7th, 2010.

[210] Participant observation in Abol, March 7th & 8th, 2010.

[211] Participant observation in Abol, February 6th, 2010.

[212] Conversation in Abol, February 8th, 2010.

[213] Participant observation in Abol, February 9th, 2010.

[214] Far from being an 'expert stranger', the programme manager Mutwakkil had gone to school in Heiban until the everyday discrimination that started with the war drove him away; he stayed in Kubang during the war, running (*jārī''*), as he said. In 2000, he became involved in relief and was in charge of the lists of people who were to receive dropped aid. He started in 2003 with Concern Worldwide, and, after SAF soldiers stole his cattle in 2004, he started to inform and warn about cattle thieves over the organization's radio, gaining him the reputation of a spy for SPLA. He found out later about the thieves from people in Habila, where the soldiers had sold his cattle. Interview in Kubang, March 8th, 2010.

[215] One of the unanswered questions of this study is why the engineers of Concern Worldwide have not been there, especially since one of the organization's employees is from the village.

[216] Participant observation, February 9th, 2010, Abol.

[217] During the first conference of Khartoum's Heiban Association in 2003, the decision was made to form subgroups in Kubang. But the SPLM representatives intervened with the request to do this not as part of an organization based in Khartoum, but as an independent body called *rābiṭa al-šabāb*, with the same functions as the Heiban Association.

[218] Concern searched for a new Heiban-based programme manager by September 2010 (<www.concern.net/jobs>, retrieved 18-08-2010). In addition to that, there was an opening for a watershed advisor in Heiban Locality, deadline April 2011 (<www.concern.net/jobs>, retrieved 15-02-2012). However, Heiban Locality seems not to have been a priority, as it is not even mentioned in Concern's Africa Report, in contrast to West Darfur, Abyei and Muglad (Concern 2011: 46).

[219] The following narrative is based on a number of interviews in Abol, Heiban, and Kadugli. The main interview partners were ᶜAiz al-Dīn Kuku Mān in Abol, February 6th, 2010; Elias Zakariyya in Abol, February 7th, 2010; Zakariyya Uṯmān of IFAD Heiban in Heiban, January 31st, 2010; Fatḥi Ismaᶜīl, Programme Director IFAD South Kordofan in Kadugli, January 19th, 2010; and ᶜAz al-Dīn Ḫamis, geological engineer, Ministry of Water Resources in Kadugli, January 26th, 2010.

[220] He described them as good people (*nās kwayyisīn*), even if they demanded a lot from the women, such as water, wood, food etc. Forced recruitment (*taǧnīd*) had not existed, but young men went voluntarily, especially after members of their families had died. The recruits had to go several months on foot to the training camp in Bilpam, and then returned the same way, but loaded with weapons and ammunition; more of them died of strain, hunger, and illness than in combat. Partly the Native Administration leaders (*šiyūḫ*) were involved in the trade of arms, in a chain of transport, for instance, from Tira Lumon to the Atoro to Abol. Interview with ᶜAz al-Dīn Kuku Mān in Abol, March 4th, 2009.

[221] He was 15 years old when he went to Khartoum; he worked as water pipeline layer for the National Water Corporation. He returned to Abol the first time in 2002 and settled in 2005; now he worked as water seller in Heiban, among whose customers is the Commissioner (*muᶜtammid*).

[222] In these water yards, water is pumped up during the night by an engine-driven pump through the 4-inch pipes and relieved during the day through 2-inch-pipes.

[223] Interviews with Yaġūb in Heiban, February 4th, 2010; John and Fārūq in Abol, February 7th, 2010; Yussif Tiya, Adam Tiya, *qisīs* Fārūq, Mubārak Faḍul in Abol, May 3rd, 2009.

[224] Interview with Zakariyya Uṯmān in Heiban, January 31st, 2010.

[225] Interview with Mutwakkil in Abol, March 8th, 2010.

[226] Interview with Fatḥi Ismaᶜīl, Programme Director of IFAD South Kordofan in Kadugli, January 19th, 2010, Kadugli.

[227] With this placement, they wanted to prevent the whole water flow from drying out further down the river, as would be the case with the prospected dam of Concern Worldwide.

[228] Interviews with MoWR / WES geological engineers ᶜAz al-Dīn Ḫamis and Sulimān Aḥmad in Kadugli, January 26th, 2010.

[229] The following description is based on several periods spent in Kubang. Interviews and conversations were mostly with Joshua Kodi (May 7th, 2009; January 27th, 2010; March 5th – 9th, 2010), Andraus (May 7th, 2009), Brema Kodi (January 27th, 2010), Josef (March 4th – 6th, 2010), Simuel (March 7th, 2010), Amna Ashoya (March 7th, 2010), Idris Raḥḥāl (March 8th, 2010), Zurāya Kodi (March 8th, 2010).

[230] Rottenburg 1991: 256 points to this arrangement, which was mentioned in Vicars-Miles 1934: 4.

[231] In Abol, the solution is somewhat different, due to the limited space and hilly terrain. The hilly paths to the house farms and houses are protected by gates, which are closed during the cultivation period to protect house farms from livestock. In general, cattle herding is practiced less here. Most people have goats and pigs, but while pigs mostly return to their pigsty at night, goats often roam free most of the time.

[232] Up until now, documentation on the human history of the region is rather limited and fragmentary, a situation already noted by Spauling in 1987 (Spaulding 1987). The most comprehensive attempts at providing such accounts were Stevenson 1984: 31-76, Husmann 1984, and Dabitz 1985, in addition to the historical introductions in many PhDs and monographs, early examples being MacMichael 1912 and Nadel 1947. More extensive historical studies of parts of the region are, for instance, Ewald 1990, Hesse 2002, and Ille 2011. Recent writings in Arabic include Ḥassab Allah 1998, Andalī 2002, Ibrāhīm 2002, Dawrah 2003, and Yūsif 2008, the last two focusing on Tegali and Ajang, respectively.

The limitation is also due to a contested 'beginning of history', which is connected to a question with political implications, namely ascertaining the locations from which migrations into the region originated. A large part of this discussion concerns the link with the Nubian kingdoms, especially in archaeological studies. More specific treatments included attempts at producing ethnoarchaeological accounts (Hodder 1982) and even genetic studies (Krings 1999).

[233] To move populations from the mountains to the plains was one of the major projects of successive central governments, most systematically conducted during British colonial rule (Ibrahim AUM 1985). One central study addressing the related social dynamics is Manger 1994 (see also Roden 1972).

[234] Stevenson observed, for instance, how "[t]he spread of Islam among the Nuba – not indeed a new thing – has been aided by many factors, among them the establishment of centres like Dilling, Kadugli, Talodi with their government posts manned by Muslim officials, markets and Arab shops, and cotton ginneries, the opening of roads to transport, pacification which has made it easier for Islamic fekis to travel and settle, the development of local government which brings Meks and sheikhs regularly to town centres, by many Nuba going outside the hills for wage-labour or serving in the army or the police, and by the teaching of Islam in schools." (Stevenson 1984: 73).

[235] One of the main written sources of information about Heiban's history is the letters of District Commissioner T. R. H. Owen (1939-1942), in addition to the memories of the MacDiarmids and Ian Mackie (1994), which were not available for this thesis. A body of pictures from the colonial period has been collected from the Sudan Archive in Durham at the Institute of Anthropology and Philosophy, University of Halle, Germany. Further sources not examined are the documents connected to the Public Works Department and subsequent Sudanese ministries in charge for transport and infrastructure. The period after the Second Civil War was discussed in general in Hassan 2009, but a detailed reconstruction of the last decades remains a task yet to be undertaken, as indeed is so for the rest of the region,.

[236] Newbold's assessment of the Nuba Mountains' situation in 1934/35 showed clearly the priority of economic considerations, especially of export and revenues: "Communications – though they might be bettered – are good, and the railway to north and river ports of Kaka and Tonga to south-east offer near enough outlets for export. […] I think that fortunately neither a railway nor al-weather roads will be necessitated or justified in cost for a number of years, and that while there no harm in preliminary surveys of both being done now, as they are in fact being done, consideration of both can be and should be postponed until an agricultural and economic survey of the whole area is completed and we have some idea of the likely volume of exports and imports during the next decade. Improvement and partial re-alinement [sic] of existing roads is, on the other hand, desirable and is under review." (Henderson 1953: 492, 494).

[237] SAD.414/9/1, Letter of T. R. H. Owen to his father, October 29th – 31st, 1939.

[238] SAD.414/10/72, Letter of T. R. H. to his father, July 28th, 1940.

[239] SAD.414/10/94, Letter of T. R. H. Owen to his mother, November 5th, 1940.

[240] SAD.414/11/52, Letter of T. R. H. Owen to his mother, October 2nd, 1941, El Obeid.

[241] H. B. Arber, Assistant District Commissioner of Rashad from 1936 to 1940, denoted this way as "the famous mule trek to Talodi in the rains" (SAD.736/2/11, H. B. Arber, n.d., Sudan Political Service 1928-1954, unpublished manuscript).

[242] Donald Newbold, Governor of Kordofan 1932-1938, had noted in 1934/35 that Native Administration had to be included in any local survey and any project, as the community leaders might otherwise sabotage these efforts. They were to be considered the entry point for all departments to communities. (Henderson 1953: 495) The rural courts, which were one of the main arenas of NA authority, also had administrative functions such as budgets, markets, wells, roads, and sanitation (Stevenson 1984: 70).

[243] This view is corroborated by Husmann 1984: 92 (without further sources).

[244] Rosemary Kenrick noted the British passenger's view: "The knowledge that the tribe responsible for the upkeep would ultimately receive a bad mark for this lapse did not help the passengers on the lorry, who perforce had to set to on lengthy repairs." (Kenrick 1987: 88-89).

[245] T. R. H. Owen wrote light-heartedly to his mother: "Half the public works and things that are worth doing are done by prison labour; moreover feudalism is not quite dead, and it is the perk of the D.C. and the Mamur to select one or two good men (but not too many; even ramps must be kept within measure) to work for them. So a cheerful cattle-thief washes my clothes, a burly shopbreaker chops up Sadeek Effendi's firewood, and a very trustworthy murderer sleeps in the club-premises at night to guard against theft. Long live privilege. I might even have the barber out, and get a free clip." SAD.414/12/40, Letter of T. R. H. Owen to his mother, August 30th, 1942. Pat Arber wrote in 1938: "As well as the cook, houseboys and syce, everyone had a 'guaranteed prisoner', i.e. well behaved one way from the gangs that guarded by police kept the roads and village clean. I'll never forget one morning, soon after we got there, seeing a very large black man, with chains from waist to ankles, advancing through the house towards me – to hand me the post!" (SAD.890/6/4, Pat Arber, n. d., untitled, unpublished manuscript).

[246] Newbold wrote in a letter on October 29th, 1933: "But, altho' prison labour is uneconomic and notorioulsy inefficient, it is quite legitimate to use it on public works, e.g. gardens, forests etc. True, it cuts out some unemployed, but Government is very hard up and must do all the economies it can. Probably much of this work could not be done at all (I know this is so in El Obeid) if prisoners were not used. Moreover what are they to do otherwise? Oakum? Route marches? We have a moral duty to them and I think they have a first call on our conscience." (Henderson 1953: 54)

[247] SAD.414/11/52, Letter of T. R. H. Owen to his mother, October 2nd, 1941, El Obeid. Pat Arber's description of such an emergency in 1938 sounds familiar even today: "Occasionally deep sand meant 'all out' and furiously digging out the lorry, shoving metal tracks under the spinning wheels." (SAD.890/6/3, Pat Arber, n. d., untitled, unpublished manuscript).

[248] SAD.414/11/28, Letter of T. R. H. Owen to his mother, May 30th, 1941, Rashad. In 1941, Heiban was one of the administrative centres with a police station of 10 men and a prison under Police Warrant Officer Ibrahim Chumchum, as well as a missionary station, a dispensary and a rest house. The District Prison was in Talodi, and about 40 police on horses kept police lines (SAD.414/10/84, Letter of T. R. H. Owen to his father, September 3rd, 1940, Rashad; SAD.761/8/18, 20, J. N. C. Donald, n.d., Some memoirs, unpublished manuscript).

[249] SAD.723/5/20-33, J. A. Gillan, 1926, Notes on road making and bridge building from local resources, unpublished manuscript.

[250] So he says about the construction of ditches: "It should be hardly necessary to say that a proposed ditch should be properly aligned with pegs by the District Commissioner or some one suitably trained. The native

may be able to dig a ditch without much supervision but he cannot keep a straight line. A waggly lined road, besides looking very slovenly, makes driving more difficult & tends unnecessarily to reduce pace." (SAD.723/5/22). In a later note on masonry bridges, the 'local builder' is mentioned: "Masonry bridges on a large scale are beyond the scope of the amateur. When reasonably good builder is available however simple one-span bridges on masonry abutments present no great difficulty on suitable sites. Photo 10 shows a bridge in Toriz District built under District Comissioner's supervision by a local builder earning LE.3 per month" (SAD.723/5/27).

[251] "Where a bridge is not considered necessary, e.g. where the road is a purely dry season one, or where the flood is only occasional, and the bed of the Khor is of a nature (sand, gravel, or rock) which will take high motor traffic when the Khor is not actually in flood, the crossing should take the level of the bed & should not be banked up at all. This will entail cutting through the banks to a suitable, gradient & may require a considerable amount of excavation. The majority of it however is unskilled labour, & anyhow it is infinitely preferable to raising the crossing by a ramp" (SAD. 723/5/24).

[252] The usage of box bridges, for instance, is recommended, because they "can be constructed by purely local labour under amateur supervision" (SAD.723/5/24). Furthermore, as noted in an example from Yei, "[a]n engineer built bridge of these dimensions would cost thousands of pounds, & the bridge in question is a gallant & successful substitute" (SAD.723/5/25).

[253] Gillan wrote of a situation in which water runs under a road, but not enough to necessitate a bridge: "Pipes are the ideal for this but they are too expensive for ordinary province road work" (SAD.723/5/27).

[254] A recommendation is, for instance, that "[w]here labour is cheap ordinary ditching can probably best be done manually. In some cases however it might be more economical to employ the plough & gassabiyya system described under "Banking". Alternatively ditches might be ploughed and the loose soil removed by shovel or basket" (SAD.723/5/22).

[255] The central sentences in Gillan's document are: "The official system there is one of sectional responsibility, which has achieved excellent results, & appears to be evolving in some parts into a local system of individual responsibility. I was much struck by frequently coming across small parties or individuals weeding or patching their sections without any supervision or outward sign of compulsion. This system encourages the villages or individuals to take a pride in their work & keenness can be further encouraged by offering prizes for the best kept sections. The ordinary upkeep on this system need not be paid for as the people receive a direct benefit by having a cleared road all the year round. The money thus saved could be spent in paying a decent amount for new works & improvements which involve the people leaving their ordinary occupations & their villages for days at a time" (SAD.723/5/29).

[256] Gillan notes, however, that this "is only practicable where the people are living or can be brought to live near the roads, which is mostly not the case here; but it might be aimed at in some parts" (SAD.723/5/29). This thought is significant within framework of policies, which aim at bringing mountain people 'down to earth'.

[257] Owen complained in one letter to the effect that, due to problems with the carburettor and the wiring of a lorry, only 34 miles had been travelled in 3.5 hours, suggesting that 10 miles per hour (about 16 km/h) was considered an unacceptably slow speed at that time, considering also that the important link Rashad-Talodi was 100 miles / 160 kilometres long (SAD.414/11/31, Letter of T. R. H. Owen to his mother, June 17th, 1941).

[258] SAD.414/10/84, Letter of T. R. H. Owen to his father, September 3rd, 1940, Rashad. Rosemary Kenrick documented "[o]ne agriculturist, whose vehicle broke down in a rush down like the Severn Bore in a *khur* after the start of the rains and who failed to get the engine started again in time, lost all his paper and many of his belongings." (Kenrick 1987: 89).

[259] SAD.414/10/73, Letter of T. R. H. Owen to his father, July 28th, 1940.

[260] SAD.414/11/58, Letter of T. R. H. Owen to his father, November 14th – 15th, 1941, Kaka.

[261] Specifically mentioned was so-called elephant grass that made roads impassable, as well as elephant droppings and ebony roots (Kenrick 1987: 88).

[262] SAD.414/10/92-94, Letter of T. R. H. Owen to his mother, November 5th; 1940; SAD.414/10/108, Letter of T. R. H. Owen to his mother, December 7th, 1940.

[263] SAD.414/10/92-94, Letter of T. R. H. Owen to his mother, November 5th, 1940.

[264] SAD.414/10/95, Letter of T. R. H. Owen to his father, November 14th, 1940, Lubān (east of Elliri).

[265] SAD.414/11/2, Letter of T. R. H. Owen to his mother, January 13th, 1941.

[266] SAD.414/10/92, Letter of T. R. H. Owen to his mother, November 5th, 1940.

[267] SAD.414/9/1, Letter of T. R. H. Owen to his father, October 29th -31st, 1939.

[268] SAD.414/11/9, Letter of T. R. H. Owen to his mother, February 20th, 1941. This reminds me of Douglas H. Johnson's short text "Nuba chainmail cavalry of the Mahdi's army", which describes Ḥawāzma as 'Nuba Arabs' (Johnson 1971). The short notice seems to have been addressed rather at those playing with tin soldiers, however.

[269] SAD.414/10/88, Letter of T. R. H. Owen to his father, September 20th – 21st, 1940. Air traffic seems to have been exclusively for governmental transport and punitive war planes, a combination significantly added to today only by UN aircraft.

[270] SAD.414/10/102, Letter of T. R. H. Owen to his father, November 14th, 1940, Lubān (east of Elliri).

[271] John W. Kenrick, Assistant District Commissioner in Talodi in 1944, described how the radio contact to Kadugli was also used for medical purposes: "When I became ill temperature and description of symptom would be sent by the dresser by radio to Dr Anis at Kadugli, who would telegraph his instructions and I would be given the appropriate dose of the right pills." (SAD.815/4/13, John W. Kenrick, 1982, Notes for the history of the Sudan Political Service, unpublished manuscript). El Obeid, according to a short note written by Owen, had an x-ray at that time (SAD.414/10/89, Letter of T. R. H. Owen to his father, September 20th – 21st, 1940).

[272] It may be mentioned that the tsetse fly not only limited the use of camels and other animals for transport, it also 'facilitated' in this sense the use of motorized transport and bicycles. An 'island' of tsetse fly infestation in the region around Heiban were the Kawalib hills and Delami, rendered the use of police horses etc. impossible (SAD.414/10/34, Letter of T. R. H. Owen to his mother, March 16th, 1940).

[273] The details of motorized vehicles used have to be collected from fragmented notes. Owen mentioned a Ford Saloon (SAD.414/10/94, Letter of T. R. H. Owen to his mother, November 5th, 1940). Rosemary Kenrick writes of three-tonner lorries, which were replaced after World War 2 by a smaller Bedford type pick-up (Kenrick 1987: 91). She mentioned, too, that new lorries after the war were not necessarily better as "they overheated with maddening frequency and their engines took ages to cool down. It later transpired that they were a war surplus specifically made for use in Canada and so had no efficient cooling system" (Kenrick 1987: 89). The Sudan Armed Forces, as well as higher members of the government, were using much better four-wheel drive jeeps and Land Rovers (Kenrick 1987: 93). She adds: "An inherited government policy of 'wise caution' militated against the introduction of anything new, substantiated by the invariable excuse of economy." (Kenrick 1987: 93). Henderson 1953 shows, between pages 56 and 57, a picture of a car and lorry in the Nuba Mountains in 1934.

[274] Rosemary Kenrick, wife of a Sudan Political Service official, collected later memories of other wives and provided one of the few sources discussing the intense conditions involved in moving around. One chapter is dedicated only to 'trekking', as the local British jargon called it. She proposes the etymological explanation that

the Dutch word ‘trek‘ entered through the military personnel involved in the Boer War in South Africa, “where it specifically referred to travelling by an ox-drawn wagon“ (Kenrick 1987: 86). ‘Trekking‘ in Sudan “could be by camel, paddle-steamer, pony, lorry or by foot”. Motor transport was a form of transport by lorry that “no one in their senses in Britain would dream of“, as anyhow ‘road‘ should be taken as a euphemism, because “[o]utside and beyond the main centres, no roads comparable to those in Britain existed“ (Kenrick 1987: 87). Similar memories can be found in C. R. Williams‘ *Wheels and paddles in the Sudan (1923-1946)* with a chapter on the Nuba Mountains (Williams 1986).

275 Owen‘s letters, for instance, contain many little anecdotes about the ‘district lorry‘. A borrowed lorry from Abu Jibayha was described as “a shocking affair with the front springs tied up with cord & the headlights tied on with string, that rocked & stank & shivered at every bump, & had far too much play in the steering wheel to allow one any sense of security” (SAD.414/10/44, Letter of T. R. H. Owen to his father, April 28th, 1940).

276 A dry-dock is mentioned in SAD.414/10/44, Letter of T. R. H. Owen to his father, April 28th, 1940.

277 Rosemary Kenrick claims: “Every Sudanese always carried bits of wire and string with him to repair any electrical or other fault; exactly how, no mechanically unsophisticated European wife ever knew“ (Kenrick 1987: 89).

278 Owen noted that “mechanical Arabic is a sort of separate language, a haggis of adapted words from European Tongues”. The examples he gives about his police driver are *katāwit* for cutout and *jīr-bōks* for gearbox in English, *bobīna* from the Italian word for distributor, and *farmala* from the French for brake (SAD.414/11/47, Letter of T. R. H. Owen to his father, September 5th, 1941). As usual, these borrowings create fuzziness: *Bobina* is actually the coil, which in its industrial usage is also called the bobbin; the Italian word for the distributor in a car is *spinterogeno*. The French word for brake is *frein*, the Italian *freno*; both with Latin origins. The word was also borrowed by Turkish (*fren*), whose verb *frenlemek* is a possible bridge to *farmala*.

279 J. C. N. Donald noted of Talodi in 1941: “There was a cotton ginnery which was active in the winter and spring depending on the cotton crop, with a British engineer.” (SAD.761/8/18, Donald, J. C. N., n. d., Some memoirs, unpublished manuscript). The engineers were apparently rotated in a manner similar to all the other colonial personnel. In 1940, the ginnery engineer in Talodi, Bass, changed to Kaka, and was substituted by Ellis (SAD.414/10/94, Letter of T. R. H. Owen to his mother, November 5th, 1940; SAD.414/11/58, Letter of T. R. H. Owen to his father, November 14th – 15th, 1941, Kaka).

280 Husmann 1984: 201 quotes an unpublished B.A. thesis of Abdalla Mohammed Abdalla (*Cotton in the Nuba Mountains*, 1956) with the following years of opening: Talodi 1927, Kadugli I 1928, Kadugli II 1929, Lagowa 1933, Dilling 1934, Abu Jibayha 1936, Umm Barambayta 1937.

281 Henderson writes about Newbold in 1934: “In February he was in the Jebels again, attending tribal gatherings at Kadugli and Talodi and discussing the development of the Lagowa area on the western fringe of the hills, where a cotton ginnery was to be established, involving better roads and extra police, new buildings, water supply, labour lines, &c.” (Henderson 1953: 59). Husmann speculates that the introduction of a cash crop like cotton also had to do with the prospect of a better infrastructure, which would increase the effectiveness of the administrative rule and, where necessary, its support by military action (Husmann 1984: 92, 200). The development of cotton production in the Nuba Mountains has received some attention; among the central sources are Rose 1951 and March 1954, as well as sections in Husmann 1984, Ibrahim HB 1988, and Battahani 2009.

282 Angus Gillan had discussed this issue already in 1926 in a manuscript called “Notes on possible railway routes in Nuba Mountains Province“ (SAD.723/5/13-18); Husmann 1984 hints also at documents in the Central Records Office (today National Records Office) in Khartoum (CIVSEC 65/12/51 and 1/56/156). Hill

1965 specifies the process: “At various times during the infancy of road motor transport, the question of building a railway to the Nuba Mountains was debated and several surveys were made. The tribes in the mountains were beginning to grow appreciable amounts of short-staple cotton which encountered marketing difficulties among which was the lack of transport. A meeting of heads of railway departments held in Atbara in November 1932 discussed a scheme to build a line from a junction at el-Rahad on the Kordofan Railway to Kadugli. The proposal was to relay the Khartoum-Wadi Medani line with 75-lb. rails and use the recovered 50-lb. rails for the proposed Nuba Mountains line which would be built economically with the minimum of bridging and signalling. But the Sudan was still under the shadow of the world economic crisis and the proposal lapsed. Now, thirty years after, with the improved road transport in the mountains and rail outlets at Abu Zabad and el-Muglad, a large area of the Nuba Mountains is within easy access to the outer world” (Hill 1965: 125). The railway reached Al-Mujlad as part of the link between Babanusa and Bahr al-Ghazal in April 1959; this link was re-established as part of the National Emergency Transport Rehabilitation Project of the Multi-Donor Trust Fund after 2005.

283 In a review of Nadel’s book about Nuba, Angus Gillan quoted, in the *Spectator* on December 12th, 1947, Nadel’s application letter for his anthropological study at the end of the 1930s: “During the last decade the authority of Government, the forces of modern economics, and the influence of modern science (medical, mechanical and agricultural) have impinged on them to a rapid degree […] The development however has been mainly in economics and communications and the material advance of the Nuba has far oustripped their mental and cultural advance.” (quoted in Henderson 1953: 497-498).

284 Newbold’s full argumentation about this point was “a) that as long as ginnery engineers, &c., are government employees, their services are available for marketing, building, well-lining &c., (b) that the Nuba are a primitive race who need careful handling and only respond to such technical officials as take the trouble to study their social organisation and customs, and c) that the rain-cotton scheme is still in the nursing stage which necessitates direct government handling.” (Henderson 1953: 494).

285 Newbold specifies that these schools “are now being instituted in both districts to supplement mission vernacular teaching, to teach Arabic, and to provide a reservoir for literate *meks* and *meks’* staff, and for minor government employees in ginneries, dispensaries, farms, &c.” (Henderson 1953: 496). A special case, which requires more following, seems to have been the engineering school in Kadugli.

286 The latter aspect seems to have played a larger role for the administrators in larger towns such as Khartoum. In Henderson’s book about Douglas Newbold, he quotes a letter from 29th of October 1933: “There are 7,000 unemployed servants on D.C. Khartoum's register! There are several hundred unemployed effendia; there is a host of detribalised artisans also out of jobs; there is the small but difficult group of axed native officers.” (Henderson 1953: 53).

287 Newbold continued: “At present there is a dreadful rift opening between the clerks and the sheikhs, and no one is making any effort to bridge it. It's obvious we must obliterate or soften the differences between the two groups, differences of education, clothes, food, shelter, outlook. Then they can begin to talk to each other and establish points of contact. At present they merely get on each other's nerves.” (Henderson 1953: 53).

288 “By the end of the Condominium period the Nuba were finding more employment in government service as teachers, clerks, medical assistants and dressers, in shops and offices and, outside the hills, in factories, sanitary squads and on the railways.” (Stevenson 1984: 74).

289 This development has been discussed for Nuba migrants in Khartoum in Lamoureaux 2009. Another side effect was an increasing heterogeneity of the musical landscape, extended by the ‘patchwork music’ of mobile phone ringtones with pop music melodies from the USA and Europe, as well as some pieces from Europe’s

musical past (e.g. Bach, Mozart, Beethoven). The exchange of music files and online streams has further extended this trend to include pop music from North Sudan, Egypt, and East Africa.

290 Komey showed that even the interpretation of the past maintenance reappeared in the context of land property discourses: "My informant, 'Umda Al-Yias Ibrahim Koko of Keiga Tumerro, explained that during the British colonial period, the people of Keiga Tummero, under the leadership of the local chiefs, used to clear off the bushes and grass along the Dilling-Kadugli road annually at the end of every rainy season. In the campaign process, the people of Keiga Tummero used to receive the work from the Nuba of Debri at al-Ganaya area and hand it over, in turn, to the people of Keiga Luban, who, in turn, passed it on to those of Saburi. The Nuba wanted to convey the significance of this historical practice: it showed that there were no kilinki (borders) between the Nuba and any Baqqara group despite their permanent or seasonal presence inside the Nuba land. My informant insists that these Arabs never participated in the annual road clearing campaign. He continues to argue that whenever the Baqqara were asked to participate, they used to respond to the mufatish (the British inspector) or mamur (the British administrative officer) that they had nothing to do with the Nuba land, that they were not inhabitants of this territory but merely seasonal nomads who were simply passing through, and that their permanent homeland was in Kordofan." (Komey 2010a: 191).

291 The usual definitions are based on the so-called Brundtland report (Brundtland Commission 1987), which based sustainable development on an economic, a social and an environmental pillar. A first institutional basis took the form of the Commission on Sustainable Development (CSD) in the wake of the first Rio Conference in 1992 (Strandaneas 2011: 9). A thesis about South Kordofan explicitly using this concept is Yassin 2011.

292 The Washington Consensus is connected to the Institute for International Economics and more specifically the name of John Williamson, who compiled a list of 10 points that lead to development and growth. It was based on "the conviction that government was more likely to make things worse than better" (Todaro & Smith 2003: 702) and its free-market approach dominated US-led development policy in the 1980s and 1990s, especially through the IMF and the World Bank. According to Michael P. Todaro and Stephen C. Smith, a smoother so-called New (Santiago) Consensus was worked out at the April 1998 Summit of the Americas (Todaro & Smith 2003: 704). It insisted on market-based development, but gave governments the role of 'stabilizing the environment' of the markets.

293 The institutional soil of this model is the John F. Kennedy School of Government at Harvard University, specifically the Lunch Group on International Economic Policy. It is therefore not surprising that the thrust of the argument aims at quantifying the main 'wedges' causing locally specific so-called market imperfections and distortions. The result is a problem tree that invites one to specify the variables of the main barriers to 'growth', specifically low levels of private investment and entrepreneurship.

294 A large number of organizations had been involved in the creation of the final report, led by the World Bank and several United Nations agencies, and in coordination with the Government of Sudan and the Sudan People's Liberation Movement. The framework was supposed to guide the Oslo donor conference in April 2005, which led to the creation of the Multi Donor Trust Funds (National & Southern Sudan) based on initial pledges of US$ 500 million.

295 This precludes demining efforts, an essential field of post-war efforts. A short wartime assessment is Moszynski 2001, a more general background is McGrath 2000. Demining activities in South Kordofan were led by the NMAA, DCA and UNMAO, being one of the few successful sectors; the Heiban-Kauda road was one of the first to be demined. UNOCHA reported on 11 June 2011 the presence of new land mines around Kadugli (OCHA 2011).

[296] The Kadugli Vocational Training Centre with six workshops was completed in July 2009; a review lists the project's achievements (PWC 2010: 19).

[297] At the same time the European Union financed a model project for a Kadugli-Talodi road within the framework of the Sudan Productive Capacity Recovery Programme (IFAD 2009c: A6).

[298] During these years, one could observe work on the tarmac road Kadugli-Kauda by the Khartoum-based construction company Eyat; machines used were the roller Hamm 3142, water drilling machines made by Caterpillar (CAT); tractors used for transport were made by Massey Ferguson.

[299] The numbers differ even between the various PWC reports, being recorded as either 396 or 386 or 316.

[300] Paraphrasing of an office conversation, observed January 23rd, 2010, Kadugli.

[301] Food-for-work programmes had already existed under British rule. Owen, for instance, describes how a famine in the Eastern Jebels District in 1941 was answered by relief measures, in the context of which free grain was given to 'the old or infirm', while the able-bodied had to work for their food. In this case, they were digging water pits for their own communities; this also led to some cases of guinea-worm infestation (SAD.414/11/55, Letter of T. R. H. Owen to his mother, October 19th, 1941, Rashad).

[302] Interview with ᶜAz al-Dīn Kuku Man in Abol, May 3rd, 2009.

[303] Interview with Mūsa Ḫamīs & Yussif Tiya in Abol, May 4th, 2009.

[304] According to different residents of Kubang, this name was given to the quarter nearest the road established under the British, and the government Komer trucks went along that road as part of their inspection tour. The eminent *mak* ᶜIdān has also lived there.

[305] According to Wehr's dictionary (Wehr 1985: 113), *bulūk* derives from the Turkish bölük, which was used under Turkish-Egyptian rule to refer to a military company. Today, there is also a Buluk quarter in Juba, which hosts the HQ of South Sudan's police.

[306] Unfortunately, no information was collected concerning the existence of original linguistic terms, as *raʾīs al-grūp* is obviously an Arabic-English expression.

[307] For the construction of a school in Kubang, the *ruʾūs* were delegated to organize each *ḥayy* to appear for working parties and to bring 2000 bricks each. The creation of lists by *ruʾūs* for WFP rations during the months before harvest was observed on May 6th, 2009. Further information is from interviews with *raʾīs* Uṯmān and *qisīs* Brema Kodi, May 6th, 2009, Kubang.

[308] Interview with ᶜIsa Daud in Kubang, March 5th, 2010. This included Abol, with about 400 inhabitants, 'Upper Abol' consisted in this context of the present *ḥayy* Naṣra and the old settlement places LÁLIŊIR and GUDUPÓ. Mer, although multiply linked with Kubang, was counted as a current Atoro settlement, along with Ḥağir Ḥattab, which had been an SAF garrison. However, ᶜIsa brought only general numbers, submitted no documents, and failed to give clear details, which explains the difference between the aggregate sum and the total sum of numbers in the sketch.

[309] Munīr 2006 is a history of this organization.

[310] Interview with Idrīs Raḥḥāl in Kubang, May 9th, 2010. As had happened with the Popular Defence Forces (*al-difāᶜa al-šaᶜabī*) and Komolo, the listing of members in the framework of the Disarmament Demobilization Rehabilitation programme (DDR) seems to have reactivated the idea of membership in the minds of those listed. Through the process of documentation, the structures were renewed and confirmed, and social ties were summarized memorably and in writing.

[311] The clearest example of this are the Native Administration courts.

[312] Interview with Brema Kodi in Kubang, May 6th, 2009.

[313] The role of roads as social spaces cannot be discussed here, but nevertheless also merits consideration. To give an example: Today a new road gives cars better access to Abol, but near the old road there is still a group of big stones, which served in the past as the location for a symbolic moral test. This game, still in practice in the childhood days of today's parent generation, was based on throwing little stones onto the big stones while travelling back home from Heiban to Abol. If a stone stayed on top, the boy or girl was going to be late on the way, which connoted a moral shiftiness (conversation with Guma Kunda Komey in Heiban, April 24th, 2009).

[314] This doesn't always lead to conflicts: The village head of Abol was satisfied with this arrangement, as he felt unable to implement projects like that himself (interview with Budrus Ḥamīs in Abol, May 4th, 2009).

[315] The most reliable maps were the map of the Sudan Survey Department, mostly based on information of the 1930s; further topographic and geological maps were produced in the 1980s (e.g. Hunting Technical Services in 1981), Australian Agricultural Consulting and Management Company made a map atlas for the South Kordofan Agricultural Development Programme in 1992. The following detailed South Kordofan maps have been consulted for this thesis: Topographic Filed Map 1:250,000 km of Nuba Mountains, Centre of Development and Environment, University of Bern, Switzerland, 2005 (used by JMC); Southern Kordofan and Abyei, Transhumance and land use map 1:500,000 km, Threat and Risk Mapping and Analyses, UNDP Khartoum, Sudan, October 2007.

[316] NCA is based in Oslo; its funds are partly provided by the Norwegian Foreign Ministry, partly by UN agencies, while the Protestant Church of Norway is the implementer. Further information about NCA's activities in Heiban are based on interviews with the NCA director for Heiban, Abu ᶜIsa Komey, in Heiban, April 16th, 2008; with the NCA director for South Kordofan, Daud Narrpi, in Kadugli, January 19th, 2010; and with the NCA country director for South Sudan, Tore Torstad, in Khartoum, December 6th, 2009.

[317] Save the Children USA provided the health centre in 2004, complete with a refrigerator, which got broken some time later, and it also contributed three water pumps and relief of food and other items in 2005; then all activities stopped. After the organization's expulsion in 2009, their compound near the mosque was used by the organizational and horticultural bureau of SPLM, and served also as guesthouse for the local administration.

[318] Ngugi et. al. 2010 is a mid-term review of NCA's so-called Integrated Development Programme in the Nuba Mountains.

[319] The Nuba Relief, Rehabilitation, and Development Organization was and is one of the central implementers of South Sudan and East Africa-based development aid and programmes in the Nuba Mountains. In 2009, NRRDO was financed with about 100.000 SDG/year from donors, and by its own income from a chicken farm, leasing of tractors and other devices, and repairs and courses run by its IT expert. The donors included Christian Aid for education programmes, DCA, NCA, and Concern Wordwide for infrastructural programmes (interview with the NRRDO director Jacob Idrīs in Heiban, April 20th & 22nd, 2009).

[320] Observations from fieldwork periods in Heiban and Kadugli; this assessment was also confirmed by Dr. Guma Kunda Komey, a long-term observer of Heiban's political developments.

[321] Conversations in Omdurman and Heiban throughout fieldwork periods in 2008 and 2009.

[322] Interview with Faraḥ in Omdurman, March 28th, 2009.

[323] Interviews with James Adam Kuku in Omdurman, December 1st, 2008, and March 26th, 2009. Own observations in Heiban, April 2009.

[324] This subchapter is based on participant observation from November 2008 to March 2009, but concerns internal information about a project still active in 2012; details and personal names and were therefore

changed. In both perspective and style it is a tribute to Richard Rottenburg's book *Far-fetched facts* (Rottenburg 2009).

325 The Ministry suggested, for instance, the area of Lagawa as an alternative to Abyei, beginning north of Abyei. Sābit interpreted this as fulfilment of the government's obligations from the Civil War, since the specified sites were also settlement areas of the pastoralist Missiriyya, who had served as militias.

326 The database's website is <http://said.mic.gov.sd>, retrieved 25-06-2012.

327 This programme had been initiated by the World Bank in December 2003 as an exercise in financial self-reliance through the Community Empowerment Fund. It was later transformed into the Community Development Fund.

328 The database started as UN Sudan Transition and Recovery Database (Starbase) in June 2003 (<http://reliefweb.int/node/129140>, retrieved 25-06-2012). The database's website <http://www.unsudanig.org> became inactive after UNMIS had finished.

329 The Nuba Mountains Programme Advancing Conflict Transformation (NMPACT) had been formed based on an agreement between the UN Resident Coordinators Office (RCO), HAC (GoS) and SRRC (SPLM) in 2002 and was active throughout the period under JMM/JMC supervision, supported by USAID, the World Bank and others. After the signature of the CPA and the establishment of UNMIS, a Resident Coordinators Office field office was established in May 2005 to coordinate the implementation of recovery according to the CPA and the Joint Assessment Mission (Hockley 2005). An external review of the NMPACT period was published in 2006 (Bradbury & Gamal Eldin 2006), apart from a previous critical appraisal (Pantuliano 2005a, Pantuliano 2005b). The Programme produced also initial assessments of South Kordofan's basic service situation (NMPACT 2002, OUNRHC Sudan 2003) and a table with aggregate data (NMPACT 2005).

330 TRMA were established in frame of a Memo of Understanding with the state governments of South Kordofan, Red Sea, Gedarif, Kassala and Blue Nile.

331 The following information is based on lengthy interviews with ᶜAl al-Dīn Shamūq and Anders Haugland in Khartoum, November 12th, 2008.

332 This division was perpetuated through the organization of the development arena, a crucial point that cannot be discussed here at length. Organizations with a critical impact on service delivery in the SPLM areas, such as NRRDO (PRECISE 2005), Samaritan's Purse, Concern Worldwide and Merci Corps, had difficulties registering under the GoNU system and therefore continued their organizational structure through Nairobi and Juba, especially after the NGO expulsion in 2009 and after the outbreak of the Third Civil War in 2011.
Additionally, Komey 2010: 224 noted that "the war-imposed settlement pattern of boundary-making along ethnic lines in the same locale is being consolidated by certain key peace and development partners, including state institutions, UN agencies, international NGOs, and community-based organizations (CBOs)."

333 The official integration of SPLM administrated areas was celebrated on August 4th, 2008, in Kauda, attended by then Governor ᶜUmar Sulaymān (<http://www.occasionalwitness.com/Articles/20080825.html>, retrieved 25-06-2012). But there were no actual consequences, because the financial situation did not change (see below).

334 The institutional link between the federal and the state Ministries of Finance was the National State Support Fund Board (Klugman & Wee 2008: 29).

335 The new Police Hospital in particular showed the consequences of long-term marginalization: Regarded as remote, backward place, police doctors refused to be transferred to Kadugli, even upon order by their superiors. The hospital remained empty and dysfunctional long after its celebrated inauguration (interview with General Secretary of the Government of South Kordofan, ᶜAbd Allah al-Ṭawm, January 25th, 2010).

[336] The World Bank Public Expenditure Review noted in 2007 that "[f]inancial support to the Three Areas in 2005-2006 was around 35-40 percent below what had been programmed in the JAM. In the 2007 budget, the GNU plans an increase to $249 million, compared to $183 million in 2006 (which is still 32 percent below the amount envisioned under the JAM)" (World Bank 2007: viii). A further report noted in 2008 that "total transfers to South Kordofan have increased significantly over the period", but "it is surprising, given the commitments in the CPA to the Three Areas, that the state's *share* in total transfers has *fallen*" (Klugman & Wee 2008: 37).

[337] In September 2008, the SPLM Finance Minister Aḥmad Saᶜīd ᶜAbd al-Raḥmān was discharged unilaterally by the NCP governor ᶜUmar Sulimān, because he had questioned the state governor's, and thereby the national government's, control over details of budgeting and money flow (<http://www.occasionalwitness.com/Articles/20080930.html>, retrieved 11-04-2012).

[338] A comprehensive overview of UN-related programmes and expenditures was provided in the annual United Nations & Partners Regional Working Plans for Southern Kordofan.

[339] Most reports of larger development organizations either ignore a number of national NGOs and CBOs, or consider them, and thus discuss them, as inhabiting a different category from themselves, mostly as aspects of 'civil society'; this includes a number of associations based on cultural and / or regional identification. In fact, the purely economic output of most initiatives was limited; however, many registered and unregistered organizations fulfilled, rather, functions of social integration. One of the attempts to establish an umbrella organization was NubaNet, which in 2008 combined 150 HAC-registered organizations, and had the cooperation of the Peace Institute at Lancaster University (Judith Large), SIDA, CordAid for Children, and the University of Dilling. However, according to the executive office, only 5 of these could be regarded as active, namely NAFIR, Mandi, Nisā' al-Nūba, al-Mara' fī Manāṭiq al-Nizāᶜ, and Ru'ya, the latter three being related to gender issues. (Interviews with ᶜAbd al-Bāṣiṭ Saᶜīd and Šaᶜarāni Nimayrī Daldūm, November 6th & 29th, 2008) Ru'ya was chaired by Zainab Balandiyya, who received some international attention through her collaboration with Sondra Hale (Noma & Freeman 2010).

[340] The impact on the health care sector in Heiban Locality was documented in Komey & Ille 2010.

[341] The Cotonou Agreement, signed in 2000, is the present legal framework of ACP-EU cooperation, but it is also closely linked to the IMF compensatory package. The general agreement stated only underlying principles, and was followed by country agreements, which consist of minute regulations. The agreement has had several updates, the most recent being 2005 and 2007, financed from the budget of the European Development Fund. "The European Development Fund (EDF) is the main instrument for providing Community aid for development cooperation in the ACP States and OCT. […] It is funded by the Member States, is subject to its own financial rules and is managed by a specific committee. The aid granted to ACP States and OCTs will continue to be funded by the EDF, at least for the period 2008-2013." (<http://europa.eu/legislation_summaries/development/overseas_countries_territories/r12102_en.htm>, retrieved 2 July 2009)

[342] Stabilisation of Export Earnings (STABEX) was introduced with the first Lomé Convention in 1975. "Stabex had been designed to compensate the African, Caribbean and Pacific (ACP) states for shortfalls in the receipts they received for their exports of certain (mainly agricultural) commodities to the European Union. […] In any given year of the Convention, a running average would be taken of a country's receipts for a particular commodity over the previous five years. If the country's receipts from that commodity fell a certain amount below the average, the country concerned could make a claim to Stabex for a transfer of the shortfall […]. In the early years of the Lomé regime this transfer took the form of a transfer of foreign exchange from the EU to the recipient state. The funding could then be used for budgetary support, or projects according to the

preference of the ACP recipient, the only condition being that the EU should be given a report as to how the funding had been used." Many instances of private usage of the funds by country leaders prompted the EU to add a 'framework of mutual obligation' (MFO) in the form of a contract. (Hira & Parfitt 2004: 40). This later developed into the Cotonou Agreement.

343 Interview with Dick Nauta, SPCRP-MP team leader in Khartoum, October 27th, 2009.

344 Reportedly "the Sudan deputy permanent envoy to the European Union, Hamdi Hassabal-Rasoul Osman, met on 23 June with the Director of the Executive Bureau of the Supreme Coordinator of Foreign and Security Policies at the European Union and handed him a message from the Minister of Foreign Affairs" informing him about this decision (<http://www.sudaneseonline.com/en216/publish/Latest_News_1/Sudan_Withdraws_its_Signature_of_ Amendments_in_Cotonou_Agreement.shtml>, retrieved 02-07-2009). Among the reasons stated was the rejection of an article including the principle of combating AIDS through sexual protection and reproductive health, and another article which effectively forced members to join the Rome Statute, i.e. to become a member of the International Criminal Court. The rejection of the latter condition is part of a decisive anti-ICC policy in the Sudan, especially since the indictment of president ᶜUmar Ḥassan al-Bashīr by the ICC.

345 The World Bank Growth Diagnostic notes: "UNDP's Governance Program has undertaken a review of Southern Kordofan's administrative and civil service structure and wage bill, and is advising the state government on civil service integration." (Klugman & Wee 2008: 49). On the project website, the last information on delivery is from 2009 (<www.sd.undp.org/doc/prodocs/dg11%20Local%20Governance%20Capacity%20Building%20Project.pdf>, retrieved 10-03-2011).

346 Guma Kunda Komey has spent the last 20 years writing about this marginalization. The most focused writings about marginalization connected to development planning and spending are Kūmī 1998, Komey 2004, and Komey 2005.

347 COWI A/S assessed in 2006, funded by the World Bank and LICUS, the capacities of localities to participate in the CDF programme. 4 out of 12 targeted localities in South Kordofan (overall 20), were excluded; Abyei and Talodi because of "poor weather conditions" and al-Fula because of a strike, but Heiban, because it had still no locality established (COWI 2007: 11). The report gives also a historical background to local governance legislation in Sudan, from the 1930s to the Local Government Act in 2003, which was – nominally at that time – substituted by CPA-related legislation (COWI 2007: 17-22).

348 The following information, apart from the quoted written sources, result from interviews with IFAD South Kordofan's Programme Director Fatḥi Ismāᶜīl in Kadugli, January 19th, 2010.

349 <http://www.ifad.org/governance/index.htm>, retrieved 29-05-2012.

350 Interviews with Aḥmad ᶜAbd Allah and Muḥammad Ibrāhīm, January 19th, 2010, Kadugli.

351 The criteria listed in the proposal were much more differentiated: "(a) locality population (from the estimates of the Bureau of Statistics in Kadugli); (b) staple grain production per head of locality population (from the Save the Children Fund (SCF) Crop Assessment Survey, 1997/98); (c) economic purchasing power as additional staple grain not produced per head of locality population (from the SCF Crop Assessment Survey, 1997/98); (d) percentage of locality population enrolled in schools (from state Ministry of Education records); (e) number of locality population per operating hand water pump (from state Ministry of Engineering Affairs and UNICEF records); (f) number of locality population per operating locality health facility, including clinics, dispensaries and dressing stations (from state Ministry of Health records); and (g) number of locality population per number of locality technical services staff (from state Ministry of Finance and Economic Planning)" (IFAD 2001: A1).

352 The Dutch government provided in December 2009 a supplementary grant "to expand the outreach of the programme until December 2013" (IFAD 2010: 1). Still an additional grant was proposed for the programme in

December 2010 under Sweden's contribution to the Eighth Replenishment of IFAD's resources, in order "to scale up a central *sanduq* […] called Bara'ah into a licensed rural microfinance institution" (IFAD 2010: 1) in Rashad locality.

[353] There were also 'internal', i.e. lower level reviews, like Shakir 2006. A Master Thesis about the programme's impact on women empowerment is Amin 2006.

[354] The only positive aspect was the promotion of a water governance reform, which led to a new water law giving management rights to rural communities "that contribute to the funding of assets" (IFAD 2009a: 25).

[355] A report of the Country Programme bluntly contradicts this assessment: The results available from the completed North Kordofan Rural Development Project (NKRDP) and the two ongoing projects that have passed their mid-term – the South Kordofan Rural Development Programme and GSLRP – suggest that the country programme has contributed to increased asset ownership, improved food security and higher farm and off-farm incomes" (IFAD 2009b: 7).

[356] Participant observation, April 22nd, 2009, Heiban.

[357] The following chapter is based on observations and interviews in IFAD Kadugli and Heiban from January to March 2010.

[358] The technical definition in the original plan had 7 selection criteria; the selection was supposed to done by an annually appointed Community Selection Committee through studies and ranking by Locality Extension Teams (IFAD 2001: A2-A3). A detailed review of the planned selection process is Harizi & Klemick 2007.

[359] Interview with Nūr al-Dīn, IFAD Heiban, January 31st, 2010, Heiban. The microfinance project in Rashad was one of the initiatives regarded as a success by IFAD; a supplementary grant for extension was recommended in 2010 (IFAD 2010).

[360] Interview with Sara Adam Kuku, May 1st, 2009, Heiban.

[361] Interview with Amna Ushaya in Kubang, March 7th, 2010.

[362] Interview with Mary James in Kadugli, January 23rd, 2010, and with Barnāba Majīd in Heiban, January 28th, 2010.

[363] The teacher, Hadi, herself complained of a resigned attitude among the 'local people'. She refused explanations such as insecurity and war experiences, referring to her work in Rwanda and especially the DR Congo, where people had suffered no less, but responded much more to her workshops (own observation and personal communication, April 16th, 2008).

[364] Interview with Kamāl Yussif, February 18th, 2008.

[365] Personal communication of Hannie Halma, April 15th & 16th, 2008, and personal observations.

[366] Casas et. al. 1999 specifies and supports this development of the Agricultural Research Corporation (since 1967, before Agricultural Research Division). It notes not only a strong 'brain drain' during the 1990s because of low salaries (Casas et. al. 1999: 129), but also an uneven territorial distribution of researchers: "80 and 61 senior researchers are concentrated in Gezira Research Station and the Khartoum units, respectively, while the remaining are thinly spread over 18 other research stations […] mostly located in the rainfed regions which are the poorest of the country and do not have the critical mass for meeting the regional AR needs. Some efforts have been undertaken for insuring a better territorial distribution of the staff, but conditions of life and work in remore areas are not attractive." (Casas et. al. 1999: 129).

[367] Interview with Aḥmad al-Shafīᶜ, January 19th, 2010, Kadugli.

[368] Interview with Nūr al-Dīn and ᶜAbd al-Salām, January 31st, 2010, Heiban.

[369] Interview with Maḥǧūb, May 4th, 2009, Abol.

[370] Interview with Mubārak Faḍul, February 6th, 2010, Abol.

[371] Participant observation, IFAD Heiban, February 3rd, 2010, Abol, Mer.

[372] Interview with Zakariyya Uṯmān, March 12th, 2010, Heiban.

[373] Own observation, January 25th, 2010, Kadugli.

[374] My preference for the term 'perspective' corresponds also with Pieterse, who diagnosed that "[t]he current array of perspectives in the development field represents a dispersal of stakeholders and interest positions which is likely to stay" (Pieterse 2010: 182-183).

[375] While the economic strategies in agricultural production have been thoroughly discussed, the analysis of decision-making processes has often concentrated either on a presumed rational approach to the natural forces supporting and inhibiting the production of 'good' harvests, or else claimed the absence of or flaws in such an approach. Although this aspect is also relevant for the line of thought followed here, there are further elements, which concern the actions of the farmers I have focused on here: operational routine, belief systems, (mis)trust and risk-taking, hope and despair, aesthetics, and creativity.

[376] These studies had two basic, inter-connected focus points; one the politics of relief during the 1980s famine, another around politics of relief during the civil war (e.g. Waal 1989, Duffield 1990, Deng & Minear 1992, Karim et. al. 1996, Waal 1997, Duffield 2002). Further studies concerned the consequences of export orientation for the domestic food availability (e.g. Oesterdiekhoff & Wohlmuth 1983, O'Brien 1985, Ali 1989, Duffield 1990). An important field, especially for South Kordofan, is the expansion of mechanized farms and the political implications of this (e.g. Battahani 1980, Saeed 1980, Hassan 1988, Bascom 1990, Abdelgabar 1997, Saavedra 1998, Ijaimi 2006, Battahani 2009, Komey 2010a). Some publications have tried to summarize the early political experiences of relief through NMPACT (Pantuliano 2005a, Pantuliano 2005b) and the recommendations to WFP to coordinate an 'integrated response' (Matus 2007).

[377] In his last interview with Paul Rabinow, in May 1984, Foucault said that "it is a question of a movement of critical analysis in which one tries to see how the different solutions to a problem have been constructed; but also how these different solutions result from a specific form of problemization. And it then appears that any new solution that might be added to the others would arise from current problemization, modifying only several of the postulates or principles on which one bases the responses that one gives" (Foucault 1984: 389-390).

[378] A different way to put it is "that global patterning arises solely out of the interaction between locally acting agents, which form the global pattern, and are formed by it at the same time" (Mowles 2010: 767).

[379] This is related to Bourdieu's concepts of habitus and symbolic capital (Bourdieu 1972/2000), but is also an attempt to add the point of difficulty of change through development interventions, which require the presence of the very qualities they try to create: skills and knowledge.

[380] Durkheim famously claimed that "division of labour" is "a source of social cohesion. Not only does it cause individuals to be solidly linked to one another […], because it limits the activity of each one, but also because it increases that activity" (Durkheim 1933/1984: 328).

[381] The still most impressive account of these extractive dynamics is Bayart 1989/2009, who formulated that "[i]t is impossible to abstract the ideology or technology of 'development' from the exploitation of which it is the vector" (Bayart 1989/2009: 61).

[382] This links also to the term 'anticipation' as used in Bloch's *Prinzip Hoffnung* (Bloch 1959/1976). Bloch subsumed under 'anticipation' all Drang, urge, wish, desire, and need towards the future, and was thus able to draw together a huge field of expressed (and suppressed) human longing. Although this work includes a part on 'technical utopias', the discussion of concrete anticipated technologies remains on the level of overall principles. Nevertheless, these technologies are at the very heart of the development field.

[383] Concern Worldwide experimented with this conceptual 'mapping' in relation to both working partnerships with communities (O'Sullivan 2010) and bottom-up accountability (Jacobs & Wilford 2010). Another organization mentioned in the case studies, IFAD, developed so-called community-driven development decision tools (Manssouri & Sparacino 2009).

[384] The terminology underlying this distinction is not shared here, as academic work is as much a result of practices as, for instance, the work of an NGO accountant. But these categories, as has been shown in the inception report case study, are actively used in development cooperation.

[385] The terminology 'communities of practice' is also widespread in development organizations (Hearn & White 2009, Anyidoho 2010), among them FAO, which hosts (!), for instance, a community of practice on conservation agriculture. In a later article, Wenger distinguished communities of practice from project teams, the former being voluntary groups based on the shared interest of developing skills and knowledge, while the latter are chosen by managers to fulfil a specific task for a pre-assigned time period (Wenger & Snyder 2000: 142).

[386] Such dissolution is not only of conceptual interest. Its urgency is underlined by the way in which the dichotomy of developed / underdeveloped has been discussed under Koselleck's term of "asymmetrical counterconcepts" as a continuation, if only partial, of the civilized / barbarous dichotomy (Lepenies 2008), and the exploitative systems legitimized through it.

[387] A similar, and explicitly mentioned line has been followed by Bierschenk, Chauveau and Sardan through the concept of *courtiers* (Bierschenk et. al. 2000), which operates without the term 'translation' and its conceptual bases. In general, this might be regarded as a variation of the figure of the demiurge, the trickster, a mediator between the human and divine worlds, a duality that reappears here, though with a somewhat reduced asymmetry, which nevertheless remains and is criticized as inequality. Another possible reference point is that of *homo manipulator* – social mediators and manipulators in networks of distribution, which Jeremy Boissevain identified in his study of rural Malta (Boissevain 1974).

[388] Ferguson wrote: "A 'development' project may very well serve power, but in a different way than any of the 'powerful' actors imagined; it may only wind up, in the end, 'turning out' to serve power" (Ferguson 1990/2002: 400).

[389] "Any aggregate of events or objects […] shall be said to contain "redundancy" or "pattern" if the aggregate can be divided in any way by a "slash mark," such that an observer perceiving only what is on one side of the slash mark can *guess*, with better than random success, what is on the other side of the slash mark. We may say that what is on one side of the slash contains *information* or has *meaning* about what is on the other side" (Bateson 1972: 130-131).

[390] This example might seem to come from nowhere, but it connects three 'references' that are important to me: 1) Schatzki, who used cooking as an example to explain his concept of 'practices'; 2) Rottenburg, whose writings about water supply development projects inspired my conceptual work; and 3) the people of Heiban, Abol, and Kubang, for whom this change is *indeed* a complex matter of concern.

[391] A case in point was IFAD's new director for Heiban and his promise of a new period of cooperation. He reminded me of this account of initial attempts to conduct a hygiene reform in 19th century Khartoum: "A new governor, upon arrival to take his post in the Sudan, would exhibit a spasmodic energy for general and sanitary reform. Attended by soldiers, he would ride through Khartoum, ordering the streets to be swept and the town to be thoroughly cleansed. […] In a few weeks time, however, the town would revert to its old situation, when streets would never be swept and filth would once again accumulate" (Bayoumi 1980/2002: 82).

References

Abdalla, Osman A. E. 2009. Groundwater recharge/discharge in semi-arid regions interpreted from isotope and chloride concentrations in north White Nile Rift, Sudan. *Hydrogeology Journal* 17, 679-692.

Abdelgabar, Omer. 1997. *Mechanized farming and Nuba peasants. An example for non-sustainable development in the Sudan*. Hamburg: Lit.

Abdelhay, Ashraf Kamal. 2010. The politics of writing tribal identities in the Sudan. The case of the colonial Nuba policy. *Journal of Multilingual and Multicultural Development* 31 (2), 201-213.

Abdelrahman, Ali H., & Cathy Smith. 1996. Cooperatives and agricultural development. A case study of groundnut farmers in Western Sudan. *Community Development Journal* 31 (1), 13-19.

Abdul-Jalil, Musa Adam. 1998. The response of pastoral nomads to changing environmental conditions: the case of Meseiriya Humur of South Western Kordofan. In *Current studies on the Sudan*, edited by Medani Mohamed M. Ahmed. Khartoum: Center for Sudanese Studies, Omdurman Ahlia University, 194-233.

Abdul-Jalil, Musa Adam, & Siddig Umbadda Rabih. 1986. Problems and prospects of horticulture in a subsistence economy: the case of Wadi Kutum (Northern Darfur). In *Perspectives on development in the Sudan*, edited by Paul van der Wel & Abdel Ghaffar Muhammad Ahmed. The Hague: Institute of Social Science, 339-371.

Abu Saq, M. O. 2003. Background to the politics of the Nuba Mountains. *Sudan Intelligence Review* 3 (1/2), 2-8.

Adam, Abdelmajid A., Mohamed Ahmed H. Eltayeb, & Omar B. Ibrahim. 2010. Uranium recovery from Uro area phosphate ore, Nuba Mountains, Sudan. *Arabian Journal of Chemistry*. DOI: 10.1016/j.arajc.2010.12.017.

Adam, Abdelmajid A., & Mohamed Ahmed H. Eltayeb. 2012. Multivariate statistical analysis of radioactive variables in two phosphate ores from Sudan. *Journal of Environmental Radioactivity* 107, 23-43.

Adam, Muḥammad ᶜAbd al-Qādir Muḥammad. 2009. Al-ṣirāᶜāt ḥawla al-mawārid al-ṭabīᶜiyya: al-asbāb wa al-‘aṯār wa al-natā’ğ bi-maḥaliyyatay al-dillinğ wa al-rašād, wilāyat ğanūb kurdufān, al-sūdān. Unpublished PhD thesis. Khartoum: University of Khartoum.

Adams, Douglas. 2002. *The Ultimate Hitchhiker's Guide to the Galaxy*. New York: Ballantine Books.

Ahmed, Abdel Ghaffar M., and Leif Manger (eds.). 2006. *Understanding the crisis in Darfur. Listening to Sudanese voices*. Bergen: Centre for Development Studies, University of Bergen.

Ahmed, Abdel Ghaffar M. 2007. *Sudanese trade in black ivory: Opening old wounds*, *Occasional Paper No. 31*. Cape Town: Centre for Advances Studies of African Society.

Ahmed, El Amin El Awad Haj. 1982. The impact of improved rural water supply on peasant farmers and nomads in Eastern Kordofan District. Unpublished MA thesis. Khartoum: University of Khartoum.

Ahmed, El Awad Awad El Seed. 1983. Traditional agriculture in the northern district of South Kordofan province. In *Socio-economic change in the Sudan*, edited by Mohamed Hashim Awad. Khartoum: Graduate College, 39-66.

Ahmed, F., A. S. Andrawis, and Y. A. Hagaz. 1984. Landsat model for groundwater exploration in Nuba Mountains, Sudan. *Advances in Space Research* 4 (11), 123-131.

Akrich, Madeleine. 1992. The de-scription of technical objects. In *Shaping technology / building society. Studies in sociotechnical change*, edited by Wiebe E. Bijker and John Law. Cambridge: MIT, 205-224.

Alden Wily, Liz. 2010. Making peace impossible? Failure to honour the land obligations of the Comprehensive Peace Agreement in central Sudan. A resource paper. Unpublished manuscript.

Ali, Taisier Mohamed Ahmed. 1989. *The cultivation of hunger. State and agriculture in Sudan*. Khartoum: Khartoum University Press.

Allmendinger, Phil, and Michael Gunder. 2005. Applying Lacanian insight and a dash of Derridean deconstruction to planning's 'dark side'. *Planning Theory* 4 (1), 87-112.

Amin, Egbal El. 2006. The Role of SKRDP in women empowerment with focus on technical efficiency of agricultural production. M.Sc. thesis submitted to the University of Kordofan, Faculty of Natural Resources and Environmental Studies, Department of Agricultural Economics.

Amin, Samir. 1973/1976. *Unequal development. An essay on the social formations of peripheral capitalism*, *Marxist Theory and Contemporary Capitalism Series*. Hassocks: The Harvester Press.

Andilla, Muḥammad Kunda. 2002. *Ta'rīḫ al-nūba al-ᶜaẓīm baᶜd al-ṭawfān wa ila al-'ān wa 'aṯar al-ṯaqāfa al'islāmiyya ᶜalayha.* Private publisher.

Anyidoho, Nana Akua. 2010. 'Communities of practice': prospects for theory and action in participatory development. *Development in Practice* 20 (3), 318-328.

Axelrod, Robert. 1984. *The evolution of cooperation*. New York: Basic Books.

Bardeleben, Manfred (ed.). 1973. *The cooperative system in the Sudan : development, characteristics and importance in the socio-economic development process* München: Weltforum-Verlag.

Barth, Fredrik. 1967. Economic spheres in Darfur. In *Themes in Economic Anthropology*, edited by Raymund Firth. London: Tavistock Publications, 149-174.

Bascom, Johnathan B. 1990. Food, wages, and profits: mechanized schemes and the Sudanese state. *Economic Geography* 66 (2), 140-155.

Bateson, Gregory. 1972. *Steps to an ecology of mind*. New York: Balantine Books.

Battahani, Atta el Hassan el. 1980. The state and the agrarian question: a case-study of South Kordofan 1971-1977. Thesis submitted for partial fulfilment for the requirements of M. Sc. degree in Political Science, Department of Political Science, Faculty of Economic and Social Studies, University of Khartoum, Khartoum.

Battahani, Atta el Hassan el. 1983. A strategy for the modernisation of traditional agriculture in Southern Kordofan. In *Socio-economic change in the Sudan*, edited by Mohamed Hashim Awad. Khartoum: Graduate College, 67-79.

Battahani, Atta el Hassan el. 1986. *Nationalism and peasant politics in the Nuba Mountains region of Sudan, 1924-1966*. Brighton: University of Sussex.

Battahani, Atta el Hassan el. 1998. On the transformation of ethnic-national policies in the Sudan: the case of the Nuba people. *Sudan Notes and Records* 2, 99-116.

Battahani, Atta el Hassan el. 2009. *Nationalism and peasant politics in the Nuba Mountains region of Sudan, 1924-1966*. Khartoum: Khartoum University Press.

Baumann, Gerd. 1982. Some notes on rural development in the Nuba Mountains (Sudan). *Journal of Research on North East Africa* 1 (2), 85-94.

Baumann, Gerd. 1984. Development as a historical process: a social and cultural history of development in a Nuba Mountains community. *Anthropos* 79, 459-471.

Baumann, Gerd. 1987. *National integration and local integrity: the Miri of the Nuba Mountains in the Sudan*. Oxford: Clarendon Press.

Bayart, Jean-François. 1989/2009. *The state in Africa. The politics of the belly.* Cambridge & Malden: Polity Press.

Bayoumi, Ahmed. 1980/2002. *Medical care in the Sudan* 1820-1970. *I. Health care system*. Khartoum: Khartoum University Press.

Bedigian, Dorothea, & Jack R. Harlan. 1983. Nuba agriculture and ethnobotany, with particular reference to sesame and sorghum. *Economic Botany* 37 (4), 384-395.

Bello Tendel, Abdelrahman. 2012. Periodic Markets and Nomadic-Sedentary Relations in the Nuba Mountains: a case study of Abu Gubeiha Locality. Thesis submitted for partial fulfilment for the requirements of M. Sc. degree in Geography, Department of Geography, University of Juba, Juba.

Berger, John. 1979-1990/1992. *Into their labours: Pig earth, Once in Europa, Lilac and flag. A trilogy*. New York: Pantheon Books.

Biersack, Aletta. 2006. Reimagining political ecology: culture/power/history/nature. In *Reimagining political ecology*, edited by Aletta Biersack and James B. Greenberg. Durham & London: Duke University Press, 3-40.

Bierschenk, Thomas, Jean-Pierre Chauveau, & Jean-Pierre Olivier de Sardan. 2000. *Courtiers en développement : les villages africains en quête de projets*. Paris & Mainz: Association Euro-Africaine pour l'Anthropologie du Changement Social et du Développement.

Bicciato, F. & P. Faggi. 1995. Gezira scheme between state and market: Some remarks on the privatization of irrigation in Sudan. *GeoJournal* 37, 101-104.

Blau, Peter M., & W. Richard Scott. 1963. *Formal organizations. A comparative approach*. London: Routledge & Kegan Paul.

Bloch, Ernst. 1959/1976-1978. *Das Prinzip Hoffnung*. Frankfurt am Main: Suhrkamp.

Boissevain, Jeremy. 1974. *Friends of friends. Networks, manipulators and coalitions*. Oxford: Blackwell.

Bourdieu, Pierre. 1972/2000. *Esquisse d'une théorie de la pratique. Précédé de trois études d'éthnologie kabyle*. Paris: Éditions du Seuil.

Bourdieu, Pierre. 1985. The social space and the genesis of groups. *Theory and Society* 14 (6), 723-744.

Bradbury, Mark, & Ahmed Gamal Eldin. 2006. Evaluation of the Nuba Mountains Programme Advancing Conflict Transformation (NMPACT). Unpublished report.

Bridel, Jacqueline. 2003. *Study of Indigenous Plants and Non-Timber Products as Related to Traditional Medicine in the Nuba Mountains and Southern Blue Nile Region of South Sudan*. Washington: USAID-USDA PASA & International Agriculture Programs, University of Missouri.

Brinkmann, Klaus, Axel Höhndorf, Hans Kreuzer, Heinz Lenz, & Lothar Steiner. 1994. *Precambrian history of the Eastern Nuba Mountains, Central Sudan*. Hannover: Bundesanstalt für Geowissenschaften und Rohstoffe und die Geologischen Landesämter in der Bundesrepublik Deutschland.

Brun, Cathrine, & Ragnhild Lund. 2010. Real-time research: decolonising research practices - or just another spectacle of researcher-practitioner collaboration? *Development in Practice* 20 (7), 812-826.

Brundtland Commission. 1987. *Our common future*. Oxford et. al.: Oxford University Press.

Burawoy, Michael. 1998. The extended case method. *Sociological Theory* 16 (1), 4-33.

Callon, Michel, and Bruno Latour. 1981. Unscrewing the big Leviathan: How actors macro-structure reality and how sociologists help them to do so. In *Advances in social theory and methodology: toward an integration of micro- and macro-sociologies*, edited by Karin D. Knorr-Cetina and Aaron Victor Cicourel. Boston et. al.: Routledge & Kegan Paul, 277-303.

Carr, Edward R. 2010. The place of stories in development: creating spaces for participation through narrative analysis. *Development in Practice* 20 (2), 219-226.

Casas, J., M. B. Solh & H. Hafez. 1999. *NARS in the WANA region. An overview and a cross-country analysis.* Cairo & Giza: ICARDA & Agricultural Research Center.

Castiglioni, Angelo, & Alfredo Castiglioni. 1977. *Adams schwarze Kinder. Bei den letzten Naturvölkern Afrikas*. Zürich: Schweizer Verlagshaus.

Chambers, Robert. 1983. *Rural development. Putting the last first*. Harlow: Longman Group Limited.

Chapman, Corry. 2008. Always on call. *The Lancet* 372, 2162-2163.

Chavunduka, Charles, & Daniel W. Bromley. 2011. Climate, carbon, civil war and flexible boundaries: Sudan's contested landscape. *Land Use Policy* 28, 907-916.

Clarke, Adele E. 2005. *Situational analysis. Grounded theory after the postmodern turn*. Thousand Oaks et. al.: Sage Publications.

Collins, Robert O. 1992. The Nilotic slave trade: past and present. In *The human commodity: perspectives on the trans-Saharan slave trade*, edited by Elizabeth Savage. London: Frank Cass, 140-161.

Collins, Robert O., & Millard Burr. 2008. *Darfur. The long road to disaster*. Princeton: Markus Wiener Publishers.

Colvin, R. C. 1939. *Agricultural survey of Nuba Mountains*. Khartoum: McCorquodale.

Concern Worldwide. 2005. Approaches to Disaster Risk Reduction. Emergency Unit, Concern Worldwide.

Concern Worldwide U.S. 2011. *Africa Report 2010*. New York, Chicago: Concern Worldwide U.S.

Corbett, Justin. 2011. *Learning from the Nuba: Civilian resilience and self-protection during conflict*. Local to Global Protection.

Cornish, Laura, & Alison Dunn. 2009. Creating knowledge for action: the case for participatory communication in research. *Development in Practice* 19 (4), 665-677.

Cornwall, Andrea, & Deborah Eade. 2010. *Deconstructing Development Discourse. Buzzwords and Fuzzwords*. Warwickshire & Oxford: Practical Action Publishing & Oxfam GB.

Cotula, Lorenzo, Sonja Vermeulen, Rebec Leonard, & James Keeley. 2009. *Land grab or development opportunity? Agricultural investment and international land deals in Africa*. London & Rome: IIED, FAO & IFAD.

Council of Ministers. 2008. *Agricultural Revival Programme 2008-2012*. Khartoum & Juba: Government of National Unity.

COWI. 2007. *Assessment of Localities' Compliance with Minimum Qualifying Criteria and Identification of their Capacity Needs in Northern Sudan. Synthesis Report (Final)*. Washington: The World Bank/LICUS.

Cox, Kevin R., & Rohit Negi. 2010. The state and the question of development in sub-Saharan Africa. *Review of African Political Economy* 37 (123), 71-85

Cozzens, Susan E., Sonia Gatchair, Kyung-Sup Kim, Gonzalo Ordónez, & Anupir Suprithadnaporn. 2008. Knowledge and development. In *The handbook of science and technology studies*, edited by Edward J. Hackett, Olga Amsterdamska, Michael Lynch and Judy Wajcman. Cambridge: MIT Press, 787-811.

Crevatin, Franco. 1994. Darsi un nome in terra *tira* (Kordofan; Sudan). *Incontri Linguistici* 17, 137-141.

Czarniawska, Barbara, & Guje Sevón (eds.). 1996. *Translating organizational change*. (De Gruyter Studies in Organization). Berlin & New York: Walter de Gruyter.

Czarniawska, Barbara, & Guje Sevón (eds.). 2005. *Global Ideas: How Ideas, Objects and Practices Travel in the Global Economy.* (Advances in organization studies ; 13). Malmö: Liber.

Dabitz, Günter. 1985. *Geschichte der Erforschung der Nuba-Berge.* (Arbeiten aus dem Seminar für Völkerkunde der Johann-Wolfgang-Goethe-Universität Frankfurt am Main; 17). Stuttgart: Franz Steiner.

Dagdeviren, Hulya. 2006. Revisiting privatization in the context of poverty alleviation. The case of Sudan. *Journal of International Development* 18 (4), 469-488.

Dawrah, ᶜAbd al-Qādir Muḥammad ᶜAbd al-Qādir. 2003. *Al-wisāda li-tā'rīẖ mamlika taqalī al-'islāmiyya*. Al-Ḫarṭūm: Sūlū Lil-Ṭibāᶜa.

Deng, Francis M., & Larry Minear. 1992. *The Challenges of Famine Relief. Emergency Operations in the Sudan*. Washington: The Brookings Institution.

Develtere, Patrick, & Tom De Bruyn. 2009. The emergence of a fourth pillar in development aid. *Development in Practice* 19 (7), 912-922.

Dill, Harald G., Klaus Busch, & Norbert Blum. 1991. Chemistry and origin of vein-like phosphate mineralization, Nuba Mountains (Sudan). *Ore Geology Reviews* 6, 9-24.

Dirar, Hamid A. 1993. *The indigeneous fermented food of the Sudan*. Wallingford: CAB International.

Duffield, Mark. 1990. Absolute distress. Structural causes of hunger in Sudan. *Middle East Report* (September-October), 4-11.

Duffield, Mark. 2002. Aid and Complicity: The Case of War-Displaced Southerners in the Northern Sudan. *The Journal of Modern African Studies* 40 (1), 83-104.

Durkheim, Emile. 1933/1984. *The division of labor in society*. New York: The Free Press.

Elagib, Nadir Ahmed, & Muna M. Elhag. 2011. Major climate indicators of ongoing drought in Sudan. *Journal of Hydrology* 409, 612-625.

Elamin, Eltighani M. Hamid Musa, & Ismail Er Rahil. 2009. *Reconciling the trade-offs between domestic demand and export market. The case of Sudan dry-land agriculture*. Cairo: Economic Research Forum.

Elgubshawi, Abdelmoneim A. I. 2008. Soil degradation. Its aspects and modelling a case study of northeast Nuba Mountain, South Kordofan state, Sudan. Dissertation zur Erlangung des akademischen Grades Doctor rerum naturalium, Fakultät Forst-, Geo- und Hydrowissenschaften, Technische Universität, Dresden.

Elhiraika, Adam B., and Sayed A. Ahmed. 1998. *Agricultural credit under economic liberalization and Islamization in Sudan.* (AERC Research Paper 79). Nairobi: African Economic Research Consortium.

Elnur, Ibrahim (ed.). 2009. *Contested Sudan. The political economy of war and reconstruction.* London: Routledge.

Elsayed, Ghefari Fadlallah. 2005. The politics of difference and boundary making among the Nuba and the Baggara of Southern Kordofan State, Sudan. Thesis submitted in partial fulfilment of the requirements for the degree of M. Phil. in Anthropology of Development, Department of Social Anthropology, University of Bergen, Bergen.

Eltahir, Elfatih A. B. 1992. Drought frequency analysis of annual rainfall series in central and western Sudan. *Hydrological Sciences Journal* 37 (3), 185-199.

Escobar, Arturo. 1995. *Encountering development. The making and unmaking of the third world*, *Princeton studies in culture/power/history*. Princeton & Chichester: Princeton University Press.

Escobar, Arturo. 2008. Development, trans/modernities, and the politics of theory. *Focaal* 52, 127-135.

EU. 2004. *Aid delivery methods. Volume 1: Project Cycle Management guidelines*. Brussels: EuropeAid Cooperation Office, Development DG, European Commission.

Ewald, Janet J. 1990. *Soldiers, traders, and slaves: state formation and economic transformation in the Greater Nile Valley, 1700-1885*. Madison: University of Wisconsin Press.

FAO & Doxiadis. 1964. Land and water use survey in Kordofan Province of the Republic of the Sudan - First report on hafir hydrology - Hydrological year 1963-1964. cf /61696.

FAO & Doxiadis. 1965. Land and water use survey in Kordofan Province of the Republic of the Sudan - Rainy seasons diagrams. cf/61696.

FAO & Doxiadis. 1965. Land and water use survey in Kordofan Province of the Republic of the Sudan - Second report on rainy season diagrams. cf061696.

FAO & Doxiadis. 1965. Land and water use survey in Kordofan Province of the Republic of the Sudan - General hydrometric records for the 1962-1965 hydrological years from April 1962 through March 1965. cf /61696.

FAO & Doxiadis. 1966. Land and water use survey in Kordofan Province of the Republic of the Sudan - Vol 1, general report. cf /61696.

FAO & Doxiadis. 1966. Land and water use survey in Kordofan Province of the Republic of the Sudan - Hydronomic investigations - Concluding report on water availability and recommendations. cf /61696.

FAO & Doxiadis. 1966. Land and water use survey in Kordofan Province of the Republic of the Sudan - Third and concluding report on hafir hydrology - Compilation of the data collected and recommendations. cf /61696.

FAO. 2008. *An international technical workshop. Investing in sustainable crop intensification: The case for improving soil health*, *Integrated Crop Management Vol. 6*. Rome: Plant Production and Protection Division, Food and Agriculture Organization of the United Nations.

FAO, & UNIDO. 2008. *Agricultural mechanization in Africa... Time for action. Planning investment for enhanced agricultural productivity. Report of an Expert Group Meeting, January 2008, Vienna, Austria*. Rome & Vienna: Food and Agriculture Organization & United Nations Industrial Development Organization.

FAO. 2010. *The State of Food Insecurity in the World. Addressing food insecurity in protracted crises*. Rome: Food and Agriculture Organization of the United Nations.

FAO. 2011. *Save and grow. A policymaker's guide to the sustainable intensification of smallholder crop production*. Rome: Food and Agriculture Organiyation of the United Nations.

Faris, James C. 1973. Pax britannica and the Sudan: S. F. Nadel. In *Anthropology and the colonial encounter*, edited by T. Asad. Reading: Ithaca Press, 153-170.

Faris, James C. 1989. *Southeast Nuba social relations*. Aachen: Alano, Ed. Herodot.

Faubion, James D. & George E. Marcus. 2009. *Fieldwork is not what it used to be. Learning Anthropology's Method in a Time of Transition*. Ithaca & London: Cornell University Press.

Ferguson, James. 1990/2002. The anti-politics machine. In *The anthropology of politics: a reader in ethnography, theory and critique*, edited by Joan Vincent. Malden: Blackwell Publishers, 399-408.

Ferguson, James. 2006. *Global shadows: Africa in the neoliberal world order*. Durham: Duke University Press.

Fforde, Adam. 2010. Responses to the 'policy science' problem: reflections on the politics of development. *Development in Practice* 20 (2), 188-204.

Fihail, Ismail Ali El-. 1988. The impact of rural-urban migration on the processes of identification among the Miri ethnic group, Kulturwissenschaftliche Fakultät, University of Bayreuth, Bayreuth.

Flint, Julie & Alex de Waal. 2005. *Darfur: A short history of a long war*. London: Zed Books.

Forss, Kim, & Sara Bandstein. 2008. *Evidence-based evaluation of development cooperation: Possible? Feasible? Desirable?* (NONIE Working Paper No. 8). Network of Networks on Impact Evaluation.

Foucault, Michel. 1972/2002. *The archaeology of knowledge*. London: Routledge.

Foucault, Michel. 1984. Polemics, politics, and problemizations. An interview with Michel Foucault. In *The Foucault reader*, edited by Paul Rabinow. New York: Pantheon Books.

Frediani, Alexandre Apsan. 2010. Sen's Capability Approach as a framework to the practice of development. *Development in Practice* 20 (2), 173-187.

Geertz, Clifford. 1973. *The interpretation of cultures. Selected essays*. New York: Basic Books.

Gillan, J. A. 1931. Some aspects of Nuba administration. *Sudan Government Memoranda No. 1*.

Girod, Bastien, Arnim Wiek, Harald Mieg & Mike Hulme. 2009. The evolution of the IPCC's emissions scenarios. *Environmental Science & Policy* 12 (2), 103-188.

Gluckman, Max. 1963. *Order and rebellion in tribal Africa. Collected essays with an autobiographical introduction*. London: Cohen & West.

Goenster, Sven, Martin Wiehle, Martina Predotova, Jens Gebauer, Abdalla Mohamed Ali & Andreas Buerkert. 2011. Gaseous emissions from high and low input homegardens of the Nuba Mountains, Central Sudan. Paper presented at the Tropentag "Development on the margin", October 5-7, Bonn.

Goenster, Sven, Martin Wiehle, Martina Predotova, Jens Gebauer, Abdalla Mohamed Ali & Andreas Buerkert. 2012. Partial horizontal carbon and nutrient balances in homegardens of the Nuba Mountains, Sudan. Paper presented at the Tropentag "Resilience of agricultural systems against crises", September 19-21, Göttingen – Kassel/Witzenhausen.

Goodman, Nelson. 1954/1983. *Fact, fiction, and forecast*. Cambridge & London: Harvard University Press.

Government of National Unity & World Bank. 2006. MDTF grant of US$ 48.50 million to the Government of Sudan for a National Emergency Transport Rehabilitation Project. Final Project Proposal.

Government of Sudan. 2003a. *Sudan's First National Communications under the United Nations Framework Convention on Climate Change. Volume I: Main Communications*. Khartoum: Higher Council for Environment and Natural Resources, Ministry of Environment & Physical Development, Republic of the Sudan.

Government of Sudan. 2003b. *Sudan's First National Communications under the United Nations Framework Convention on Climate Change. Volume II: Appendix*. Khartoum: Higher Council for Environment and Natural Resources, Ministry of Environment & Physical Development, Republic of the Sudan.

Grabher, Gernot & Oliver Ibert. 2011. Project ecologies. A contextual view on temporary organizations. In *The Oxford handbook of project management*, edited by Peter W. G. Morris, Jeffrey K. Pinto & Jonas Söderlund. Oxford et. al.: Oxford University Press, 175-198.

GTZ. 1996. *Project Cycle Management (PCM) and Objectives-Oriented Project Planning (ZOPP). Guidelines*. Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit.

GTZ. 1997. *ZOPP. Objectives-oriented Project Planning. A planning guide for new and ongoing projects and programmes*. Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit.

Gunder, Michael, and Clare Mouat. 2002. Symbolic violence and victimization in planning processes. A reconnoitre of the New Zealand resource management act. *Planning Theory* 1 (2), 124-145.

Gunder, Michael. 2003. Passionate planning for the others' desire: an agonistic response to the dark side of planning. *Progress in Planning* 60, 235-319.

Gupta, Akhil, & James Ferguson. 1997. Discipline and practice: 'The field' as site, method, and location in anthropology. In *Anthropological locations: Boundaries and grounds of a field science*, edited by Akhil Gupta and James Ferguson. Berkeley / Los Angeles: University of California Press, 1-46.

Habermann, Birgit, & Margarita Langthaler. 2010. Changing the world of development research? An insight into theory and practice. *Development in Practice* 20 (7), 771-783.

Hällgren, Markus, & Anders Söderholm. 2011. Projects-as-practice: New approach, new insights. In *The Oxford handbook of project management*, edited by Peter W. G. Morris, Jeffrey K. Pinto & Jonas Söderlund. Oxford et. al.: Oxford University Press, 500-518.

Harizi, Khalid El-, & Heather Klemick. 2007. *Measuring and accounting for community capabilities in Kordofan, Sudan*. (IFPRI Discussion Paper 00730). Washington: International Food Policy Research Institute.

Ḥassab Allah, ᶜIsa Muḥammad. 1998. *Tā'rīḫ ǧibāl al-nūba al-'iǧtimāᶜī wa al-siyāsī fī qarn 1885-1985*. Al-Ḫarṭūm: Nizār al-Nūr ᶜAlī Sulaymān.

Hassan, Jamila. 2009. *Conflict and livelihoods in the Nuba Mountains of Sudan. Anticipated and unanticipated impacts*. Saarbrücken: VDM Verlag Dr. Müller.

Hassan, Samiyya Ṣāliḥ Aḥmad. 1988. The viability of small scale family farming vis-à-vis large scale tractorized farming: The case of Southern Kordofan Province. Unpublished MSc thesis. Khartoum: University of Khartoum.

Hausmann, Ricardo, Dani Rodrik, & Andres Velasco. 2005. *Growth Diagnostics*. (Working Paper). Cambridge: Harvard University.

Häußer, Frauke. 1992. Die Migration der Nyimangnuba unter besonderer Berücksichtigung der wirtschaftlichen und sozialen Situation der Frauen. Unpublished PhD thesis, University of Bayreuth, Bayreuth.

Ḫayr, ᶜAbd Allah ᶜAbd al-Raḥmān Muḥammad. 1993-1994. Mašrūᶜ al-tanmiyya al-rīfiyya bi-ǧibāl al-nūba (al-ahdāf wa al-mardūd). Unpublished MA thesis. Khartoum: University of Khartoum.

Hearn, Simon, & Nancy White. 2009. *Communities of practice: linking knowledge, policy and practice*. (ODI Background Note). London: Overseas Development Institute.

Heintz, Christophe. 2010. Ethnographic cognition and *Writing Culture*. In *Beyond writing culture. Current intersections of epistemologies and representational practices*, ed. by Zenker, Olaf & Karsten Kumoll. New York & Oxford: Berghahn Books, 139-162.

Henderson, Kenneth Dawid Druitt. 1953. *The making of the modern Sudan : the life and letters of Sir Douglas Newbold, K.B.E., of the Sudan Political Service, Governor of Kordofan 1932 - 1938, Civil Secretary, 1939 - 1945*, *Colonial and comparative Studies*. London: Faber & Faber.

Hesse, Gerhard. 2002. *Die Jallaba und die Nuba Nordkordofans: Händler, soziale Distinktion und Sudanisierung.* (Beiträge zur Afrikaforschung; 16). Münster, Hamburg: Lit.

Hielkema, J. U., S. D. Prince, and W. L. Astle. 1986. Rainfall and vegetation monitoring in the Savanna Zone of the Democratic Republic of Sudan using the NOAA Advanced Very High Resolution Radiometer. *International Journal of Remote Sensing* 7 (11), 1499-1513.

Hill, Richard. 1965. *Sudan transport. A history of railway, marine and river services in the Republic of the Sudan*. London: Oxford University Press.

Hillier, J. 2002. *Shadows of Power*. London: Routledge.

Hira, Anil & Trevor W. Parfitt. 2004. *Development projects for a new millenium*. Westport: Praeger.

Hockley, Tom. 2005. Notes on the transition from NMPACT to RCO. Internal communication.

Hodder, Ian. 1982. Dirt, women and men: a study in the Nuba mountains, Sudan. In *Symbols in action: ethnoarchaeological studies of material culture*. Cambridge: Cambridge University Press, 125-184.

Hokyu, Hwang, and David Suarez. 2005. Lost and Found in the Translation of Strategic Plans and Websites. In *Global Ideas. How Ideas, Objects and Practices Travel in the Global Economy*, edited by Barbara Czarniawska & Guje Sevón. Malmö: Liber, 71-93.

Horticultural Services Cooperative. 2008a. *Southern Kordofan State Investment Map. Volume 2, Part 1: Natural Resources, Climate & Water Resources*.

Horticultural Services Cooperative. 2008b. *Southern Kordofan State Investment Map. Volume 3: Agriculture*.

Hulme, M., T. M. L. Wigley, E. M. Barrow, S. C. B. Raper, A. Centella, S. Smith, & A. C. Chipanshi. 2000. *Using a Climate Scenario Generator for Vulnerability and Adaptation Assessments: MAGICC and SCENGEN Version 2.4 Workbook*. Norwich: Climatic Research Unit.

Hunting Technical Services. 1981a. South Kordofan rural planning unit. Annex 1: soils and vegetation. London.

Hunting Technical Services. 1981b. South Kordofan rural planning unit. Annex 2: water resources. London.

Husmann, Rolf. 1984. *Transkulturation bei den Nuba. Ethnologische Aspekte des kulturellen Wandels im 19. und 20. Jahrhundert.* (Arbeiten aus dem Institut für Völkerkunde der Georg-August-Universität Göttingen, Bd. 18). Göttingen: Edition Herodot.

Ibrahim, Abdullahi Ali. 1997. Tale of two Sudanese courts: colonial govermentality revisited. *African Studies Review* 40 (1), 13-33.

Ibrahim, Ahmed Osman Mohamed. 1977. A history of the Nuba Mountains 1898-1947, with special reference to the British policy and administration. PhD Thesis, University of Khartoum, Khartoum.

Ibrahim, Ahmed Uthman Muhammad. 1985. *The dilemma of British rule in the Nuba Mountains 1898-1947*. (Graduate College Publications ; 15). Khartoum: University of Khartoum.

Ibrahim, Fouad N. (ed.). 2004. *Ideas on the background of the present conflict in Darfur*. Bayreuth: University of Bayreuth.

Ibrahim, Hamid El-Bashir. 1988. Agricultural development policy, ethnicity and socio-political change in the Nuba Mountains, Sudan. Photocopy, University of Connecticut, University of Connecticut, Storrs.

Ibrāhīm, Ḥāmid Al-Bašīr. 2002. *Fī al-baḥṯ ᶜan al-ḥikmat al-ġā'ba wa al-waᶜī al-mafqūd: Muḥāwala li-faham al-ᶜilāqāt al-qabaliyya wa dīnāmiyyāt al-ḥarb wa al-salām fī ğibāl al-nūba.* Al-Ḫarṭūm: Al-Ṭābiᶜūn maṭbᶜa al-ḥurriyya.

Ibrahim, Hamid El-Bashir. n.d. *In search of the lost wisdom: the dynamics of war and peace in the Nuba Mountains region of Sudan*. Unpublished manuscript.

IFAD. 2000a. *Report and recommendation of the President to the Executive Board on a proposed financial assistance to the Republic of The Sudan for the Sudan Kordofan Rural Development Programme. Executive Board – Seventieth Session, 13-14 September*. Rome: International Fund for Agricultural Development.

IFAD. 2000b. *South Kordofan Rural Development Programme. An assessment of security issues and outreach to the target group. Executive Board – Seventienth Session, 13-14 September*. Rome: International Fund for Agricultural Development.

IFAD. 2009a. *Annual report on results and impact of IFAD operations evaluated in 2008*. Rome: Office of Evaluation, International Fund for Agricultural Development.

IFAD. 2009b. *Republic of The Sudan. Country strategic opportunities programme. Executive Board – Ninety-sixth Session, 29-30 April*. Rome: International Fund for Agricultural Development.

IFAD. 2009c. *The Sudan Rural Access Project (RP). Project Design Report*. Rome: International Fund for Agricultural Development, Near East and North Africa Division, Programme Management Department.

IFAD. 2010. *Proposed supplementary grant to the Republic of The Sudan of the South Kordofan Rural Development Programme. Executive Board – 101th Session, 14-16 December*. Rome: International Fund for Agricultural Development.

Ijaimi, Abdel Latif. 2006. Mechanized Farming and Conflict in Sudan. In *Land Issues and Peace in Sudan*, edited by Galal el-Din el-Tayeb. Khartoum: Reduction of Resource-based Conflict Project (UNDP) & Sudanese Environmental Conservation Society (SECS), 79-92.

Ille, Enrico. 2011. *Tracing golden past. Historical narratives about Shaybun and Shawabna in the Nuba Mountains, Sudan*. Leipzig & Weissenfels: Ille & Riemer.

Ille, Enrico. (forthcoming). The classification of drinking water between public administration and rural communities in South Kordofan, Sudan. Travelling models and technologies. *Sociologus* 37.

Ingold, Tim. 2000. *The perception of the environment. Essays on livelihood, dwelling and skill*. London & New York: Routledge.

IOM, & UNDP. 2003. Sudan IDP demographic, socio-economic profiles for return and reintegration planning activities. Nuba IDP households. Khartoum: The International Organization for Migration & United Nations Development Programme.

Iten, Oswald. 1979. *Economic pressures on traditional society: A case study of the South-East Nuba economy in the modern Sudan.* (Europäische Hochschulschriften, Serie 29, Bd. 8). Bern & Frankfurt am Main: Peter Lang.

Jacobs, Alex, & Robyn Wilford. 2010. Listen First: a pilot system for managing downward accountability in NGOs. *Development in Practice* 20 (7), 797-811.

Jedrej, M.C. 2006. Were Nuba and Hadjeray stateless societies?: ethnohistorical problems in the eastern Sudan region of Africa. *Paideuma: Mitteilungen zur Kulturkunde* 52 (special), 205-225.

Johns, T.C., R.E. Carnell, J.F. Crossley, J.M. Gregory, J.F.B. Mitchell, C.A. Senior, S.F.B. Tett, & R.A. Wood. 1997. The second Hadley Centre coupled ocean-atmosphere GCM: Model description, spinup and validation. *Climate Dynamics* 13, 103-134.

Johnson, Douglas Hamilton. 1971. Nuba chainmail cavalry of the Mahdi's army. *Savage and soldier* 6 (1).

Johnson, Gerry, Richard Whittington & Kevan Scholes. 2012. *Fundamentals of strategy*. Harlow: Pearson Education Limited.

Joint Assessment Mission Sudan. 2005a. *Volume I: Synthesis. Framework for sustained peace, development and poverty eradication.*

Joint Assessment Mission Sudan. 2005b. *Volume II: Cluster costings and matrices.*

Joint Assessment Mission Sudan. 2005c. *Volume III: Cluster reports.*

Kafi, Mohammed Haroun. 2004. *Beyond the land of no graves!!* Nairobi: King's Script Publishers.

Karim, Ataul, Mark Duffield, Susanne Jaspars, Aldo Benini, Joanna Macrae, Mark Bradbury, Douglas H. Johnson, George Larbi, & Barbara Hendrie. 1996. *OLS. Operation Lifeline Sudan: A Review*.

Kenrick, Rosemary. 1987. *Sudan tales. Recollections of some Sudan Political Service wives 1926-1956*. Cambridge & New York: The Oleander Press.

Kersany Mohamed, Ibrahim. 1981. The effects of capitalism upon the past and future development of precapitalist agriculture in the Sudan, with special reference to the Nuba Mountains region. Doctor of Philosophy, School of Economic Studies, Leeds University, Leeds.

Khalifa, M. D. El, Richard Ford, & Mustafa M. Khogali (eds.). 1985. *Sudan's southern stock route. An environmental impact assessment*. Khartoum & Worcester: Institute of Environmental Studies, University of Khartoum & The United States Agency for International Development.

Khider, Mahassin, & Morag C. Simpson. 1968. Co-operatives and Agricultural Development in the Sudan. *The Journal of Modern African Studies* 6 (4), 509-518.

Kluge, Friedrich & Elmar Seebold. 1883/1989. *Etymologisches Wörterbuch der deutschen Sprache.* Berlin & New York: Walter de Gruyter.

Klugman, Jeni, & Asbjorn Wee. 2008. *South Kordofan: A growth diagnostic*. (Sector Policy Note). Khartoum: Multi-Donor Trust Fund-National, Technical Secretariat, The World Bank.

Kolawole, Oluwatoyin Dare. 2010. Inter-disciplinarity, development studies, and development practice. *Development in Practice* 20 (2), 227-239.

Komey, Guma Kunda. 2004. Regional disparity in national development of the Sudan and its impact on nation-building: with reference to the peripheral region of the Nuba Mountains. Unpublished PhD thesis. Khartoum: University of Khartoum.

Komey, Guma Kunda. 2005. Dynamics of the marginalization process in Sudan: the Nuba Mountains case. In *Sudan: the challenges of peace and redressing marginalization*, edited by H. A. Abdel Ati. Khartoum: EDGE for consultancy & research, 54-87.

Komey, Guma Kunda. 2008a. The autochthonous claim of land rights by the sedentary Nuba and its persistent contest by the nomadic Baggara of South Kordofan/Nuba Mountains, Sudan. In *Nomadic-sedentary relations and failing state institutions in Darfur and Kordofan, Sudan*, edited by Richard Rottenburg. (Orientwissenschaftliche Hefte 26). Halle: Universität Halle, 103-129.

Komey, Guma Kunda. 2008b. Autochthonous identity: its territorial attachment and political expression in claiming communal land in the Nuba Mountains region, Sudan. In *Raum – Landschaft – Territorium. Zur Konstruktion physischer Räume als nomadischer und sesshafter Lebensraum*, edited by Roxana Kath & Anna-Katharina Rieger. Wiesbaden: Dr. Ludwig Reichert, 203-228.

Komey, Guma Kunda. 2008c. The denied land rights of the indigenous peoples and their endangered livelihood and survival: The case of the Nuba of the Sudan. *Ethnic and Racial Studies* 31 (5), 991-1008.

Komey, Guma Kunda. 2009. Striving in an Exclusionary State: Territory, Identity and Ethno-politics of the Nuba, Sudan. *Journal of International Politics and Development* 7 (2), 1-20.

Komey, Guma Kunda. 2010a. *Land, Governance, Conflict and the Nuba of Sudan*, *Eastern Africa Series*. Oxford: James Currey.

Komey, Guma Kunda. 2010b. The Comprehensive Peace Agreement and the questions of identity, territory and political destiny of the indigenous Nuba of the Sudan. *International Journal of African Renaissance Studies - Multi-, Inter- and Transdisciplinarity* 5 (2), 48-64.

Komey, Guma Kunda. 2010c. Ethnic Identity Politics and Boundary Making in Claiming Communal Land in the Nuba Mountains after the CPA. In *After the Comprehensive Peace Agreement in Sudan: Sign of Change?*, edited by Elke Grawert. London: James Currey, 110-129.

Komey, Guma Kunda. 2010d. Land Factor in Wars and Conflicts in Africa: The Case of the Nuba Struggle in Sudan. In *Wars and Peace in Africa. History, Nationalism and the State*, edited by Toyin Falola and Raphael C. Njoku. Durham: Carolina Academic Press, 347-376.

Komey, Guma Kunda & Enrico Ille. 2010. *Heiban Locality Health Project Baseline Survey Report.* Khartoum: Justice Africa & Comic Relief.

Koop, Marv. 2001. Grass Roots Regional Assessments. Government Controlled Areas of Sudan. IGAD Partners Forum Working Group Planning for Peace – Sudan.

Kramer, Fritz W., & Gertraud Marx. 1993. *Zeitmarken. Die Feste von Dimodonko*. (Sudanesische Marginalien 7). München: Trickster.

Krings, Matthias, Abd-el Halim Salem, Karin Bauer, Helga Geisert, Adel K. Malek, Louis Chaix, Christian Simon, Derek Welsby, Anna Di Rienzo, Gerd Utermann, Antti Sajantila, Svante

Pääbo, & Mark Stoneking. 1999. mtDNA Analysis of Nile River Valley Populations: A Genetic Corridor or a Barrier to Migration? *American Journal of Human Genetics* 64, 1166-1176.

Kūmī, Jumᶜa Kunda. 1998. Malāmiḥ taḫṭīṭ al-tanmiyya al-ʻiqlīmiyya al-mutakāmila li-wilāya ǧanūb kurdufān ʻanmāṭ al-māḍī ʻimkānāt al-ḥāḍir wa ʻafāq al-mustaqbil. *Maǧalla ʻabḥāṯ al-salām wa al-tanmiyya* 1 (1), 80-96.

Kurita, Yoshiko. 2003. The legacy of slavery and its effect on the nation-building process in the Sudan: The role of ex-slaves in the history of modern Sudan. In *Islam in the Middle Eastern Studies: Muslims and Minorities*, edited by Akira Usuki and Hiroshi Kato. Osaka: The Japan Center for Area Studies, National Museum of Ethnology, 251-263.

Kurita, Yoshiko. 2003. The Role of 'Negroid but Detribalized' People in Modern Sudanese History. *Nilo-Ethiopian Studies* 8-9, 1-11.

Laet, Marianne de, and Annemarie Mol. 2000. The Zimbabwe Bush Pump. Mechanics of a Fluid Technology. *Social Studies of Science* 30 (2):225-263.

Lamoureaux, Siri. 2010. Imagined connectivity, poetic text-messaging and appropriation in Sudan. In *Communication technologies in Latin America and Africa: A multidisciplinary perspective*, edited by M. Fernandez-Ardevol & A. Ros Hijar. Barcelona: Universitat Oberta de Catalunya, 221-244.

Large, Judith, & El-Lazim Suleiman El-Basha. 2010. *A Bitter Harvest and Grounds for Reform: the Nuba Mountains, Conflicted Land and Transitional Sudan.* (Working Paper). Berlin: Berghof Foundation for Peace Support.

Larsen, Kurt, Ronald Kim, & Florian Theus (eds.). 2009. *Agribusiness and innovation systems in Africa*, *Agriculture and Rural Development*. Washington: World Bank.

Latour, Bruno. 1987. *Science in action: how to follow scientists and engineers through society*. Cambridge: Harvard University Press.

Latour, Bruno. 1990. Drawing Things Together. In *Representation in scientific practice*, edited by Michael Lynch & Steve Woolgar. Cambridge: MIT Press, 19-68.

Latour, Bruno. 1997. Trains of thought, Piaget formalism and the fifth dimension. *Common Knowledge* 6, 170-191.

Latour, Bruno. 2004. Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern. *Critical Inquiry* 30 (2), 225-248.

Latour, Bruno. 2005/2008. *What is the style of matters of concern? The Spinoza lectures*. Assen: Van Gorcum.

Lave, Jean, & Etienne Wenger. 1991. *Situated learning. Legitimate peripheral participation*. Cambridge et. al.: Cambridge University Press.

Law, John. 2004. *After method: Mess in social science research*. London / New York: Routledge.

Leal, Pablo Alejandro. 2010. Participation: the ascendancy of a buzzword in the neo-liberal era. In *Deconstructing Development Discourse. Buzzwords and Fuzzwords,* edited by Andrea Cornwall, and Deborah Eade. Warwickshire & Oxford: Practical Action Publishing & Oxfam GB, 89-100.

Lebon, John Harold George. 1956. Rural water supplies and the development of economy in the Central Sudan. *Geografiska Annaler* 38 (1), 78-101.

Leggett, J., W.J. Pepper, R.J. Swart, J. Edmonds, L.G. Meira Filho, I. Mintzer, M.X. Wang, & J. Watson. 1992. Emissions Scenarios for the IPCC: an Update. In *Climate Change 1992: The Supplementary Report to The IPCC Scientific Assessment*, Cambridge et. al.: Cambridge University Press, 68-95.

Lepenies, Philip A. 2008. An inquiry into the roots of the modern concept of development. *Contributions to the History of Concepts* 4, 202-225.

Lewis, David, & David Mosse. 2006. *Development brokers and translators: the ethnography of aid and agencies*. Bloomfield: Kumarian Press.

Lewis, David, Dennis Rodgers, & Michael Woolcock. 2008. The fiction of development: Literary representation as a source of authoritative knowledge. *Journal of Development Studies* 44 (2), 198-216.

Li, Murray Tania. 2005. Beyond "the state" and failed schemes. *American Anthropologists* 107 (3), 383-394.

MacMichael, Harold Alfred. 1912/1967. *The tribes of Northern and Central Kordofán*. (General studies / Cass Library of African Studies 42). London: Frank Cass.

Malinowski, Bronislaw. 1922/1984. Introduction. The subject, method and scope of this inquiry. In *Argonauts of the western pacific. An account of native enterprise and adventure in the archipelagoes of Melanesian New Guinea*. Prospect Heights: Waveland Press, 1-25.

Manger, Leif. 1981. Public schemes and local participation. Some remarks on the present situation in the Southern Nuba Mountain Area. Unpublished manuscript.

Manger, Leif Ole (ed.). 1984. *Trade and traders in the Sudan*. (African Savannah Studies. Occasional Papers). Bergen: Department of Social Anthropology, University of Bergen.

Manger, Leif Ole (ed.). 1987. *Communal labour in the Sudan*. Bergen: Department of Social Anthropology, University of Bergen.

Manger, Leif Ole. 1988. Traders, farmers and pastoralists: economic adaptations and environmental problems in the southern Nuba Mountains of the Sudan. In *The ecology of survival: case studies from Northeast African history*, edited by Douglas H. Johnson and David M. Anderson. Boulder: Westview Press, 155-172.

Manger, Leif Ole. 1994. *From the mountains to the plains: the integration of the Lafofa Nuba into Sudanese society*. Uppsala: The Scandinavian Institute of African Studies.

Manger, Leif Ole. 1998. Local resource management in the context of civil war and genocide: identity, cultural tradition and territory among the Nuba of the Sudan. Paper presented to workshop on “Environment, Property Resources and the State” organised by The Commission on Nomadic Peoples at conference “The 21st Century: The Century of Anthropology”, The 14th International Congress of Anthropological and Ethnological Sciences (ICAES), July 26 - August 1, 1998. Williamsburg.

Manger, Leif Ole. 2001. The Nuba Mountains: battlegrounds of identities, cultural traditions and territories. In *Sudanese society in the context of war: papers from a seminar at the University of*

Copenhagen, edited by Maj-Britt Johannsen and Niels Kastfelt. Copenhagen: University of Copenhagen, 49-92.

Manger, Leif Ole. 2003. Civil war and the politics of subjectivity in the Nuba Mountains, Sudan. Paper presented at the XV ICAES Congress, "Humankind/Nature Interaction: Past, Present and Future", July 5-12, 2003. Workshop on "Anthropology and Its Applications". Florence.

Manger, Leif Ole. 2007. Ethnicity and post-conflict reconstruction in the Nuba mountains of the Sudan: processes of group-making, meaning production, and metaphorization. *Ethnoculture* 1, 72-84.

Manger, Leif Ole. 2008. Land, territoriality and ethnic identities in the Nuba Mountains. In *Nomadic-sedentary relations and failing state institutions in Darfur and Kordofan (Sudan)*, edited by Richard Rottenburg. (Orientwissenschaftliche Hefte 26). Halle: Universität Halle, 71-99.

Manssouri, Mohamed, & Cristiana Sparacino. 2009. *Community-driven development decision tools for rural development programmes*. Rome: International Fund for Agricultural Development.

Maranhão, Tullio & Bernhard Streck. 2003. *Translation and ethnography. The anthropological challenge of intercultural understanding*. Tucson: The University of Arizona Press.

March, G. F. 1954. Kordofan province. In *Agriculture in the Sudan, being a handbook of agriculture as practised in the Anglo-Egyptian Sudan*, edited by John Douglas Tothill. London: Oxford University Press, 827-850.

Marcus, George E. 1995. Ethnography in/of the world system: the emergence of multi-sited ethnography. *Annual Review of Anthropology* 24, 95-117.

Martinussen, John. 1997. *Society, state and market. A guide to competing theories of development*. London & New York: Zed Books.

Matus, Jason. 2007. The future of food security in the Three Areas of Sudan. *Disasters* 31 (1), 91-103.

May, Jon, & Nigel Thrift (eds.). 2001. *Timespace. Geographies of temporality*. London & New York: Routledge.

McAvaney, B.J., J.R. Fraser, T.L. Hart, L.J. Rikus, W.P. Bourke, M.J. Naughton, & P. Mullenmeister. 1991. *Circulation statistics from a non-diurnal seasonal simulation with the BMRC atmospheric GCM: R21L9*. (BMRC Research Report No. 29). Melbourne: Bureau of Meteorology Research Centre.

McGrath, Rae. 2000. Assessment of Mine-Action Needs for Development in Sudan. Report of a Field Assessment conducted in Sudan during November and December 2000 funded by the European Community. Report to The IGAD Partner Forum Working Group Planning for Peace Programme.

Meier, Christoph. 1989. Ethnische Selbsthilfevereine der Nuba-Migranten im städtischen Großraum Khartum (Republik Sudan). Unpublished M.A. thesis. Institut für Ethnologie, Universität Göttingen, Göttingen.

Meier, Christoph. 1990. Ethnic self-help associations among Nuba migrants in the "Three Towns" (Republic of Sudan). *Sociologus* 40, 158-178.

Merton, Robert K. 1936. The Unanticipated Consequences of Purposive Social Action. *American Sociological Review* 1 (6), 894-904.

Met Office Hadley Centre. 2010. *Sahelian climate: past, current, projections*. Exeter & Issy-les-Moulineaux: Met Office & OECD Sahel and West Africa Club Secretariat.

Mirghani, Muna. 2006. *Assessment of the status of water quality data management in Sudan*. Unpublished report. Khartoum.

Mohamed, A. Y., W. A. Ashcroft, & A. J. Whiteman. 2001. Structural development and crustal stretching in the Muglad Basin, southern Sudan. *Journal of African Earth Sciences* 32 (2), 179-191.

Mohamed, E., A. Ahmed & Khalid Siddig. 2008. Technical Efficiency of Producing Sorghum in Kordofan State, Case Study Habila Mechanized Rain-fed Sector. *The Bangladesh Journal of Agricultural Sciences* 35 (1), 17-22.

Mohamed, E. I., A. Ahmed, Khalid Siddig & S. Pervin. 2008. Technical Efficiency Measurement in Sesame Production Using Stochastic Production Frontier in Nuba Mountains in Sudan. *The Bangladesh Society for Agricultural Science and Technology* 5 (1&2), 209-212.

Mohamed, Mohamed Abdel Gadir. 1988. The impact of emergency food aid on traditional agricultural production system. The case of Eastern Kordofan district. Unpublished MSc thesis. Khartoum: University of Khartoum.

Mohamed, N. E., U. Yaramandi, K. M. Kheiralla, & M. Y. Abdelgalil. 2011. Assessment of integrated electrical resistivity data on complex aquifer structures in NE Nuba Mountains – Sudan. *Journal of African Earth Sciences* 60:337-345.

Mohamed, Omer Abdel Gabbar. 1990. *Nuba migrants in Khartoum. Dynamics of urbanization, acculturation and identification*. Khartoum: Faculty of Economic and Social Studies, University of Khartoum.

Mohamed Salih, Mohamed Abdel Rahim. 1983. Development and social change among the Moro of the Nuba Mountains. PhD Thesis, Faculty of Economic and Social Studies, University of Manchester, Manchester.

Mohamed Salih, Mohamed Abdel Rahim. 1991. Generation and Migration: Identity Crisis and Political Change among the Moro of the Nuba Mountains. *GeoJournal* 25 (1), 51-57.

Mohamed Salih, Mohamed Abdel Rahim. 1994. Age, generation and migration among the Moro of the Nuba Mountains of the Sudan. In *A river of blessings: essays on the honour of Paul Baxter*, edited by David W. Brokensha. Syracuse, New York: Syracuse University Press, 113-128.

Mohamed Salih, Mohamed Abdel Rahim. 1995. Resistance and response: ethnocide and genocide in the Nuba Mountains, Sudan. *Geojournal: an international journal on human geography and environmental sciences* 36 (1), 71-78.

Mohamed Salih, Mohamed Abdel Rahim. 1999. Land alienation and genocide in the Nuba Mountains. *Cultural Survival Quarterly: world report on the rights of indigenous peoples and ethnic minorities* 22 (4), 36-38.

Mohammed, El Tayeb Elamin. 1979. Modes of agricultural production in Nuba Mountains. Unpublished MSc thesis. Khartoum: University of Khartoum.

Mohammed, Gaafar Bashir. 1986. Traditional smallholder rainfed crop production: a characteristic farm in the Nuba Mountains. In *The agricultural sector of Sudan. Policy & systems studies*, edited by A. B. Zahlan & W. Y. Magar. London: Ithaca Press, 115-144.

Mohammed, Nuha Ahmed, & Ahmed Ali Salih. 2007. The Woody Vegetation of Rashad District, South Kordofan, Sudan (Eastern Nuba Mountains). *Sudan Silva* XIII (1), 78-89.

Morris, Peter W. G., Jeffrey K. Pinto & Jonas Söderlund. 2011. *The Oxford handbook of project management*. Oxford et. al.: Oxford University Press.

Mosse, David. 2005. *Cultivating development. An ethnography of aid policy and practice*. London & Ann Arbor: Pluto Press.

Mosse, David. 2008. International policy, development expertise, and anthropology. *Focaal* 52, 119-126.

Mosse, David (ed.). 2011. *Adventures in aidland. The anthropology of professionals in international development*. New York & Oxford: Berghahn Books.

Moszynski, Peter. 2001. The landmine situation in the Nuba Mountains. *The Nuba Vision* 1 (1), 5-6.

Mowles, Chris. 2010. Successful or not? Evidence, emergence, and development management. *Development in Practice* 20 (7), 757-770.

Moyo, Dambisa. 2009. *Dead aid. Why aid is not working and how there is another way for Africa*. London et. al.: Allen Lane.

Mubarak, A. R., M. H. Abdalla, & S. Nortcliff. 2012. Millet (Pennisetum typhoides) yield and selected soil attributes as influenced by some tree types of the semi-arid tropics of Sudan. *Journal of Arid Environments* 77, 96-102.

Multi-Donor Trust Fund – National. 2005. Project proposal document for a proposed grant in the amount of US$ 14.74 million to South Kordofan state, Sudan, for the South Kordofan Start-up Emergency Project. Khartoum: World Bank.

Multi-Donor Trust Fund – National. 2010. Consolidating gains. Annual report. Khartoum: World Bank.

Multi-Donor Trust Funds. 2008. Third progress report. Reporting period January 1 – December 31, 2007. Khartoum & Juba: World Bank.

Muneer, Siddig El Tayeb, & Amal Ahmed Musa. 1995. Agricultural development and environmental problems in Sudan. The case of EN Nahud Cooperative Credit Project in Kordofan State, Sudan. *The Science of the Total Environment* 166, 55-60.

Munīr, Munīr Šayḫ Munīr. 2006. Kumūlū: al-ḥilqa al-mafqūda fī al-tā'rīḫ al-siyāsī al-ḥadīṯ li-ǧibāl al-nūba min 1976-2006. Al-Ḫarṭūm: Al-maktaba al-waṭaniyya.

Nabudere, Dani Wadada. 2005. The First Traditional Leaders Conference in Nuba Mountains. Julud, 17th July – 22nd July 2005. Comprehensive report.

Nadel, Siegfried Frederick. 1947. *The Nuba: an anthropological study of the hill tribes of Kordofan*. London: Oxford University Press.

Nawari, O., & K. Schetelig. 1991. Geotechnical study on Kordofan tropical black soils (Sudan Republic). *Engineering Geology* 31, 1-26.

Nawari, O., & K. Schetelig. 1992. Chemical, mineralogical and fabric properties of Kordofan tropical black soils (Sudan). *Journal of African Earth Sciences* 14 (4), 545-557.

Ngugi, Joseph Gathogo, Fudolalla Abdel Gadir Abukindi, & Mahdi Anur Daud. 2010. *Mid-term review of Norwegian Church Aid's integrated development programme in Nuba Mountains*. Oslo: Norwegian Church Aid.

NMPACT. 2002. NMPACT report of the baseline data collection exercise - summary findings. Khartoum: Nuba Mountains Programme for Advancing Conflict Transformation (NMPACT) Coordination Unit, UNOCHA.

NMPACT. 2005. Southern Kordofan Basic Services and Population (Population, Education, Health, Water). Unpublished xls table.

Noma, Emiko, & Jennifer Freeman. 2010. Grassroots peacebuilding in the Nuba Mountains. *New Routes* 15 (1), 3-6.

NORAD. 1999. *The Logical Framework Approach (LFA). Handbook for objectives-oriented planning*. Oslo: Norwegian Agency for Development Cooperation.

O'Brien, Jay. 1985. Sowing the Seeds of Famine: The Political Economy of Food Deficits in Sudan. *Review of African Political Economy* 12 (33), 22-32.

OCHA. 2011. *South Kordofan Situation Report No. 3*. New York & Geneva: UN Office for the Coordination of Humanitarian Affairs.

Oesterdiekhoff, Peter, & Karl Wohlmuth (eds.). 1983. *The development perspectives of the Democratic Republic of Sudan. The limits of the breadbasket strategy*, *IFO-Institut für Wirtschaftsforschung München, Afrika-Studien 109*. München, Köln, London: Weltforum Verlag.

Office of the UN Resident and Humanitarian Coordinator for the Sudan. 2003. Report on SPLM/A controlled Nuba Mountains Region. Sudan Transition and Recovery Database.

Olsson, Katarina, & Anders Rapp. 1991. Dryland Degradation in Central Sudan and Conservation for Survival. *Ambio* 20 (5), 192-195.

Olsson, L., L. Eklundh, & J. Ardö. 2005. A recent greening of the Sahel—trends, patterns and potential causes. *Journal of Arid Environments* 63, 556-566.

Omaar, Rakiy, & Alex de Waal (eds.). 1995. *Facing genocide: the Nuba of Sudan*. London: African Rights.

Osman, Alfatih A. A., Isam Salih, Ibrahim A. Shaddad, Saif El Din, M. B. Siddeeg, Hatem Eltayeb, Hajo Idriss, Walid Hamza, & E. H. Yousif. 2008. Investigation of natural radioactivity levels in water around Kadugli, Sudan. *Applied Radiation and Isotopes* 66, 1650-1653.

Osman, Zaroug. 2009. The financial performance of privatized enterprises in Sudan (1990-2002). An empirical study. Paper presented in the International Conference on „The Role of the Private Sector In Development: Assessment and Prospects“ (23-25 March 2009, Beirut, Lebanon). Arab Planning Institute Kuwait. (<http://www.arab-api.org/conf_0309/p29.pdf>, retrieved 16-04-2011).

O'Sullivan, Moire. 2010. Is this a partnership or a relationship? Concern Worldwide maps the difference. *Development in Practice* 20 (6), 734-739.

Oudshoorn, Nelly, & Trevor Pinch. 2008. User-Technology Relationships: Some Recent Developments. In *The Handbook of science and Technology Studies*. Cambridge & London: MIT Press, 541-565.

Pallme, Ignatius. 1843. *Beschreibung von Kordofan und einigen angränzenden Ländern: nebst einem Ueberblick ueber den dasigen Handel, die Sitten und Gebraeuche der Einwohner und die unter der Regierung Mehemed Ali's stattgefundenen Sklavenjagden.* Stuttgart & Tübingen: Cotta.

Pantuliano, Sara. 2005a. A "Principled" Approach to complex emergencies. Testing a New Aid Delivery Model in the Nuba Mountains. Disasters 29 (1), 52-66.

Pantuliano, Sara. 2005b. *Changes and potential resilience of food systems in the Nuba Mountains conflict*. Dar es Salaam: Institute of Development Studies, University of Dar es Salaam.

Pantuliano, Sara, Susanne Jaspars & Deepayan Basu Ray. 2009. Where to Now? Agency Expulsions in Sudan: Consequences and Next Steps. Paper written for Overseas Development Institute, Humanitarian Policy Group & ALNAP.

Parkinson, Sarah. 2010. The learning organisation as a model for rural development. *Development in Practice* 20 (3), 329-341.

PCGN. 2004. The geographical names of Sudan. The Permanent Committee on Geographical Names.

Petherick, John. 1861. *Egypt, the Soudan and Central Africa with explorations from Khartoum on the White Nile to the regions of the equator being sketches from 16 years' travel*. Edinburgh & London: Blackwood.

Pieterse, Jan Nederveen. 2010. *Development theory. Deconstruction/Reconstructions*, edited by M. Featherstone. (Theory, Culture & Society). London et. al.: SAGE.

Pinch, Trevor. 2010. On making infrastructure visible: putting the non-humans to rights. *Cambrige Journal of Economys* 34 (1), 77-89.

Poussart, Jean-Nicolas, Jonas Ardö, & Lennart Olsson. 2004. Effects of Data Uncertainties on Estimated Soil Organic Carbon in the Sudan. *Environmental Management* 33 (Supplement 1), S406-S415.

Prah, Kwesi Kwaa. 2006. Traditional leadership as a basis for local government and co-existence. Report of The Second Traditional Leaders Conference of the Nuba. South Kordofan State, sudan. Kadugli, South Kordofan, 4th-6th July 2006.

Pratt, John W. & Richard J. Zeckhauser. 1985/1991. *Principals and agents. The structure of business*. Boston: Harvard Business School Press.

PRECISE. 2005. *Gap impact and organizational capacity evaluation. Final report*. Nairobi: Nuba Relief, Rehabilitation and Development Organization.

PricewaterhouseCoopers. 2007a. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 4th Quarter Report - 1 October to 31 December 2006, February 2007. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2007b. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 1st Quarter Report – 1 January to 31 March 2007, May 2007. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2007c. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 2nd Quarter Final Report – 1 April to 30 June 2007, September 2007. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2007d. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 3rd Quarter Final Report – 1 July to 30 September 2007, December 2007. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2008a. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 4th Quarter Final Report – 1 October to 31 December 2007, March 2008. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2008b. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 1st Quarter Final Report – 1 January to 31 March 2008, June 2008. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2008c. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 2nd Quarter – 1 April to 30 June 2008, Final Report, September 2008. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2008d. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 3rd Quarter – 1 July to 30 September 2008, Final Report, November 2008. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2009. Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 1st Quarter – 1 January to 31 March 2009, Final Report, June 2009. Port Louis: Pricewaterhouse Coopers Associates Africa.

PricewaterhouseCoopers. 2010. Quarterly Report to the National Sudan Multi Donor Trust Fund (MDTF-N) Administrator. 1st Quarter – 1 January to 31 March 2010, Final Report, May 2010. Port Louis: Pricewaterhouse Coopers Associates Africa.

Prunier, Gérard. 1992. Military slavery in the Sudan during the Turkiyya (1820-1885). In *The human commodity: perspectives on the trans-Saharan slave trade*, edited by E. Savage. London: Frank Cass, 129-139.

Prunier, Gérard. 2005. *Darfur: The ambiguous genocide*, edited by Tarak Barkawi, James Mayall & Brendan Simms. Ithaca & New York: Cornell University Press.

Rahama, Amna, & Durria Mansour. 2005. *A case study of conflict in the Nuba Mountains*. Omdurman: Ahfad University for Women.

Ranganathan, Rupa, & Cecilia Briceño-Garmendia. 2011. *Sudan's infrastructure: A continental perspective*. Washington: The World Bank.

Riefenstahl, Leni. 1973-1976/2006. *Die Nuba*. Köln: Komet Verlag.

Riley, James J. 1985. *Recommended water conservation/utilization. Interventions and research directions in Kordofan region of Western Sudan*. (WSARP Publication No. 38). Khartoum & Pullman: Western Sudan Agricultural Research Project.

Robins, Steven. 2004. Talking in Tongues. Consultants, Anthropologists, and Indigenous Peoples. In *Expert knowledge: first world peoples, consultancy, and anthropology*, edited by Barry Morris & Rohan Bastin. New York et. al.: Berghahn Books, 89-101.

Robinson, Ian. 2011. *Government of Sudan and FAO/WFP crop and food security assessment mission to the 15 northern states of Sudan*. Khartoum: Crop and Food Assessment Mission, FAO-Sudan, WFP Sudan.

Roden, David. 1972. Down-migration in the Moro Hills of Southern Kordofan. *Sudan Notes and Records* 53, 79-99.

Rodis, Harry G., Abdulla Hassan, & Lutfi Wahadan. 1968. *Ground Water Geology of Kordofan Province, Sudan. Contributions to the hydrology of Africa and the Mediterranean region*, *Geological Survey Water Supply Paper 1757-J*. Washington: United States Government Printing Office.

Rose, M. F. 1950. Possible Crops for the Cotton Rotation in the Southern Jebels Area of Kordofan, A. E. Sudan. *Empire Cotton Growing Review* 27 (4), 262-274.

Rose, M. F. 1951. *The Nuba Mountains cotton crop: some factors affecting yield*. (Memoirs of Research Division No. 20). Khartoum: Agricultural Publications Committee. Original edition, Reprinted from *The Empire Cotton Growing Review* 28 (2).

Rottenburg, Richard. 1988. *Die Lemwareng-Nuba. Ein Beispiel kultureller Akkreszenz im heutigen Nil-Sudan (Zusammenfassung)*, *Ethnizität und Gesellschaft.* (Occasional Papers 15). Berlin: Das Arabische Buch.

Rottenburg, Richard. 1989. "Sesam, öffne dich". Die Außenwelt in der Innenwelt bei den Moro-Nuba von Lebu in Südkordofan/Sudan. *Anthropos* 84, 469-485.

Rottenburg, Richard. 1990. Zum Begriff der Akkreszenz am Beispiel der Lemwareng-Nuba. In *Tradition, Migration, Notstand. Themen heutiger Sudanethnographie*, edited by B. Streck. Göttingen: Edition Re, 85-96.

Rottenburg, Richard. 1991. *Ndemwareng. Wirtschaft und Gesellschaft in den Morobergen*. München: Trickster Verlag.

Rottenburg, Richard. 2000. Accountability for development aid. In *Facts and figures. Economic representations and practices*, edited by H. Kalthoff, R. Rottenburg and H.-J. Wagener. Marburg: Metropolis-Verlag, 143-173.

Rottenburg, Richard. 2005. Code switching, or why a metacode is good to have. In *Global ideas. How ideas, objects and practices travel in the global economy*, edited by B. Czarniawska and G. Sevón. Copenhagen: Copenhage Business school press, 259-274.

Rottenburg, Richard 2009. *Far-fetched facts. A parable of development aid*. Cambridge & London: The MIT Press.

Rottenburg, Richard, Guma Kunda Komey, & Enrico Ille. 2011. *The genesis of recurring wars in Sudan. Rethinking the violent conflicts in the Nuba Mountains / South Kordofan*. Halle: University of Halle.

Rüppell, Eduard. 1829. *Reisen in Nubien, Kordofan und dem peträischen Arabien: vorzüglich in geographisch-statistischer Hinsicht*. Frankfurt am Main: Wilmans.

Saavedra, Martha 1998. Ethnicity, resources and the central state: politics in the Nuba Mountains, 1950 to the 1990s. In *Kordofan invaded: peripheral incorporation and social transformation in islamic Africa*, edited by Endre Stiansen and Michael Kevane. Leiden: Brill, 223-253.

Sadig, Abdel Ati, & J. R. Vail. 1986. Geology and regional gravity traverses of the Nuba Mountains, Kordofan Province, Sudan. *Journal of African Earth Sciences* 5 (4), 329-338.

Saeed, Abdalbasit 1982. The state and socioeconomic transformation in the Sudan. The case of social conflict in Southwest Kurdufan. Unpublished PhD thesis. University of Connecticut, Storrs, Connecticut.

Saeed, Abdalbasit. 2008. *Post-conflict peace-building and socio-economic integration issues in Southwest Kordofan*. Bergen: Christian Michelsen Institute.

Saeed, Mohamed H. 1980. Economic effects of agricultural mechanization in rural Sudan: the case of Habila, southern Kordofan. In *Problems of savannah development: the Sudan case*, edited by Gunnar Haaland. Bergen: Department of Social Anthropology, University of Bergen, 167-184.

Saleem, Samir Taha. 1987. On the determination of interest rates in rural credit markets: a case study from the Sudan. *Cambridge Journal of Economies* 11, 165-172.

Salih, Kamal el-Din Osman. 1982. The British administration in the Nuba Mountains region of Sudan 1900-1956. Unpublished PhD thesis. University of London, London.

Salih, Kamal el-Din Osman. 1990. British policy and the accentuation of inter-ethnic divisions: the case of the Nuba mountains region of Sudan, 1920-1940. *African Affairs* 89 (356), 417-436.

Salih, Kamal el-Din Osman. 2005. British Colonial Military Recruitment Policy in the Southern Kordofan Region of Sudan, 1900–1945. *Middle Eastern Studies* 41 (2), 169-192.

Sam, Adam Khatir, & Elis Holm. 1995. The natural radioactivity in phosphate deposits from Sudan. *The Science of the Total Environment* 162, 173-178.

Schadeberg, Thilo C. 1981. *A survey of Kordofanian. Vol 1. The Heiban group.* (Sprache und Geschichte in Afrika, Beiheft 1). Hamburg: Helmut Buske.

Schatzki, Theodore R., Karin Knorr Cetina, & Eike von Savigny (eds.). 2001. *The practice turn in contemporary theory*. London & New York: Routledge.

Schatzki, Theodore R. 2001a. Introduction. Practice theory. In *The practice turn in contemporary theory*, edited by Theodore R. Schatzki, Karin Knorr Cetina, and Eike von Savigny. London & New York: Routledge, 1-14.

Schatzki, Theodore R. 2001b. Practice mind-ed orders. In *The practice turn in contemporary theory*, edited by T. R. Schatzki, K. Knorr Cetina and E. v. Savigny. Abingdon: Routledge, 42-55.

Schatzki, Theodore R. 2002. *The site of the social : a philosophical account of the constitution of social life and change*. University Park: The Pennsylvania State University Press.

Schatzki, Theodore R. 2010. *The timespace of human activity. On performnce, society, and history as indeterminate teleological events*. Lanham et. al.: Lexington Books.

Schramm, Katharina. 2008. Pan-Africanism as a resource: contested relationships of belonging in the practice of homecoming. In *Struggling over the past: the politics of heritage and homecoming in Ghana*. Oxford: Left Coast Press, 201-255.

Schumpeter, Joseph A. 1942/2008. *Capitalism, socialism and democracy*. New York et. al.: Harper Perennial Modern Thought.

Schwarz, Torsten. 1994. Ferricrete formation and relief inversion: an example from Central Sudan. *Catena* 21, 257-268.

Scott, James C. 1985. *Weapons of the weak. Everyday forms of peasant resistance*. New Haven & London: Yale University Press.

Scott, James C. 1990. *Domination and the arts of resistance. Hidden transcripts*. New Haven & London: Yale University Press.

Scott, James C. 1998. *Seeing like a state. How certain schemes to improve the human condition have failed*. New Haven & London: Yale University Press.

Scott, W. Richard. 1981/1987. *Organizations. Rational, natural, and open systems*. Englewood Cliffs: Prentice Hall.

Scott, W. Richard. 1995. *Institutions and organizations*. Thousand Oaks, London & New Delhi: SAGE Publications.

Sen, Amartya. 1999. *Development as freedom*. Oxford et. al.: Oxford University Press.

Shakir, Hassan. 2006. Report on impact assessment survey-2006 (SKRDP). Rome: International Fund for Agricultural Development.

Šarīf, Mariam. 2005. Al-rawābiṭ al-‘iṯniyya li-mahāğirī ğibāl al-nūba fī al-ḥaḍir. Namūziğ rābiṭa haybān fī maḥaliyya ‘umbadda. Unpublished B.A. thesis. University of Khartoum, Khartoum.

Shepherd, Andrew, Malcolm Norris, & John Watson. 1987. *Water Planning in Arid Sudan*, *Published for the Development Administration Group, Institute of Local Government Studies, University of Birmingham*. London & Atlantic Highlands: Ithaca Press.

Siddig, El Fatih Ali, Khalid El-Harizi, & Bettina Prato. 2007. *Managing conflict over natural resources in Greater Kordofan, Sudan. Some recurrent patterns and governance implications*. (IFPRI Discussion Paper 00711). Washington: International Food Policy Research Institute.

Sillitoe, Paul (ed.). 2007. *Local science vs. global science. Approaches to indigenous knowledge in international development*. New York & Oxford: Berghahn Books.

Simon, Herbert A. 1945/1976. *Administrative behavior. A study of decision-making processes in administrative organization*. New York: The Free Press.

Spaulding, J. 1987. A premise for precolonial Nuba history. *History in Africa* 14:369-374.

Söderlund, Jonas. 2011. Theoretical foundations of project management. Suggestions for a pluralistic understanding. In *The Oxford handbook of project management*, edited by Peter W. G. Morris, Jeffrey K. Pinto & Jonas Söderlund. Oxford et. al.: Oxford University Press, 37-64.

Sokal, Alan & Jean Bricmont. 1998. *Fashionable nonsense. Postmodern intellectuals' abuse of science*. New York: Picador.

Spaulding, Jay. 1984. The management of exchange in Sinnar, c. 1700. In *Trade and traders in the Sudan*, edited by Leif Ole Manger. Bergen: Department of Social Anthropology, University of Bergen, 25-48.

Spaulding, Jay. 1987. A premise for precolonial Nuba history. *History in Africa* 14, 369-374.

Speece, Mark, & Thomas Gillard-Byers. 1986. Government market intervention in Kordofan, Sudan. *Northeast African Studies* 8 (2-3), 111-129.

Speece, Mark. 1989. Market performance of agricultural commodities in semiarid South Kordofan, Sudan. *Geoforum* 20 (4), 409-424.

Speece, Mark. 1990. Rural marketing constraints in South Kordofan, Sudan. *Erdkunde* 44, 209-219.

Spivak, Gayatri Chakravorty. 1988. Subaltern studies: deconstructing historiography. In *Selected subaltern studies*, edited by Ranajit Guha & Gayatri Chakravorty Spivak. New York: Oxford University Press, 3-32.

Star, Leigh Susan. 1999. The ethnography of infrastructure. *American Behavioral Scientis* 43 (3), 377-391.

Stevenson, R. C. 1984. *The Nuba people of Kordofan province: an ethnographic survey*. (Graduate College Publications Monograph 7). Khartoum: Graduate College, University of Khartoum.

Strandaneas, Jan-Gustav. 2011. A council for sustainable development: A possible outcome of the Rio+20 process. Stakeholder Forum‘s Programme on Sustainable Development Governance towards the UN Conference on Sustainable Development in 2012.

Strauss, Anselm. 1978. A social world perspective. *Studies in Symbolic Interaction* 1, 119-128.

Suliman, Mohamed. 1997. Ethnicity from perception to cause of violent conflicts: the case of the Fur and Nuba conflicts in Western Sudan. Paper read at CONTICI International Workshop, July 8-11 1997, Bern.

Suliman, Osman. 2007. *Current privatization policy in Sudan*. (Policy Brief Nr. 52). William Davidson Institute, University of Michigan. (<www.uquebec.ca/observgo/fichiers/75871_ep1.pdf>, retrieved 16-04-2011).

Sultan, Dawood H. 1993. Merchants and a bankrupt state: reflections on contextual imperatives and the genesis of predicament in Kordofan. *African Studies Review* 36 (3), 75-94.

Tahir, Bashir Awad El, & Jens Gebauer. 2004. Non-timber Forest Products: Opportunities and Constraints for Poverty Reduction in the Nuba Mountains, South Kordofan, Sudan. Paper presented at the Conference on International Agricultural Research for Development, Deutscher Tropentag, October 5-7, 2004, Berlin.

Tayeb, Sharhabeel Ali El. 1981. The impact of water points on environmental degradation. The case of Eastern Kordofan District. Unpublished MSc thesis. Khartoum: University of Khartoum.

Teraifi, Al-Agab Ahmed al- (ed.). 1987. *Decentralization in Sudan*. (Graduate College Publications No. 20). Khartoum: Graduate College, University of Khartoum.

Thiombiano, Lamourdia, & Malo Meshack (eds.). 2009. *Scaling-up Conservation Agriculture in Africa: Strategy and Approaches*. Addis Ababa: FAO Subregional Office for Eastern Africa.

Titherington, G. W. 1931. Nuba houses. *Sudan Notes and Records* 14 (2), 196.

Todaro, Michael P. & Stephen C. Smith. 2003. *Economic development*. (The Addison-Wesley series in economics). Harlow: Pearson Eucation.

UNCHR. 1994. Situation of human rights in the Sudan. Report of the Special Rapporteur, Mr. Gáspár Bíró submitted in accordance with Commission on Human Rights resolution 1993/60. E/CN.4/1994/48.

UNDP. 2006. *Pastoral Production Sytems in South Kordofan, Study 2*. Khartoum: United Nations Development Programme in Sudan.

UNEP. 2007. *Sudan: post-conflict environmental assessment*. Nairobi: United Nations Environment Programme.

UNEP. 2011. *Livelihood Security. Climate Change, Migration and Conflict in the Sahel*. Nairobi: United Nations Environment Programme.

USAID & USDA. 2006. Support to the Government of South Sudan and the Three Areas of the Transitional Zone. Activities implemented under the USAID-USDA PASA, 1 October to 31 December 2005. Washington, Nairobi & Juba: USAID, USDA, University of Missouri & Tuskegee University.

Vail, J. R. 1985. Alkaline ring complexes in Sudan. *Journal of African Earth Sciences* 3 (1/2), 51-59.

Verjee, Aly. 2011. *Sudan's aspirational army: A history of the Joint Integrated Units*. (SSR Issue Papers No. 2). Waterloo: The Centre for International Governance Innovation.

Vicars-Miles, A. L. W. 1934. Notes on Nuba Administration. Manuscript held at the University of Durham (SAD.631/10/1-61).

Waal, Alex de. 1989. *Famine that kills. Darfur, Sudan, 1984-1985*. Oxford: Clarendon Press.

Waal, Alex de. 1997. *Food And Power In Sudan: A Critique of Humanitarianism*. London: African Rights.

Waldrop, M. Mitchell. 1992. *Complexity. The emerging science at the edge of order and chaos*. New York: Touchstone.

Wehr, Hans. 1985. *Arabisches Wörterbuch für die Schriftsprache der Gegenwart. Arabisch-Deutsch.* Wiesbaden: Harrassowitz.

Weick, Karl E. 1969/1979. *The social psychology of organizing*. New York et. al.: McGraw-Hill.

Weick, Karl E. 1976. Educational organizations as loosely coupled systems. *Administrative Science Quarterly* 21: 1-19.

Weick, Karl E. 1995. *Sensemaking in organizations*. London: Sage.

Weick, Karl E. 2003. Theory and practice in the real world. In *The Oxford handbook of organization theory. Meta-theoretical perspectives*, edited by Haridimos Tsoukas & Christian Knudsen. Oxford et. al.: Oxford University Press, 453-475.

Wenger, Etienne C., & William M. Snyder. 2000. Communities of practice: The organizational frontier. *Harvard Business Review* (January-February), 139-145.

Werbner, Pnina. 1997. Essentialising essentialism, essentialising silence: ambivalence and multiplicity in the constructions of racism and ethnicity. In *Debating cultural hybridity: multi-cultural idenities and the politics of anti-racism*, edited by Pnina Werbner and Tariq Modood. London: Zed Books, 226-254.

WFP. 2009a. Emergency Food Security Assessments (EFSAs). Technical guidance sheet no. 13: Short guide to applying the National Response Capacity Matrix. Rome: World Food Programme.

WFP. 2009b. Emergency Food Security Assessment Handbook. Rome: World Food Programme.

WFP. 2009c. Rural South Kordofan Food Security Assessment, March 2009. Final Report. Khartoum: World Food Programme Sudan.

WFP. 2010. Emergency Food Security Assessment (ESFA). South Kordofan. Sudan. Rome: World Food Programme.

Williams, C. R. 1986. *Wheels and Paddles in the Sudan (1923-1946)*. Edinburgh: The Pentland Press.

Willis, Justin. 2003. Violence, authority, and the state in the Nuba Mountains of condominium Sudan. *The Historical Journal* 46 (1), 89-114.

World Bank. 2007. Sudan Public Expenditure Review. Synthesis Report. Washington: World Bank.

World Bank. 2010. Rising Global Interest in Farmland - Can It Yield Sustainable and Equitable Benefits? Washington: World Bank.

Wörz, Johannes Georg Friedrich. 1966. *Genossenschaftliche und partnerschaftliche Produktionsförderung in der sudanesischen Landwirtschaft*. (Zeitschrift für Ausländische Landwirtschaft, Sonderheft Nr. 4). Frankfurt am Main: DLG.

Yassin, Mohamed Salih Mohamed. 2011. Sustainable development governance for the peoples of the Nuba Mountains, South Kordofan, Sudan. Unpublished MSc thesis. Faculty of Political Science & Faculty of Economics, University of Padua & University of Venice Cà Foscari, Padua & Venice.

Yūsif, Isḥāq Aḥmad. 2008. *Al-māḍī al-maᶜāš fī ǧibāl al-nūba "manṭiqat al-'aǧānǧ*. Al-Ḫarṭūm: Dār ᶜazza lil-našr wa al-tawzīᶜ.

Ismāᶜīl, Amīn Zakariyya. 2010. Bank al-ǧibāl mašrūᶜ waṭanī 'istratīǧī 'anǧaz bi-maǧhūdāt 'abnā' al-wilāya wa al-muhammišīn. <http://www.sudanile.com/2008-05-19-17-39-36/952-2010-04-24-06-57-57/17798-2010-08-13-14-07-36.html>, retrieved 09-05-2012.

Zenker, Olaf & Karsten Kumoll (eds.). 2010. *Beyond writing culture. Current intersections of epistemologies and representational practices*. New York & Oxford: Berghahn Books.