

**‘Strategic traditions’:
Changing livelihoods, access to food and child
malnutrition in the *Zambian Kafue Flats***

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Sonja Merten

aus Winterthur (ZH)

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Frau Prof. Dr. Brigit Obrist, Herrn Prof. Dr. Marcel Tanner, Frau Prof. Dr. Ursula
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Prof. Dr. Hans-Peter Hauri
Dekan

,Kwaamba nzi?

Kwina, inzala bulyo!'

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List of abbreviations

CBOH	Central Board of Health
CHW	Community Health Worker
CI	Confidence Interval
DFID	Department for International Development (U.K.)
DHS	Demographic and Health Survey
DOF	Department of Fisheries
FGD	Focus-Group Discussion
HAZ	Height for age z-score
HIV	Human Immunodeficiency Virus
ICC	Intraclass coefficient
NGO	Non-Governmental Organization
RHC	Rural health center
TBA	Traditional Birth Attendant
WAZ	Weight for age z-score
WHO	World Health Organization
WHZ	Weight for height z-score
UNZA	University of Zambia
ZAWA	Zambian Wildlife Authorities
ZMK	Zambian Kwacha

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From left to right: Veronica Kaumba, Eslon Hinkandya, Winnie Kazoka, Makondo Chivyindi, Deffent Shikapande, Cosmos Holo, Chikoti Mwanambule, the local research team

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Household in Mbeza

Summary

Zambia has experienced a burst of industrial development which started already in the 1920s. Large-scale copper-mining made the country to one of the most rapidly ‘modernizing’ states, and during the 1960s and 1970s it was ranked as “middle-income country”. When the terms of trade for copper declined sharply after the oil-shock in the 1970s, the Zambian economy began to deteriorate. After the millenium turn, Zambia figured among the ten poorest countries of the world. The economic collapse has left the promises of modernity unfulfilled. Meanwhile a world of plural values and modes of life had emerged.

The crisis was mirrored on the local level in urban and rural areas. When agricultural cash-crop production, supported by subsidies, as well as veterinary services were established (starting during colonial administration), the Kafue Flats’ agro-pastoralists profited from these achievements. At the same time the state took over the control of natural resources. With the beginning economic crisis the state failed to maintain its services, leading to a declining agrarian production. Also the use of natural resources (fish, wildlife) was only marginally controlled. This “open access” constellation attracted migratory fishermen and hunters from the urban areas. These developments jeopardized the local food basis.

Livelihoods, food security and nutrition

Nutrition in the rural areas of the Zambian Kafue Flats still depends to a large extent on subsistence production. But several pillars of the diversified livelihoods of the local Ila/Balundwe and Tonga people, the former once famous for their wealth in cattle, have recently been undermined by rapid economic and environmental change. Nevertheless, local livelihoods still heavily rely on natural resources of the surrounding area.

Vulnerability of specific parts of the population in times of food shortages cannot be separated from social transformations due to changes in political power, institutions, economic and environmental setting and demography. Indirect consequences, such as the splitting up of large extended families into many individual small households without the old liabilities leading to a new power-equilibrium and a decline in social security, gave rise to a local “traditionalism” among both the wealthy and the poor. The affluent are primarily trying to maintain favourable local inheritance and marriage regulations (polygyny) in order to legitimise their inherited and acquired property and access rights to pasture and fisheries, referring to an ethnicity and cultural heritage discourse. Meanwhile, many among the impoverished equally follow the traditional lifestyle, lacking practicable alternatives and hoping to restore at least partly their former wealth. The participation in agricultural intensification programs was not considered profitable enough during the last few years, seen the low market prices and lack of former subsidies. Hence, local livelihood strategies and experiences are often contesting the dominant development discourse. This is also shown in the contradictory way how local people and NGO representatives were interpreting the 2002/3 food crisis. While local rural people perceived the traditional pastoralists households as most resilient to the crisis, extensive pastoralism was made responsible for the lack of staple crops in the prevailing development rhetoric. But our data analysis of food consumption and caloric intake equally support the local interpretation that traditional pastoralists (including the majority of the polygynous households) were least affected by the crisis, as were households with more diversified strategies. These local experiences, contradicting dominant agricultural and development policies, have to be considered as reasons for low adherence to programs aimed at mitigating food insecurity.

Apart from recurrent droughts over the last years and a decreasing maize production, the main staple and cash crop, many additional food items are no longer available due to the increasingly limited access to natural resources such as wildlife or fisheries, and because of a cattle disease (*theileria parva*), which killed large parts of the livestock in the area. In addition, the consumption of wild bush-plants (fruits, nuts, tubers and leaves) has decreased. Alternative food items need to be purchased at the cost of selling part of the maize yields. This led to a nutritional transition towards a less diversified diet in addition to periodical famines, promoting chronic as well as acute malnutrition.



S.K., 15 months old, Mbeza

Malnutrition between local and scientific concepts

While child malnutrition is a recognised problem and affects many families, most mothers are well aware of how they should complement the foods for their children with purchased products. However, many mothers cannot afford to buy food on a regular basis, or they might not have the bargaining power to convince their husbands to spend money on expensive foods for their children, implying that child malnutrition is not limited to poor families. Although only few mothers have not been exposed to health education encompassing information about a “balanced diet”, many remain with little possibility to actually provide it. Women are responsible for infant and child feeding, but do not necessarily control the allocation of money, and only partly the purpose of subsistence products – whether they are produced for consumption or for sale. This does not remain without impact on child nutrition, neither on the interpretation of malnutrition symptoms as socially produced. It is partly in the view of these constraints that it has to be understood how many parents interpret signs of malnutrition as *masoto*, a traditional illness, which is perceived as being caused by a transgression of one of the parents, such as the violation of the postpartum abstinence rule. Contrary to malnutrition, which can be prevented only if diverse food items can be provided on a regular basis implying the availability of cash, *masoto* can be prevented by respectable behaviour. It has however been shown that *masoto* did not interfere with the provision of an adequate diet taking up information of health professionals. It neither prevented the consultation of health facilities in the vast majority of the cases. But the possibilities to obtain assistance from the health sector were limited, as only few children could be included in special feeding programmes.

There are several aspects of *masoto*, which help to understand the persisting attractiveness of the concept. The relatively recent impoverishment has left people with the hope to restore the

lost wealth, only partly admitting their poverty, which is evoking shame. Illegitimate behaviour, although equally associated with shame, is easier to deal with than poverty in a region, which was known to be rich throughout the country until recently. In addition, it draws on a well-established way of solving potential intra-household conflicts involving both parents under the custody of other community members (e.g. traditional healers), satisfying moral and religious concerns. On the contrary, conflicts about money rather remain to be solved between husbands and wives alone, whereby men are in the decision-making position. *Masoto* as a clear representation of an illness asking for defined action, provides mothers with more bargaining power towards husbands and relatives, than a mere begging for food. In order to understand why the reference to a local illness concept such as *masoto* is widespread despite health education on infant nutrition, this situational framework has to be considered.

Emerging health impacts of poverty and food insecurity: fish-for-sex exchange

The impoverishment and recent livelihood changes have led to an increasing attractiveness of the fisheries as a resource exploitable for everyone to meet everyday livelihood needs. For many households in the Kafue Flats, fish became an important protein source to rely on. Due to the increasing prices of fish in the urban and rural centres compared to other goods (increasing relative price), the area is facing a massive immigration of fishermen from other areas of the country and from urban centres, and especially fish trade has become a lucrative income generating option for local men and women. In the Kafue Flats, many women are relying on an own income. Fish trade, due to the good market price and the low investments needed, provides good opportunities especially in the late dry and early rainy season, when maize prices begin to increase. Partly, though, fish is traded in form of fish-for-sex exchange, a form of transactional sex, exposing female fish traders and fishermen to a high risk for HIV transmission. Despite the increasing awareness of HIV/AIDS in the permanent villages, where people are visibly dying from AIDS, the mobile fishing community along the river and lagoons is widely ignoring the risk. First, HIV/AIDS prevention campaigns primarily rely on a Abstinence, Be faithful, or Condom use approach (ABC campaigns). For many of the mobile fishermen, often coming from other areas of the country and from urban areas, A and B do not provide an attractive option, and condoms are hardly available in the fishing camps. Lacking the visibility of AIDS patients due to high mobility, the risk is underestimated.

Local female fish traders, on the other hand, are increasingly exposed to stigmatisation in their villages, as they are seen as a threat to the community. Despite their awareness of the risk to become infected with the HI-virus, women's options to protect themselves are very limited; it has to be acknowledged that many women cannot afford to turn down an offer

where they can get free fish, worth several weeks of maize consumption, in exchange for sex. Seen the good opportunities of fish trade, and especially fish-for-sex exchange throughout the year without any long-term commitment needed, it is unlikely that income-generating projects will be able to completely substitute fish-for-sex deals. Moreover, the increasing moral pressure on women rather motivates them to hide their activities than to stop. Women who get involved in such arrangements have different strategies to escape the increasing moral pressure of their communities as well as of health professionals and churches. First of all, they deny any involvement in fish-for-sex exchange. In a local setting, where “traditions” are still valorised, some women may refer to a transformed traditional institution regulating extra-marital sexual relations, thus avoiding the association with prostitution, in order to gain legitimacy towards the community and themselves, and to maintain their reputation.

In the Kafue Flats setting, HIV/AIDS prevention approaches, which primarily rely on moral messages and empowerment, are showing a low impact. Condoms, on the other hand, are hardly available in the fishing camps, although there is a clearly expressed demand. Meanwhile, the HIV/AIDS prevention discourse is taken up by diverse other local actors who have their own agenda. Apart from a real concern with HIV/AIDS, which is of course a main worry, prevention messages are additionally used to give legitimacy to own interests especially in relation to the planning of interventions strengthening economic alternatives to the fisheries. Hence, the narrative of the dangers, which fish-for-sex deals are encompassing, is locally used as an argument to serve heterogeneous purposes, and to attract donors, while it does not always include the interests of those who are most exposed to HIV, namely the female fish traders and the fishermen.

Zusammenfassung

Zambia erlebte seit den 1920er Jahren einen industriellen boom. Kupferabbau verhalf dem Land zu einer raschen Modernisierung: während der 1960er und 70er Jahre galt Zambia als Land mit mittlerem Einkommen. Als der Absatz von Kupfer in Folge der Ölkrise Mitte der 1970er Jahre einbrach, begann ein rascher wirtschaftlicher Niedergang. Nach der Jahrtausendwende befand sich Zambia unter den 10 ärmsten Ländern der Welt, und der ökonomische Kollaps hatte viele Versprechen der Moderne unerfüllt gelassen. Gleichzeitig war eine veränderte Welt mit multiplen Wertsystemen und Lebensweisen entstanden.

Die ökonomische Krise spiegelte sich auch auf lokaler Ebene, sowohl im urbanen wie ländlichen Kontext. Als die marktorientierte landwirtschaftliche Produktion, flankiert von Subventionen, eingeführt worden war, und auch veterinärmedizinische Dienste angeboten wurden, profitierten die Einwohner und Einwohnerinnen der Kafue Flats, die von Landwirtschaft und Viehzucht lebten, stark davon.

Gleichzeitig hatte der Staat auch die Kontrolle über natürliche Ressourcen (Fischgründe, Wildbestände) übernommen. Mit Einsetzen der Wirtschaftskrise war der Staat zunehmend nicht mehr in der Lage, seine Dienstleistungen aufrecht zu erhalten. Auf der einen Seite war eine Abnahme der Agrarproduktion die Folge. Andererseits konnte auch die Nutzung natürlicher Ressourcen (Fisch, Wild) nur mehr schwach überwacht werden. Diese “open access” Situation zog migrierende Fischer sowie Jäger aus urbanen Gebieten an. Alle diese Entwicklungen unterminierten die lokale Ernährungsgrundlage.



O.S. and M.C. cooking vegetables, Mbeza 2004

“Livelihoods”, Ernährung und Ernährungssicherheit

Die Ernährungsgrundlage in ländliche Gegenden Zambias ist nach wie vor zu einem grossen Teil von Subsistenzproduktion abhängig. Mehrere Eckpfeiler der diversifizierten Lebensgrundlage der lokalen Ila/Balundwe und Tonga Agro-pastoralisten, erstere bekannt für ihren Viehreichtum, wurden in den letzten Jahren durch die Krise grundlegend erschüttert., nach wie vor sind sie jedoch stark von den natürlichen Ressourcen ihrer Umgebung abhängig. Die Vulnerabilität verschiedener Bevölkerungsgruppen während einer Nahrungsknappheit kann nicht von lokalen sozialen Veränderungen getrennt werden, die mit Veränderungen in der Politik, von Institutionen, Umwelt und Bevölkerungsentwicklung abhängen. Indirekte Auswirkungen, wie das Aufteilen der Grossfamilien in individualisierte Kleinhaushalte ohne die früheren Verpflichtungen führte zu veränderten Machtkonstellationen und leitete eine Abnahme an sozialer Sicherheit ein. In diesem Kontext wurde ein lokaler “Traditionalismus” sowohl für die wohlhabenden Viehbesitzer, wie auch die Armen wichtig. Die Reichen versuchten primär, die Weiderechte zu ihren Gunsten auszulegen, indem sie auf “traditionelle” Regelungen hinwiesen. Durch diese Strömung wurden indirekt auch andere “traditionelle” Regelungen, wie etwa die Polygamie, legitimiert. Bei einem Teil der verarmten Bevölkerung fand die ideelle Unterstützung der traditionellen extensiven Viehwirtschaft Gehör, weil sie sich nach dem Verlust von Alternativen erhofften, mit Vieh ihre Situation wieder zu verbessern. Partizipation in landwirtschafts Projekten, welche auf intensivierte Produktion abzielten, wurde demgegenüber, angesichts der tiefen Marktpreise und den fehlenden Subventionen, als zu wenig profitabel angesehen, Demzufolge widersprachen locale livelihood-Strategien oft dem dominierenden Entwicklungsdiskurs. Dies zeigte sich auch in der widersprüchlichen Art und Weise, wie Entwicklungsexperten und lokale Bevölkerung die Ernährungskrise 2002/2003 interpretierten. Während die Lokalbevölkerung die traditionellen Viehzüchter als am widerstandsfähigsten in der Krise betrachtete, wurde im Entwicklungsdiskurs eben diese Produktionsweise für den Mangel an Mais verantwortlich gemacht. Unsere Analyse des Lebensmittelkonsums bestätigte die Interpretation der lokalen Bewohner und Bewohnerinnen, dass die Viehzüchter, einschliesslich der polygamen Familien, die Krise am besten überstanden, da sie über mehrere Substitutionsstrategien verfügten. Diese Erfahrungen, welche den Annahmen von vielen Entwicklungsfachleuten widersprachen, müssen als Grund für eine relativ geringe Teilnahme an Entwicklungsprojekten berücksichtigt werden.

Neben wiederkehrenden Dürren während der letzten Jahre, und einer Abnahme der Maisproduktion, welches sowohl das wichtigste Lebensmittel, wie auch das wichtigste “cash-

crop" ist, wurden auch andere Lebensmittel immer weniger zugänglich. Dies war der Fall für Milchprodukte, Fisch oder Wildfleisch; letzteres wurde durch veränderte Jagd- und Fischereigesetze bewirkt. Nicht zuletzt muss eine Viehseuche erwähnt werden, (*theileria parva*), welche zu grossen Viehverlusten geführt hat. Auch der Konsum von Wildfrüchten und -Pflanzen ist zurückgegangen. Als Ersatz müssen Lebensmittel gekauft werden, meist finanziert durch die Maisproduktion. Dies hat zu einer Veränderung der Ernährungsgrundlage geführt, welche negative Folgen für die Gesundheit hat.

Unter- und Mangelernährung zwischen lokalen und wissenschaftlichen Erklärungen

Mangelernährung bei Kindern wurde als Problem erkannt und betraf viele örtliche Familien. Die meisten Mütter waren mit den Botschaften zur angemessenen Säuglings- und Kinderernährung vertraut. Da es aber nötig war, ergänzende Nahrungsmittel zu kaufen, um eine ausgewogene Ernährung garantieren zu können, fanden sich viele Mütter in der Situation wieder, sich dies nicht regelmässig leisten zu können. Es fehlte auch vielen Frauen an der nötigen Verhandlungsmacht gegenüber den Vätern der Kinder, um sie von der Wichtigkeit zu überzeugen, Geld für Lebensmittel auszugeben. Dies impliziert auch, dass Mangelernährung nicht nur in armen Familien vorkam. Obwohl weitaus die meisten Frauen das Konzept der ausgewogenen Ernährung kannten, hatten viele nicht die Möglichkeit, dies umzusetzen. Frauen waren zwar verantwortlich für die Kinderernährung, konnten aber nicht unbedingt über die Mittel verfügen. Diese Tatsache wirkte sich auf den Ernährungszustand der Kinder entsprechend negativ aus und bewirkte indirekt, dass sich "traditionelle" Erklärungen, welche sich aus der sozialen Situation der Mütter ableiteten, bewährten. Diese Einschränkungen, welchen Mütter ausgesetzt waren, müssen berücksichtigt werden, um zu verstehen warum viele Mütter Anzeichen von Unter- oder Mangelernährung bei ihren Kindern als *masoto* interpretierten. *Masoto* ist ein lokales Krankheitskonzept, welches von der Überschreitung einer Regel (keine neue Schwangerschaft während ein früheres Kind noch gestillt wird) ausgelöst wird. Im Gegensatz zu Mangelernährung, die nur durch die Verfügbarkeit von Lebensmitteln vermieden werden kann, ist *masoto* durch korrektes Verhalten zu verhindern. Es hat sich aber gezeigt, dass auch bei *masoto* den Empfehlungen der Klinik gefolgt wurde, wenn die Mutter über genügend Geld verfügte. Auch wurde die Klinik aufgesucht, wenn das Kind von der Mutter als krank angesehen wurde, fast immer unabhängig von der vermuteten Ursache.

Verschiedene Aspekte von *masoto* sind für das Aufrechterhalten des Konzepts von Bedeutung. Die Verarmung weiter, aber nicht aller Kreise der Bevölkerung, die erst relativ kürzlich stattfand, hatte bei den Betroffenen Scham zur Folge; *masoto* war zwar auch

schlecht angesehen, aber weniger mit sozialem Ausschluss verbunden als Armut. Zudem löste *masoto* eine Reihe von Behandlungsschritten aus, welche auch den Vater einschloss, unter Beobachtung von anderen Verwandten. Für die Beschaffung von Lebensmitteln hingegen konnte die Mutter nur bedingt auf die Unterstützung der Verwandten zählen, da "Mangelernährung" als weniger gefährlich wie *masoto* angesehen wurde.

Indirekte Folgen der zunehmenden Armut und Ernährungsunsicherheit: Fisch gegen Sex

Die Verarmung und die Veränderungen der Lebensbedingungen haben die Fischerei als Ersatzstrategie wichtig werden lassen. Fisch wurde zu einer wichtigen Proteinquelle von Haushalten in den Kafue Flats. Durch die hohen Profite, die durch Fischhandel erzielt werden konnten, und die zunehmende Verdrängung der Frauen aus der Fischerei entlang der Zuflüsse des Kafue Rivers, haben insbesondere auch Frauen begonnen, mit den kommerziellen Fischern zu handeln. Zum Teil wird Fisch jedoch im Austausch gegen Sex erworben, wobei sich die Frauen wie die Fischer einem hohen Risiko aussetzen, sich mit dem HI-Virus zu infizieren. Um ihre "Armutspstitution" zu legitimieren, sprechen die Frauen zum Teil von "traditioneller Heirat"; die Stigmatisierung von Frauen, welche mit Fisch handeln, hat zugenommen. Es ist jedoch klar zurückzuweisen, dass Frauen solche Arrangements wegen solcher traditioneller Regelungen eher eingehen; Grund ist die Armut und die sehr hohe Profit, der mit Fischhandel erzielt werden kann.

Part I Introduction

INTRODUCTION

Undernutrition has remained one of the most pressing issues in developing countries: In 2004 undernutrition accounted for 21.4% of child mortality of children <5 years of age worldwide. It has been estimated that in Africa alone 56.9 Mio children are stunted, 31.1 Mio are underweight and 3.9 Mio are severely wasted.

Structural inequalities are widely responsible for the deterioration in living conditions in many rural African areas, where only few have been reached by the benefits of modernization. The technical approaches many public health nutrition programs choose for addressing undernutrition (e.g. fortification programs) cannot solve the problem of unequal access to resources. It is the aim of this study to contribute to a better understanding of the processes, which regulate access to resources on the community, household, and individual level, and to explore other socio-cultural factors, which may influence nutrition. More specifically, the local institutional framework, local (gendered) power relations and prevailing ideologies/worldviews are investigated.



After harvesting, Mbeza 2004

Under- and malnutrition: major health impacts

Children are most susceptible to food shortages. Undernourished children are more likely to have impaired immune systems (Duggan & Fawzi, 2001), poorer cognitive development (Grantham-McGregor & Baker-Henningham, 2005), and show higher anxiety scores, higher chronic and acute illness counts and behavior problems (Alaimo, Olson, & Frongillo, 2001; Weinreb, Wehler, Perloff, Scott, Hosmer, Sagor et al., 2002). Half of all child deaths worldwide are associated with malnutrition, with acute respiratory infections, diarrhoea and malaria being the three major causes for death (Black et al., 2008). Undernourished children will be less productive as adults, and greater susceptibility to diet-related chronic diseases such as hypertension and coronary heart disease later in life; mothers who have experienced impaired growth themselves are more likely to give birth to low birth-weight babies (summarized by Acc/Scn, 2000; Pelletier, Frongillo, Schroeder, & Habicht, 1995; Smith & Haddad, 2000). Moreover, mothers with low fat stores are producing children with impaired growth (Neumann & Harrison, 1994).

Protein-energy malnutrition occurs mainly during the first two years of life, and is characterized by impaired growth and/or thinness (low weight for age: underweight; low height for age: stunting; low weight for height: wasting). Severe malnutrition is typified as marasmus (severe wasting), as marasmic kwashiorkor (severe wasting in the presence of edema) and kwashiorkor (malnutrition with edema) (Who, 2000a); these conditions are life-threatening and require specialized treatment.

Introducing supplements too early in infancy and inadequate weaning practices are major problems for both energy intake and micronutrients. Exclusive breastfeeding for the first six months of life, followed by continued breastfeeding together with the introduction of appropriate complementary foods, were shown to decrease child morbidity and mortality and to improve growth (American Academy of Pediatrics, 1997; Betran, de Onis, Lauer, & Villar, 2001; Onyango, Esrey, & Kramer, 1999; Who, 2000b). During and after the weaning period, micronutrient deficiencies continue to play a major role in child health and nutrition status (for a recent overview see Müller & Krawinkel, 2005). For example, vitamin A supplementation has reduced child mortality, and possibly morbidity, from infectious diseases, although a direct causal relationship remains controversial (Fawzi, Chalmers, Herrera, & Mosteller, 1994; Rahman, Vermund, Wahed, Fuchs, Baqui, & Alvarez, 2001). Zinc supplementation lowers the incidence of diarrhoea and reduces its severity, and sustains adequate growth (Bahl & et al., 2001; Bhutta, Black, Brown, Meeks-Gardner, Gore, Hidayat

et al., 1999); Iodine deficiency could be successfully targeted in many regions through the fortification of salt.

Table 1. Causes, manifestation, management and prevention of the major micronutrient deficiencies (Source: Müller and Krawinkel 2005)

Nutrient	Essential for production or function of	Causes of deficiency	Manifestation of isolated deficiency	of Management and prevention
Iron	Hemoglobin, Various enzymes, Myoglobin	Poor diet, raised needs (e.g., while pregnant, in early childhood), chronic loss from parasite infections (e.g., hookworms, schistosomiasis, whipworm)	Anemia and fatigue, impaired cognitive development, reduced growth and physical strength	Foods richer in iron and with fewer absorption inhibitors, iron-fortified weaning foods, low-dose supplements in childhood and pregnancy, cooking in iron pots
Iodine	Thyroid hormone	Except where seafood or salt fortified with iodine is readily available, most diets, worldwide, are deficient	Goiter, hypothyroidism, constipation, retarded growth, endemic cretinism	Iodine supplement, fortified salt, seafood
Vitamin A	Eyes, (immune system)	Diets low in vegetables and animal products	Night blindness, xerophthalmia, immune deficiency, increased childhood illness, early death, contributes to development of anemia	More dark-green leafy vegetables, animal products, fortification of oils and fats, regular supplementation.
Zinc	Many enzymes, immune system	Diets poor in animal products, diets based on refined cereals (e.g., white bread, pasta, polished rice)	Immune deficiency, Acrodermatitis, increased childhood illness, early death, complications in pregnancy, and childbirth	Zinc treatment for diarrhoea and severe malnutrition, improved diet

Main reasons for micronutrient deficiencies are lack of diversity in diet and parasite or chronic gastro-intestinal infections. Intervention ranges from the promotion of home gardening, small livestock production, de-worming campaigns and the proper management of diarrhoeal diseases, to the fortification of staple foods. If a child shows impaired growth, intervention should take place as early as possible (Allen, 1994). Catch-up growth is possible if nutrition is adequate, although the exact mechanism is unclear (Golden, 1994; Neumann & Harrison, 1994; Wi & and Boersma, 2002).

The concept of food (in)security

A prerequisite for adequate nutrition is access to food. Food production, supply and entitlements define household and individual food security, whereby the concept of food

security has experienced an expansion from a supply-focused towards an entitlement-focused approach.

Food supply, environmental hazards and demography

Pre-1970, food security was mainly considered in terms of national and global food supplies (Frankenberger, 1992), in which population growth and environmental hazards played a major role as maintained by advocates of a Malthusian perspective (Caldwell, 1999). Supply shortfalls in Africa were regarded as created by production failures caused by drought and desert encroachment (Davies, Buchanan-Smith, & Lambert, 1991). Links were made to global climatic and demographic change. A "green revolution" (hybrid, drought-resistant monoculture crops and irrigation) should increase agricultural production and productivity, later also taking consideration of local settings ("triple green revolution", Acc/Scn, 2000). However, technical solutions alone could not solve problems of food supply, which were not only a consequence of failure in agricultural production, climatic change and demographic growth. In addition to production local food storage and distribution systems need to be functional. Anthropologists emphasized that indigenous production systems in the high-hazard environments of semi-arid zones were adapted to cope with climate-induced crises (Amborn, 1987; Lipton, 1982; Netting, 1993; Richards, 1985). Risk-minimizing strategies of producers had existed throughout the region. This included diversified food production (combination of crops, intercropping, high diversity within one crop), long-term food storage systems characterized by various institutions restricting sales, and the timing of sales on the household level (e.g. Lipton, 1982; Richards, 1985; Netting, 1993; Berry, 1993; Haller, 2001). Indigenous food systems started to alter with their introduction in a larger market system: cash crop production was absorbing large parts of the workforce, limiting the ability to diversify crops, and household food storage as a security system decreased as sales increased (Amborn, 1987; Barrett, Reardon, & Webb, 2001; Michler, 1988). In sum, wrong market incentives, as well as institutional, political and government changes had affected local production systems negatively (Von Braun & Kennedy, 1994; De Bruijn & van Dijk, 1995; Haller, 2001). Additionally, political instability contributed to the collapse of food exchange systems of pastoralists and nomads, which distributed food surplus to regions with low yields (ibid).

Entitlement/access and household level

Sen's theory of food entitlement represented a paradigm shift in the way that food problems were conceptualized (Sen, 1981). It had become clear that even a guaranteed national or regional food supply did not automatically mean food security at household level. Socio-economic factors influence household food security: they relate to production, income, food-

sharing networks, and the ability to convert claims to resources successfully in material goods (Berry, 1989; Frankenberger, 1992).

Chambers proposed the concept of vulnerability to describe a households' limitation to cope with shocks such as droughts (Chambers, 1989). While this concept shifted the focus to the micro-level, too, it paid less attention to local power-relations and the historical political and institutional forces, which contributed to vulnerability differentials within societies. These issues were addressed in many detailed ethnographic studies, though, which investigated the political, economical and social processes that jeopardized indigenous food production and distribution systems in insecure environments (see e.g. Scudder, 1962; Berry, 1993; Vaughan, 1987; Vaughan & Moore, 1994). The processes that lead to changing conditions and livelihoods, determining household vulnerability, became central to development policies.

The livelihood approach

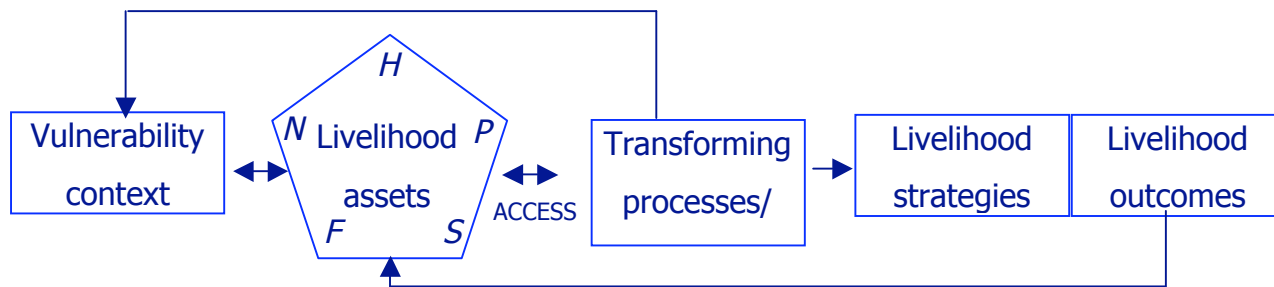
One of the most prominent attempts to combine a household vulnerability/resilience perspective and external forces is the Sustainable Livelihoods Framework (Figure 1), which became a key concept for development policies addressing food insecurity. It focuses on livelihood security to define a household's resilience to external shocks (Scoons, 1998; Ellis, 1998; DFID 1999). According to Ellis, livelihoods encompass material and social resources (or assets) required for a means of living. It is assumed that depending on their assets, households are more or less resilient to external shocks. The concept has the advantage that it allows a broader conceptualization of the options households have; less emphasis as compared to Sen's entitlement theory is put on local power relations and on intra-household inequality, though (Bingen, 2000; Ellis, 2000).

The concept of sustainable livelihoods originated in societies, which rely on natural resources for subsistence production, and where the sustainability of these resources is crucial. It is based on a framework centering on *livelihood assets*, which are influenced by the *vulnerability context* and *processes and structures* (see Figure 1). *Livelihood assets* comprise human, social, physical, financial and natural capital. Very briefly summarized, natural capital includes natural resources, which provide a basis for production; physical capital comprises the basic infrastructure and means for production. Financial capital is needed to invest in a livelihood strategy, and human capital includes the skills, knowledge, and physical (bodily) capacity needed for a particular income generating activity. Social networks, membership in organizations and relations of trust characterize social capital.

The *vulnerability context* encompasses any type of external factors such as governance, population trends, seasonality, price structures, and others, which are not directly under the

influence of an individual actor. Under *transforming structures* fall organizations and bodies, which legitimize, enforce, monitor and sanction formal regulations (institutions).

Sustainable Livelihoods Framework DFID (simple model)



Although the sustainable livelihoods framework covers central issues, the original concept has been criticized as paying little attention to the process how people gain access to livelihood assets in a historically produced socio-political context of power, and how its transformation into livelihood outcomes is socially negotiated (Ellis, 2000). Institutional change (e.g. changing land rights and government regulations of agrarian production) is particularly relevant for livelihood security. Access to natural resources has altered through the change of formal and informal regulations, creating new winners and losers (Bastiaansen, De Herdt, & D'Exelle, 2005; Haller, 2002). The role of institutions for food security will be further discussed in the theory section.

Cross-cutting issues regarding food (in)security

Gender

In rural Africa women are main food producers (Quisumbing, 1996). Considering women's responsibility for household food production and preparation, the importance of enabling women to obtain access to resources has been re-emphasized. Local institutions, the legal situation, political and ideological structures are important factors influencing women's access to intra-household resources. Access might be restricted due to formal or informal institutions; informal access rights should be looked at in the assessment of food security (Meinzen-Dick, Brown, Sims Feldstein, & Quisumbing, 1997).

Market incorporation and changes in technology have contributed to gender inequality by excluding women from access to resources such as land and from production technologies (intensive modern agricultural systems, which use ploughing). Cash-crop production was taken over by men diverting land and labor (often female labor) from subsistence production (Berry, 1993; Etienne, 1977; Udry, Hoddinott, Alderman, & Haddad, 1995; Vaughan &

Moore, 1994). Moreover, predominantly men own livestock, which is one of the most important household assets in many rural African regions with a potential to buffer a food crisis (Hoddinott & Kinsey, 2003). But livestock is at least as important for the regular supply of animal source foods: Generally, a family diet, which includes animal source foods have had positive effects on the growth of children (Bwibo & Neumann, 2003; Demment & Allen, 2003; Neumann & Harrison, 1994; Nicholson, Mwangi, Staal, & Thornton, 2003; Rivera, Hotz, Gonzalez-Cossio, Neufeld, & Garcia-Guerra, 2003). However if men control resources that serve as a basis for nutrition they are less likely to skew them to secure nutrition than women (Meinzen-Dick et al., 1997).

Apart from gender inequalities in access to resources, which may exacerbate already low levels of nutrition, also maternal characteristics like education and social status influence child growth (Hadley, 2005b; Lindtjorn, Alemu, & Bjorvatn, 1993; Owusu, Lartey, de Onis, Onyango, & Frongillo, 2004; Quinn, Chiligo-Mpoma, Simler, & Milner, 1995; Reyes, Pérez-Cuevas, Sandoval, Castillo, Santos, Doubova et al., 2004).

However gender inequality does not necessarily translate into preferential treatment of boys or girls. A review by Haddad et al. found practically no gender differences in child nutrition, education and access to health care in studies done in Africa (Haddad, Peña, Nishida, Quisumbing, & Slack, 1996).

HIV/AIDS

There are many links between HIV/AIDS and food insecurity. AIDS accelerates the cycle of inadequate dietary intake and disease: it raises nutrient requirements and erodes the immune system, whilst at the same time diminishing a sick person's capacity to produce food. Environmental shocks and policy failure have been exacerbated by HIV/AIDS: reduced food availability was triggered through loss of labor, land, or livestock sale. The income of households with sick people decreased, expenses on medical care increased, and the affected persons shifted to less labor intensive production, which contributed to the reduction in quantity and quality of food (Gillespie, Haddad, & Jackson, 2001; Khogali, 2002).

Female impoverishment, or simply women lacking access rights to different types of resources, creates another detrimental link to HIV/AIDS. One of the ways of generating an income or sustaining a family is transactional sex, which has to be seen in the context of food poverty, exposing the women and their partners to HIV (Luke & Kurz, 2002).

Gaps: local views, institutions, power and culture

Gaining access to resources

Despite a considerable body of literature on the role of access to resources for food security (e.g. Balk, Storeygard, Levy, Gaskell, Sharma, & Flor, 2005; Davies, 1995; Economic Commission for Africa, 2004; D. Maxwell, Levin, Armar-Klemesu, Ruel, Morris, & Ahiadeke, 2000; D. G. Maxwell & Wiebe, 1999; Meinzen-Dick et al., 1997; Pfeiffer, Gloyd, & Ramirez Li, 2001) little is known about how access is locally negotiated, who profits and who loses on the household level, and how this impacts nutrition. Also access to common pool resources such as pasture or fisheries is seldom considered a factor influencing food security in contrast to land ownership.

Earlier studies on socio-economic inequalities within pastoralist communities found no clear effect on nutritional outcomes (see W. D. Sellen, 2003). This may be partly due to difficulties in assessing wealth and food intake in societies, which rely strongly on subsistence production and informal income-generating activities. Moreover, the ability to cope with crises is not captured if only assets are considered. Changing access to resources in times of scarcity should be considered, too.

A series of studies addressed livelihood strategies, highlighting the following aspects: the type of food which is available (Bwibo & Neumann, 2003; Neumann, Bwibo, Murphy, Sigman, Whaley, Allen et al., 2003; Nicholson et al., 2003), seasonal fluctuations in food security (Hadley, 2005a; Daniel W. Sellen, 2000), different livelihood strategies and migratory patterns (Bentley, Jasienka, & Goldberg, 1993; Hadley, 2003), and seasonal cycles of infection affecting nutritional status (Schelling, Daoud, Daugla, Diallo, Tanner, & Zinsstag, 2005; Shell-Duncan & Obiero, 2000). But overall, access to resources and the conditions of changing access as influencing nutrition have not been extensively investigated.

The household context

Livelihood strategies are also reflected in household composition. Earlier anthropological literature pointed out that polygyny was an important way to increase and diversify household production in sedentary societies, while polygyny was rare among hunters and gatherers (see e.g. Brabin, 1984). But the household composition has been found to influence the nutritional status of children controversially: In several studies extended families and polygyny have been related to the occurrence of child undernutrition (Brabin, 1984; Gillett-Netting & Perry, 2005; Hadley, 2005b; Reyes et al., 2004; D. W. Sellen, 1999; Strassmann, 1997) while other research found associations to be age-dependent and contingent upon wealth (Amankwaa, Eberstein, & Schmertmann, 2001; Gyimah, 2005; Ukwuani, Cornwell, & Suchindran, 2002).

Polygyny may offer one of the most efficacious ways of organizing rural small-scale production, if labor is scarce, expensive and unreliable: On the one hand higher living standard in polygynous households and a lower workload may contribute to women's acceptance of polygyny as the better of two suboptimal options (Madhavan, 2002; Meekers & Franklin, 1995; Ware, 1979). But on the other hand conjugal relationships may be more conflictive in polygynous households, leading to intra-household inequalities (Brabin, 1984) and to maternal distress (Al-Kranawi, 2001) and less support for children from the side of the husband (Meekers & Franklin, 1995).

Whether intra-household conflicts are cumulating in polygynous households, and how this affects childcare and nutrition remains to be explored. Generally, relatively little is known how the responsibility for children is negotiated in a family and how conflicts are dealt with.

The role of culture

It has further been hypothesized that there are cultural differences in the coping with severe food insecurity. Several anthropological studies investigated local perceptions and practices related to undernutrition and hunger. Scheper-Hughes in her seminal study on maternal thinking in a Brazilian shantytown described selective child neglect in conditions of extreme poverty (Scheper-Hughes, 1985). In contrast to Scheper-Hughes scholars who did research in an African context concluded that mothers were not indifferent to the death of a child, which they could not prevent, and questioned the notion of deliberate neglect (Dettwyler, 1994; Einarsdottir, 2000). Instead several studies pointed at the shame mothers experienced if they were not able to feed and care for their children adequately (Howard & Millard, 1998; Mabilia, 2000).

In studies on child diarrhoea (a main cause and consequence of undernutrition) the notion of a culturally based delay in treatment seeking was brought up, too (Kauchali, Rollins, & Van den Broeck, 2004; Mabilia, 2000). The socio-economic and ideological context, in which mothers experienced a lack of food, or child illness, and which influenced their decision-making, was however rather marginally considered in these studies. The same is true for the way how mothers mobilize resources to meet their children's nutritional needs and eventually seek treatment.

Missing contexts: localized power, social interaction and institutions

In sum, it can be concluded that only few studies of food insecurity and child nutrition addressed questions of access to resources in view of local power-dynamics, intra-household responsibilities and bargaining-power under consideration of culturally shaped beliefs. Caretakers, usually mothers, have a limited range of options how to become active in order to

meet their children's needs. Social norms, formal and informal rules regulating access to resources or kinship obligations are playing an important role for decision-making, as they prestructure action, on one side limiting options, on the other side facilitating interaction through defining the 'rules of the game'. The analysis of these institutions (rules, norms, regulations) is however crucial for the development of locally adapted interventions.

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THEORY

As outlined in the introduction the causes of child undernutrition are complex, multidimensional, and interrelated, situated along a dependence chain (Caputo, Foraita, Klasen, & Pigeot, 2002; Smith & Haddad, 2000). Smith and Haddad define three levels of causes of undernutrition: immediate (e.g. actual food consumption, care, illness), underlying (e.g. maternal education, household income, access to the health system), and basic (e.g. per capita income, governance).

The purpose of this study is to explore the links between these levels. More specifically this thesis addresses two questions: first, it investigates maternal, household and livelihoods factors significant for undernutrition in a particular rural African context. Second it explores the processes and institutions that are interweaving these factors with more immediate causes of undernutrition – mainly food intake – addressing the negotiation of access to resources and social support in view of social hierarchies and (gendered) power-relations. These processes are always influenced by a more basic disposition including the wider political and economic context, and different worldviews.

Poverty and institutions

Undernutrition is closely linked to poverty. Bastiaensen (2005) reminds us that poverty is not a personal characteristic, but an institutional problem: human beings affected by poverty remain full agents in their environment, except that their agency is restricted, as for example in the case when people lose entitlements to land. If poverty or the action taken by poor people is to be tackled, it is important to direct attention towards the institutions that determine poor people's environment and opportunities (Bastiaensen, De_Herdt, & D'Exelle, 2005; Haller, 2002). Hence, many scholars agree upon the importance of institutional change for poverty alleviation (ibid, see also e.g. Haller & Merten, 2005; Maxwell & Wiebe, 1999; Meinzen-Dick, Brown, Sims Feldstein, & Quisumbing, 1997; Meinzen-Dick & Pradhan, 2002).

In view of this background this thesis aims to contribute to the discussion how institutions (norms, rules, regulations) relate to food security and child health by shaping action in an everyday context. According to scholars following the New Institutional Theory, the term *institution* refers to “conventions, norms, rights and rules on which society is based” (Knight, 1992; see also North, 1990; Ostrom, 2005) rather than to a particular social structure or network as defined by inclusion and exclusion criteria (Berry, 1989; Bingen, 2000). Throughout this thesis I apply the term *institution* for formal and informal norms and

conventions, rules, laws and regulations, which structure various kinds of interactions between individuals (e.g. markets; access to assets; marriage institutions; reciprocal kinship obligations), but also for rules within organisations and routines/procedures (e.g. treatment rituals). The definition would encompass institutionalized narratives (discourses) in case they shape and fix action, manifesting existing power-relations. However I do not use the term for organisations/bodies.

It has been argued that *institution* is too broad a definition. Ostrom (2005) counters this argument in her book about institutional diversity that institutions, although differing in formalization and internalization follow similar principles as regards their pertinence for everyday action: through facilitating action by, formally spoken, reducing transaction costs. Transaction costs comprise information about other actors' expected performance, and about monitoring and sanctioning of this performance, which increases trust that other actors actually behave in the expected way (Becker & Ostrom, 1995; Haller, 2002). Although it seems plausible that this is mainly important for more formalized rules and regulations, also internalized norms may be stronger in guiding individual action when the reaction of the social environment is predictable – be it oppressive in case of prohibited actions, or cooperative in case of expected coordinated action.

Institutional landscapes

In many rural African settings there is a strong rhetorical presence of modernisation, but only few people can actually profit from its achievements. Nonetheless, 'modern' ideas of development have been appropriated, whereby 'new' ideas were interpreted based on pre-existing notions of social and economic life. In this context local institutions (rules, norms, regulations) have partly been transformed as a consequence of the changing conditions and everyday activities are guided by plural value systems (Arce & Long, 2000; Bastiaensen et al., 2005; Comaroff & Comaroff, 1993; Ferguson, 1999; Haller, 2002; Haller & Merten, 2005). Arce and Long (2000:12) in their discussion about the influence of discourses and institutions of modernisation on local conditions point out that various practices and values have emerged as phenomena of appropriation processes. People interpret modernisation in various ways and take action according to the boundaries, conditions and implications of choice that they perceive:

Like the social practices associated with [counterwork to modernisation], heterogeneous counterpoint values are present as emergent properties of people-acting-in-settings, and as such they also constitute the conditions in which further actions and value choices are embedded. Everyday life is inherently pregnant with a wide range of contrasting as well as overlapping values, and to a degree people steer their way through them. The analytical challenge is to identify the boundaries, conditions and implications of choice. We need to explain, for example, why certain notions of modernity are

considered less efficacious than ‘non-modern’ beliefs and values in reference to specific problematic situations or action-contexts. And, on the other hand, we must explore the manner in which modernity discourses and institutions have contributed to the undermining of existing authorities and forms of political control and cultural legitimation. (Arce & Long, 2000:12).

Arce and Long point at the plurality of values that characterize African institutional frameworks, which are made up of institutions that are the product of different historical periods and based on varying meaning systems. African institutional ‘landscapes’ have variously been described as pluriform and polycephalous; ‘landscapes’ in the sense that “its outlook may totally change behind the next corner” (Bastiaensen et al., 2005). The patterns of power and domination which shape these ‘landscapes’ and the fact that ‘non-modern’ beliefs often prove more efficacious for weaker groups in particular action-contexts – are central to this analysis of (under-)nutrition in the context of livelihood change and multiple social norms.

The role of local institutional processes for access to resources

With respect to poverty reduction and food security, a large body of literature deals with the role of institutions regulating access to resources, ranging from land rights, usufruct rights, to inheritance rules (Agrawal, 2001; Bastiaensen et al., 2005; Becker & Ostrom, 1995; Ensminger, 1992; Haller, 2002; Maxwell & Wiebe, 1999; Meinzen-Dick et al., 1997; Meinzen-Dick & Pradhan, 2002; Niehof, 2004; Ostrom, 1990). In Africa rural livelihoods depend strongly upon natural resources like land, pasture, or fisheries, which used to be managed by common property regimes. However in many countries common property regimes were not maintained by the national governments. State control was introduced, while means to implement and control the newly set up property regimes were limited. This led to a de facto open access situation skewing access to more powerful users, increasing local inequalities: According to Bastiaensen, Haller, and Ensminger, people’s position in the bargaining processes around institutional rules and structures is crucial for their capability to obtain access to resources.

In other words, if the state lacks the capacity to provide adequate monitoring, while at the same time overruling local institutions for the management of common-pool resources, these resources are being overused because they belong no longer to anybody (Acheson, 2003; Ostrom, 1990, 2002). In such a situation of open access, resources will mainly be skewed towards the more powerful users.

Open access is however only partly explaining what is happening. It has to be considered that under weak state control, traditional institutions might be transformed and revitalised (Berkes

& Folke, 2000; Haller & Merten, 2005). But in the absence of a corporate body protecting the interests of the poor also ‘revitalized’ institutions will only be effective if powerful users enforce the rules – and thus to their benefit, potentially widening the poverty gap.

Additionally if we speak of institutions in context of development it is often implicitly assumed that they are pro-poor. This is however far from being self-evident. An institutional analysis more often relates to their effect on resource sustainability, which is of course important also for the poor, but not sufficient – they need to be given access rights, too. Pro-poor institutions – requiring institutional change – need to consider that smaller slices than before may be required, which are to the benefit of more people, and that subsidiary mechanisms to enforce one unique set of institutions must be developed, which seconds the interests of the poor reliably (Bastiaensen et al., 2005).

Another aspect linked to institutional processes is intra-household inequality. Resources are not necessarily equally distributed within a family. Marriage rules and gendered obligations towards children and other members of the family influence child health and nutrition, which may however be in contradiction to the control over resources: while women are considered responsible for child nutrition and health, men control the resources. It is assumed that less gender inequality is associated with a better nutritional status of the family (Chant, 2003; Chindime & Ubomba-Jaswa, 2006; Katapa, 2006; Kumar, 1978; female headed households see e.g. Onyango, Tucker, & Eisemon, 1994; Pfeiffer, Gloyd, & Ramirez_Li, 2001). On the other hand responsibilities seem increasingly less clearly divided between men and women as a consequence of social and economic change (Howard & Millard, 1998; Lemke, Vorster, Jansen van Rensburg, & Ziche, 2003; Madhavan & Townsend, 2007). Generally family and kinship structures have changed and taken on new forms, whereby responsibilities need to be newly established (Price & Thomas, 1999).

Social institutions – social capital

In the literature social contexts for health beyond material inequality have gained importance with the use of the concept of social capital in Public Health. A functional definition of social capital is given by Szreter (2004) who defines social capital as “norms of respect and networks of trusting relationships between people who are interacting across explicit, formal or institutionalized power or authority gradients in society”. However, both the definition of ‘social capital’ (ranging from defining social capital as an individual property to the characteristic of a society (Fukuyama, 1995; Glaeser, Laibson, & Sacerdote, 2002) and its effect on health have remained controversial (Poortinga, 2006a, b; Stephens, 2008). A conceptual difficulty of studying the effect of social contexts – or of ‘social capital’ (norms,

laws, trust, networks, power) - on health is its relation to social inequality (and Muntaner & Lynch, 1998; or an overview by Szreter & Woolcock, 2004; see the debate between Wilkinson, 1996).

In other words a major problem with the concept of social capital is that there is a need to distinguish between those parts of social capital which figure as a premise for the formation of material capital, and between those parts of social capital which are a consequence of material conditions, such as social exclusion as a consequence of experienced impoverishment. If the effect of social conditions on health is to be investigated it is necessary to clearly identify the direct and indirect effects of the different factors, and to exclude confounding in order to avoid wrong policy decisions.

One of the few references to power in the context of transforming processes is the remark that “the greater people’s asset endowment, the more influence they can exert” (SL Guidance sheets 2.3), pointing at a reciprocal relationship between assets and institutional framework.

If the more affluent can enforce the ‘rules of the game’, the process of exclusion becomes self-reinforcing, and the need to place the development and change of institutional frameworks at the centre of analysis and interventions becomes even more evident.

Social capital – if we consider networks membership in organisations and relations of trust as such – (networks and relations of trust could also be considered institutions as the relationships follow rules e.g. of reciprocity), is constantly changing depending on external and internal change: Change of relative prices for particular products lead to the formation of new interest groups; political change may alter the bargaining power of certain groups as they can draw on government support; ideology may be used to legitimize interests by certain groups more or less successfully (Haller & Merten, 2008). Ironically the poorest and least powerful have least access to social networks and group membership, and are least likely to maintain relationships of trust due to their inability to participate in reciprocal relationships, so that they may practically be excluded from access to social capital (Berry, 1993:147; Cliggett, 2006; De Jong, Roth, Badini-Kinda, & Bhagyanath, 2005).

The importance of external factors and bargaining power for institutional change

It should be kept in mind that local institutions can change fast due to external change, completely altering local people’s agency and entitlements. Institutional change has been described as especially drastic in the context of disaster, affecting access to resources and social obligations alike (Barrett, 2002; Bastiaensen et al., 2005; De Waal, 1989). Jean Ensminger described the mechanism of institutional change convincingly as triggered by external change. Ensminger argues that through external changes the bargaining power of

actors can be altered such that a new group of powerful actors may emerge, which will try to change existing rules to their favour, or to set up a new regime (Ensminger, 1992). In her analysis of institutional change among the Orma pastoralists in Kenya she outlined how new market opportunities emerged through increasing meat prices (change of relative prices). As soon as cattle became more profitable pressure on pasture close to the permanent settlements increased. Market-oriented migratory beef producers had become a new powerful group, which challenged the local usufruct rights of the sedentary Orma, leading to a privatization of the pasture areas (Ensminger, 1992).

But Ensminger's example highlights also another aspect in addition to the importance of external change. Contrary to expectations, the more affluent migratory beef producers could not successfully jeopardize the access rights of the sedentary Orma initially. The Orma succeeded in obtaining support from the state claiming that their children needed to go to school, which did not allow them to take their animals to more distant pasture. Initially their argument actually worked and their claims were backed up by the national government (ibid:139). This example highlights the importance of rhetorical reference to a discourse, which is backed up by a body of power: reference to a discourse of modernisation increased the bargaining power of the group, which could link up with the state.

In sum, external change can suddenly trigger institutional change particularly in a crisis situation, such as a famine, excluding new groups from access to resources. If institutions are renegotiated strategic rhetorical references can build alliances and consequently increase the bargaining power of a group or individual.

Institutional processes and health related behaviour

In the discussion of institutions related to food security and nutrition I focused on questions about entitlement to resources. In this section I turn to the role of norms and values for health related behaviour.

For the investigation of health issues institutions have obtained far less attention. Lindbladh et al. (Lindbladh & Lyttkens, 2002; Lindbladh, Lyttkens, Hanson, Ostergren, Isacson, & Lindgren, 1996) addressed the role of norms and habits for health related behaviour combining a sociologist's and New Institutional economists' perspective. They maintain that although the exact definition of institution differs between the two scholarly disciplines social scientists and economists agree on the fundamental importance of rules and norms as arrangements for facilitating decision making and making daily life manageable. In contrast fundamental differences remain about the extent of choice an individual is endowed with, and about the limits of rational, utilitarian thinking. From a phenomenological perspective it is

assumed that routine everyday practices may be meaningful from an individual standpoint but do not necessarily involve reflections concerning aims, motives and means (Berger & Luckmann, 1966; Schütz & Luckmann, 1974). In other words, ways to deal with usually complex situations are influenced by a combination of various factors, which cannot be comprehensively evaluated nor are fully under the control of a person. Instead action is taken along historically evolved patterns of action pre-structuring behaviour at the individual and collective level, options being potentially restricted through patterns of power and domination (Berger & Luckmann, 1966). In contrast a rational choice paradigm as conveyed in classical economics assumes that decision is taken consciously, based upon available information and with a utilitarian stance (Lindbladh & Lyttkens, 2002).

I would argue that most people do act purposefully if they need to set priorities as regards how to allocate household resources or labour. Also if a mother perceives her child to be sick and weakly, action taken will be directed - usually towards improving a child's health (Einarsdottir, 2000; Dettwyler, 1994). Whether a mother believes that she can influence the condition of the child will however depend on many factors: on her social position and agency within a social context, on material assets, on the availability of acceptable options for care and/or treatment, and on entitlement – whether she can access the available resources. The processes related to entitlements are similar as in the case of access to natural resources: people's position in the bargaining processes around institutions is crucial for their capability to gain access.

Also social norms, or the common understanding of legitimate ways to act in a particular social context and position may catalyze explicit choice or incur action implicitly through internalized habits, which are legitimated by a particular ideology or discourse and intertwined with power relations (Gastaldo, 1997; Haller, 2007; Knight & Ensminger, 1998; Obrist, 2004). There has been a controversial debate about whether medicalization occurred in Africa in a similar way compared to Western industrialized countries. Child nutrition and health education for mothers, which was a cornerstone of missionary activities (Vaughan, 1991:67), found entry in formal education and health promotion programs. Historically, most nutrition programs were primarily health based, leaving the underlying causes (poverty) unattended (Hussain & Clay, 1999). Research on illness in Africa investigated how biomedical information was integrated into local illness concepts: The findings indicate that local interpretations were not simply replaced by the acquired knowledge, but reinterpreted based on the pre-existing indigenous worldview. Today, plural, partly overlapping interpretations coexist (Hausmann Muela, Ribera, Mushi, & Tanner, 2002; Strahl, 2003). The

persisting pluralism of medical systems in Sub-Saharan Africa, which might in part be a consequence of a weak colonial and post-colonial government health sector, contributes to this process. It also implies that an uncritical acceptance of truth claims of biomedicine has not taken place (see also Lock & Kaufert, 1998:18).

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Part II Goals and objectives

GOALS AND OBJECTIVES

The overall goal of this study is to contribute to a better understanding of the role contextual factors play for undernutrition in childhood and related treatment seeking in conditions of insecurity in a resource-poor rural area in Zambia.

Objective 1

To investigate the role livelihood change and emerging livelihood strategies play for the nutritional basis (energy intake and diversity) of the rural societies

- *during the famine 2002/2003*
- *the year after the famine 2004/2005*
- *in conditions of changing access to resources.*

It was hypothesised that the transhumant agro-pastoralist system is comparatively best adapted to cope with seasonal food scarcity as a sufficient energy and protein intake can be upheld throughout the rainy (famine) season. However many agro-pastoralist have lost their cattle, or lost access to pasture, land, or fishing grounds, which affects their food security negatively.

Objective 2

To investigate women's role and scope of action for securing their and their children's nutritional basis

- *considering the relationship between livelihoods and type of family and marriage/household structure (polygyny, nuclear households, single women), and its role for nutrition (energy intake, animal source foods, nutritional status)*
- *considering structural/institutional constraints women face.*

It was hypothesised that household structures are linked to particular modes of subsistence or income-generating activity. Polygynous households, which are mostly owning cattle, will be more food secure, and their children less likely to be malnourished. Despite a change of norms in favour of nuclear, monogamous households, women continue to agree to marry polygynists partly because their families offer more security.

Objective 3

To investigate indirect impacts of institutional change affecting women's nutritional basis

- *investigating substituting income generating strategies during the economic crisis: the role of sexual transactions*

It was hypothesised that women engage in fish trade by means of sexual transactions because their subsistence fishing has been marginalised and fish trade offers high profits; their bargaining power towards the fishermen to control the nature of the relationship (or to refuse sexual transactions) depends on the market situation. Women refer to 'traditional' marriage institutions to claim men's commitment, and to avoid stigmatisation.

Objective 4

To investigate the role of local perceptions of physical signs of nutritional deficits in children for maternal treatment seeking

- *considering economic constraints and a weak health sector*
- *considering weakening social network.*

It was hypothesised that in conditions of poverty and weak support from the health sector to feed malnourished children, mothers make use of local illness concepts, which allow mobilising resources by referring to treatment procedures involving diverse actors; but whether nutritional recommendations were followed depended on financial ability more than on the illness concept which mothers referred to.

Part III Study setting and methods

STUDY SETTING

Zambia's economy

After a promising start of the Zambian economy in the early 1960s and 1970s, socio-economic conditions have deteriorated over the last three decades, and poverty has increased (Ferguson, 2006). Expectations from industrialisation and modernisation did not turn into reality for the majority of the population irrespective whether they lived in urban or rural areas: After the collapse of the copper-industry in the early 1970s, investments were lacking and the economy stagnated. The Zambian government under Kaunda, who followed a moderate socialism known as 'humanism' invested in social security, education and health care; but by the 1980s, the state was heavily indebted. Meanwhile, livelihoods had fundamentally changed in many localities: Industrialisation, labour migration and the introduction of a market economy have transformed local systems of production and the social structure alike. Labour migration, which had started in the early colonial period, has negatively affected rural areas as it took away labour force and contributed to impoverishment in areas, where men were absent from their villages for most of the year (Ferguson, 1999; Vaughan & Moore, 1994).



After harvesting, Mbeza 2004

Agrarian change: the maize revolution

Cash crop production has commenced very early during colonial time predominantly in the Southern Province along the line of rail. Maize production was supported and partly subsidised, a policy, which continued until the 1990s (Howard & Mungoma, 1997). Only

when the economic crisis had become more severe, subsidies were gradually reduced; the liberalisation of the maize market made small-scale production unattractive to an extent that the production collapsed after the mid-1990s (Ferguson, 1999; Mickels Kokwe, 1997). Alternative strategies were needed in the rural areas, but meanwhile, jobs in the formal sector had become unavailable. In some areas, where ‘traditional’ forms of production like pastoralism or fishing had continued to thrive, they experienced a renaissance as a successful way of life and became a point of reference for local livelihood strategies: While the green revolution had locally failed, extensive animal husbandry or commercial fishing proved better suited to cope with external economic, political and environmental constraints. In this process of change, women were among those who lost most, as they used to rely mainly on cash crop production, or on paid labour (for earlier similar developments see Vaughan & Moore, 1994).

Access to natural resources

The return to subsistence production and to the exploitation of natural resources like fish or timber increased pressure on natural resources. In Zambia, where common pool resources such as fish or wildlife are under government control, they are hardly controlled due to economic constraints of the state. Local rules are partly still in place, but are equally not put into effect if conflicts arise (Haller, 2007a). If it is unclear whether local or government rules are enforced, a situation of open access is emerging, which leads to overuse of the resource and endangers its sustainability (Hardin, 1968). In the absence of state and community control it depends on the bargaining power of those who claim access whether they succeed, leading to increasing inequality within a society and decreasing food security (Bastiaensen, De Herdt, & D'Exelle, 2005; Ensminger, 1992; Haller, 2002).

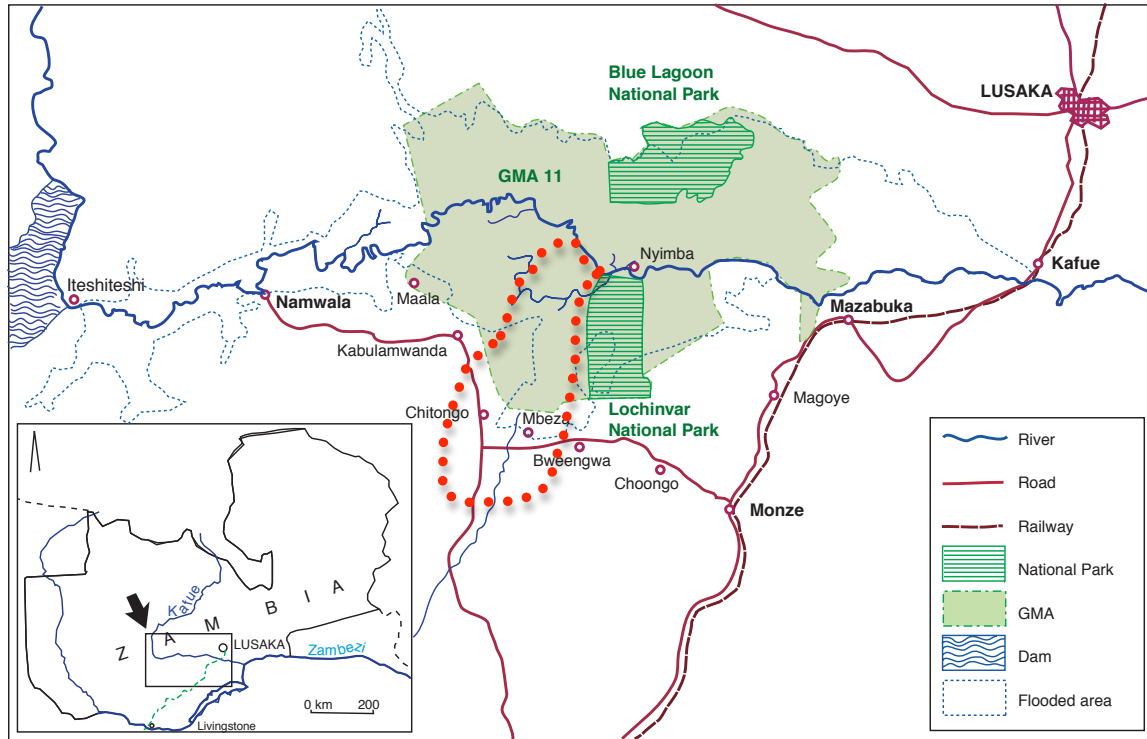
Research site

The research site is located in the Kafue Flats, the largest floodplain in the Southern Province of Zambia, southwest of the capital Lusaka. Mbeza (chiefdom Nalubamba) is the name of the respective *Ila* territory (*chichi*). The territory is subdivided into 76 villages and counts about 26'000 inhabitants (in 2000), in an area of approximately 1500 square kilometers. This meant an average population density of approximately 17 inhabitants per square kilometer. In the area where the settlements were concentrated we estimated 38 inhabitants per square kilometer.

By road, Mbeza is accessible from two sides by very badly maintained dirt roads. It shows little infrastructure (four primary schools, two clinics), one rural commercial centre, where

electricity and telephone lines are available. There are no big commercial farms or other employment opportunities in the area.

Map 1: Map of the Kafue Flats of Zambia, and approximate boundaries of Mbeza



Ecologically, the Kafue -Flats are situated in a semi-arid area. The region is characterised by an intense seasonality. From May to July it is cold and dry, August to October is hot and dry, between November and April intense rainfalls are usually expected. Large parts of the area are flooded from January to April. During the 1990s, though, there have been two droughts (1992/1993 and 1995/1996). The latest drought took place in 2001/2002. As a consequence, at the end of 2002, the third famine since 1993 was developing in the area.

Local livelihoods

The Kafue Flats are known for their wealthy cattle herders, who rely also on cash crop production (maize, see Howard & Mungoma, 1997). Livelihoods have changed over the last decades, and insecurity has increased, triggered by the economic crisis of the country.

Agriculture

Historically, the role of agriculture in the Ila economy is not easy to assess. Agriculture was just a secondary subsistence activity, even if in pre-colonial times there were more different crops than today (not only maize was planted as a staple crop but also millet and sorghum, cassava, sweet potatoes, groundnuts and some vegetables). Agriculture was certainly regarded as inferior to cattle herding. It was only in late colonial times and after independence that maize production became an important commercial factor in the Ila area.

Portuguese traders originally introduced maize to southern Africa in the sixteenth century. This was flinty hard maize with low yields and a variety of colours. In Zambia agriculturalists used to do intercropping, cultivating maize together with a mixture of other crops such as sorghum, millet, pumpkins and groundnuts. By the end of the 1700s flint maize was an important staple but was not dominant until the arrival of the European colonial powers in 1900. Today maize contributes 70% to the staple crop in Zambia and about the same percentage share of calorie intake (Howard & Mungoma, 1997:45-6).

This development can be explained by the colonial and post-colonial agricultural strategy of the state. During the colonial administration, the demand for maize increased during the 1920s in the urban areas, where mineworkers were paid with maize produced by white commercial farmers whose share of the market was protected. At the same time, however, maize farming was also being promoted among small-scale farmers. This was accompanied by a change from the traditional hard (flinty) corn varieties to the higher yielding, open pollinated white dent varieties (OVPs) imported from South Africa and the USA. Since that time, several different hybrid varieties have been developed for the area, such as the successful SR 52.

After independence in 1964 the maize program was an important political issue for Kenneth Kaunda's government, whose political goal it was to involve remote small-scale farmers in the national economy, and at the same time provide mine workers with cheap maize. The financing of subsidies for processed maize flour (*mealie-meal*) was seen as part of a social contract between Kaunda's UNIP and the Zambian people. So the whole programme was tremendously politicised – a fact, which made later reforms difficult (ibid: 51). This was again aggravated by the fact that under British rule, government maize prices were controlled and

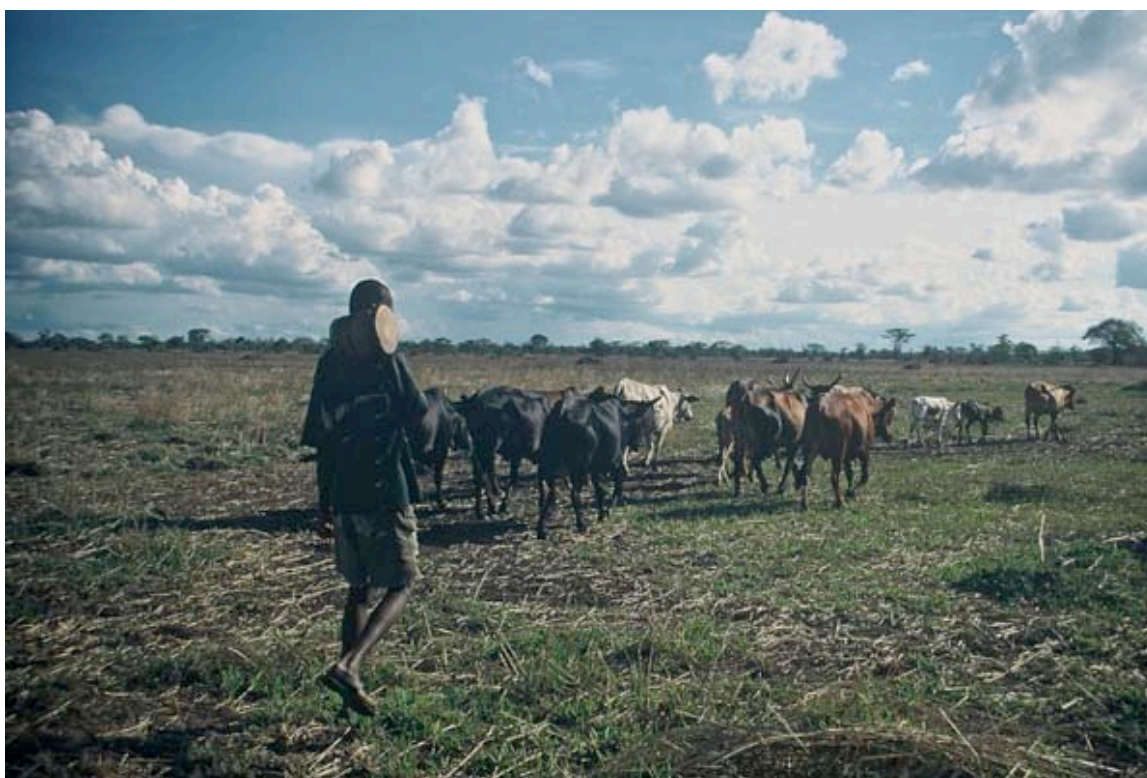
subsidies given in order to maintain market infrastructure during the 1930s. The independent government maintained the controls and subsidies of the maize market. 60% of maize production was traded through official channels until the early 1990s. Maize bought by official marketing organizers was resold to parastatal milling companies in urban areas, where it was processed into maize flour and other products, which were then sold at controlled prices to urban consumers. After the decline in copper prices, Zambia's main export product, this very expensive system consumed a large proportion of the national budget (17% in 1988).

The IMF, World Bank and international donor agencies began to promote agricultural markets in the mid 1980s and started to attach conditions to further loans requiring liberalisation of the agrarian market and privatisation. After Chiluba put Kaunda out of power in 1991, his new policy immediately restructured the maize sector, privatised it, downsized the infrastructure and opened it up for the international market. The whole system had already been changed by the end of 1992: There were no more parastatal organisations guaranteeing prices and markets that would be maintained at local depots.

On the one hand this reform favoured the already strong areas adjoining railway lines, where infrastructure was well developed, more production and more export was possible, and other crops such as cotton and tobacco could be produced. On the other hand remote areas in Northern and in Southern province saw a drastic reduction in maize area and use of inputs and a reversion to subsistence crops. The total area cultivated dropped by 15%. Fertilizer use also dropped from 60'000 t in 1994. Maize seed sales also decreased from 15'000 t to only 2500 t between 1990 and 1995. Studies confirmed that traders were reluctant to deliver inputs in remoter areas due to transport problems and high market costs (ibid:58).

At local level, agriculture had gained in commercial importance, especially since the 1950s. During the green revolution maize was widely introduced as major cash crop in the area, whereby loans were given to small-scale farmers for seeds, fertilizer and pesticides, while prices for maize were fixed. In Mbeza, this led to only a dwindling number of old people still possessing the old flint varieties. The advantages of these varieties are their drought resistance and the possibility of a longer storage period without the need for pesticides. In addition, farmers do not have to buy seeds, fertilizer and pesticides as they do for commercial hybrid varieties. If these inputs are lacking, the yields of the traditional varieties are even slightly higher than those of commercial varieties (own research). During 2002/2003, a household survey in seven villages of Mbeza was conducted and showed that the advantage of the hybrid varieties, i.e. to obtain 3-4 times higher yields with the same available labour force, only applies if fertilizer and pesticides are available. This is, however, not the case for most of the farmers.

Although agriculture has expanded considerably in Mbeza, land cannot be regarded as scarce, but people may be forced to move to more distant areas in order to cultivate crops. This again has an impact on the social structure as it promotes the ongoing trend towards individualisation of production and the loss of social coherence. But at the moment there is no sign that the access to agricultural land as common property may be limited, despite a general process towards the introduction of title deeds. In Mbeza, only two people currently hold a leasehold title. Nevertheless land issues are sensitive in this part of Africa, which is so close to Zimbabwe and where neighbouring people have experienced land appropriation especially in the south-eastern parts of the Kafue Flats around the city of Mazabuka. There a lot of people have lost their land and their pasture to white farmers and to the biggest sugar cane plantation in Zambia, a former state company now owned by a South African Company. In spite of this, people have not yet started to take advantage of the possibility to obtain a leasehold title. The major reason stated for not having a title deed were high fees or lack of knowledge.



Kuwila, bringing the cattle to the plain, 2004

Cattle

Not land ownership, but cattle is still the most important resource to accumulate wealth, whereby pastoralists make use of pasture held in common. Planting maize as a cash crop has done more to maintain the pastoralist system than force a change towards exclusive agriculture. The possibility to sell maize has prevented the additional sale of cattle (Haller, 2007a). They have a three-step transhumance system: In the dry season from July to

December most of the animals stay in the Kafue Flats in cattle camps (*matanga*). These are supervised by one local resident group claiming to be the first-comers to the area, allocating the camps. The *matanga* (sing. *lutanga*) are mostly within or close to oxbows, tributaries or ponds where the cattle stay during the night.

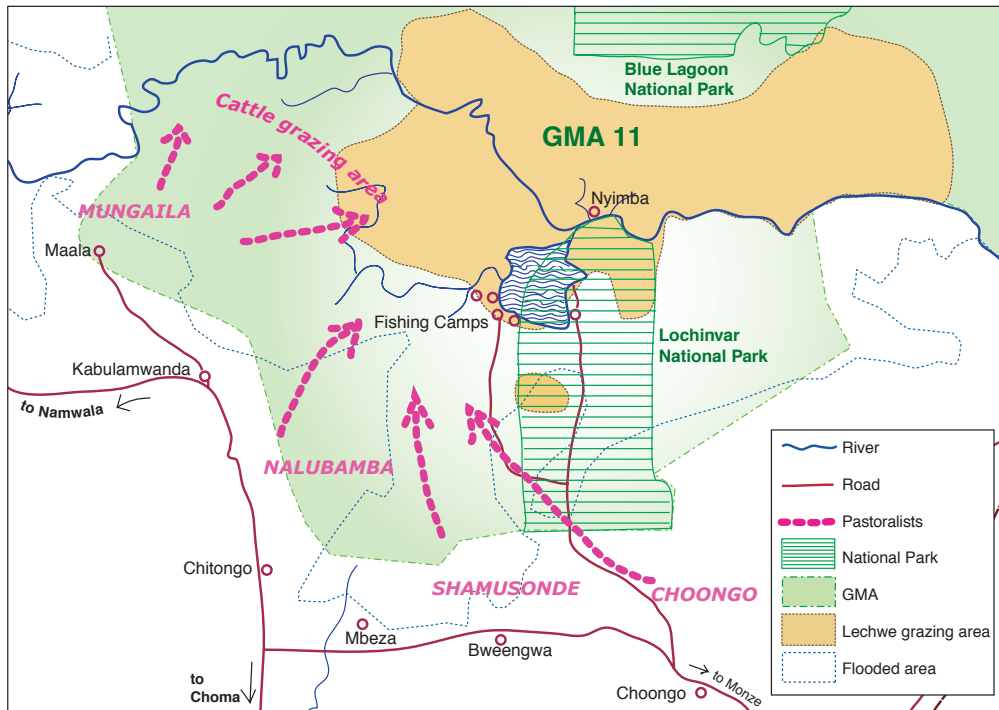
When the first rains come in December, the cattle are moved to permanent settlements close to the woodlands for a short period (*kubola*) before they are moved to rainy season pastures close to the settlements, where households and extended family groups also have cattle camps. The cattle stay there or are taken to these pastures during the agricultural period in order not to disturb plantations. After harvest the cattle are then moved back to the villages where they can roam freely and feed on maize stalks and leaves. In order to coordinate this move, a date is set by which every household has to have harvested its fields.

The Ila households included in the survey of 2003 owned 13 head of cattle on average per household, implying that the number of cattle per adult man has declined from 13 in the 1960s (Fielder, 1973) to about 3-4 animals. These estimates were confirmed by local veterinary professionals. The number of cattle-owning households has also diminished.

The major reason for this decline was a tick-borne disease (*theileriosis parva*) that affected the area by the end of the 1980s. The increased mobility of cattle through the import of new breeds into the area, combined with the fact that the flooding pattern had changed in such a way that the plain was no longer working as a 'natural dipping tank' to drown the ticks, were held responsible. Although a vaccination program was initiated, it did not reach the smaller cattle farmers, which today means the majority of the pastoralists. In addition to the disease, the rising economic pressure and the droughts has prevented many farmers from rebuilding their herds until now. Together with the growing individualisation of production, which has led to an increase in sales, the decline of the herds has accelerated. Cattle are today sold on a regular basis, whereas Fielder (1973) reported that in the 1960s, the Ila sold cattle very reluctantly. He calculated that the security of an extended household only permitted the sale of an animal if the herd counted at least 40 heads. Today, this would imply that out of 130 households, only 5 would be economically and socially secure enough to sell cattle.

The role of cattle in subsistence production has changed as well. Traditionally, every herd of cattle was protected by a type of magic called *isambwe*. For instance it was taboo (*tonda*) to sell milk (Smith & Dale, 1968). Large quantities of milk were available for consumption, and sour milk (*mabisi*) and butter was produced to the extent that butter was used as a 'body lotion'. This has changed dramatically over at least the last 30 years. Both beef and dairy products are regularly sold, and neither meat nor butter are consumed on a regular basis.

Map 2: Pasture and wildlife grazing areas



Hunting

Although hunting today is either expensive (licenses are needed), or illegal, it still contributes to meals or serves as a way of earning cash, but no longer on a regular basis. Young men go to areas which they know cannot be controlled by game scouts and hunt with dogs and guns. As the management of the Game Management Areas is not effective, hunting remains an option but it is risky. It is mostly done for cash. The meat, usually Lechwe, is dried and often sold by women who go to town with the dried meat. This type of hunting is on a small scale compared to hunting by townsmen, who hunt with modern rifles illegally or who buy a licence but shoot many more animals than they are allowed to.

According to older people, fish and meat used to be consumed on an almost daily basis. Meat, though, was predominantly game meat, including a number of small rodents and birds, as cattle were slaughtered almost exclusively at funeral ceremonies. Of the larger game species, the Kafue Lechwe was the most important. Twice a year a collective hunt (*chila*) was organized, and a considerable number of animals were killed and distributed among the villages. Since the 1940s, local hunting rules (such as *chila*), controlled and organised by local groups, were regarded as destructive and totally banned by the end of the colonial era. Following this, national parks (Lochinvar and Blue Lagoon), and a GMA were introduced,

where hunting was only allowed with licences. Nevertheless, along with the decline of the Zambian economy starting in the mid 1970s and easier access to the area for poachers and fishermen (also poaching) by man-made changes to flooding patterns (dam), the Lechwe population decreased from 100'000 to 50'000 and less. In 1999 the population was estimated to be 45'000 with an uncertainty range of 10'000 – but unofficial estimates assume a much lower number. Contributing to the misery, an invasion of an alien weed species called *mimosa pigra* is restricting the lechwe's grazing ground and forcing them to move out of the protected area of Lochinvar (Haller, 2007a).

Fishing

Fishing for subsistence, in turn, has gained in importance. Especially during the rainy season before crops are ripe, fish from the tributaries is a reliable food source for local women who go fishing with baskets during that time-period. Men, who go fishing as well, only partly contribute to subsistence nowadays, but rather sell the fish in order to get cash, independent of the fishing technique they use. Especially during the early dry season, men fish in ponds and sometimes catch considerable amounts of fish.

A great variety of fishing techniques are still used today. It is especially remarkable how differentiated the catching methods are, depending on type of water and on the type of fish to be caught. The fishing season starts with the rainy season, when the water of the tributaries meets the water of the Kafue river and the fish start to migrate up into the tributaries looking for food and spawning places. Fish is caught during collective *ikuo* fishing in the shallow waters by the women with baskets and the men with spears and hooks. When the water is high, fishing becomes open access for the whole area. After the water recedes again and stops flowing, men put weirs with fish-traps in the form of baskets into the river (*buyeelo*). In the dry season then, fishing takes place in controlled ponds remaining in the tributary systems or in the Kafue Flats close to the *matanga* (cattle camps), where bream can be caught. Those who do not fish at the camps barter fish from the Batwa in exchange for milk.

Different fishing methods used by men and women

<i>Water and fish type</i>	<i>Methods used by women</i>	<i>Methods used by men</i>
Tributary (Striped Robber; <i>Alestes lateralis</i> , Bulldog, Dwarf Bream, Barble fish)	Ila and Tonga baskets	Spears, hooks, traps, weirs
Ponds and oxbows (Striped Robber, Bream, Barble fish)	Ila basket	Spears
Kafue River (mainly Bream)	-	Spears and hooks

(source: Haller, 2007b)

Fishing in the Kafue River and the lagoons is, however, done by fishermen from other ethnic groups. In pre-colonial times, the indigenous inhabitants of the Kafue Flats floodplain were the Batwa, who settled along the river and controlled the fisheries. Trade was limited to a local barter system where fish was exchanged for milk from the Ila pastoralists. The Batwa used to control the Kafue River and fished with boats and spears, sometimes using a special shadow fishing technique (covering themselves with a blanket in order to attract and see big bream) unique to them. The Ila were always regarded as cattle herders who engaged in fishing only as a sideline. Nevertheless, detailed studies show that fishing in tributaries, ponds, lagoons and oxbows were an important feature of Ila and Balundwe subsistence (Haller, 2007b; Smith & Dale, 1968).



Collective fishing, Mbeza 2004

After the 1930s and more intensively in the 1950s, commercial Lozi fishermen came into the area and fished with nets. The technology used was seine nets (draw nets) and gill nets, allowing big catches especially of highly valued bream. In the mid-1970s after the decline in copper prices commercial fishery was booming and methods became more and more destructive (mesh sizes under the demanded 76 mm, fishing with mosquito nets and plastic sheds used in agriculture for sun protection) and closed periods for the regeneration of the fish stocks were not respected due to bad monitoring and sanctioning by the authorities which controlled the fisheries. Large fishing camps developed close to a big lagoon called Chunga in the vicinity of Lochinvar National Park and attracted fishermen and traders from all over Zambia. For the Ila, commercial fishing, which hitherto was of no interest to them, has become more interesting because of the crisis in which they are in due to decline in maize

yields (less subsidies from the state) and loss of cattle during the *theileriosis* epidemic. In recent years, more and more violations of traditional as well as government regulations concerning access to the fisheries have been reported. Some decline – although not considerable – in fish stocks has been described, which local people blame on lower water levels in the river (Haller, 2007b).

When the problems of the fisheries today are discussed, the emphasis is on commercial fishing and underestimates the economic aspects of subsistence fishing. This issue will be discussed more in detail in the following section.

Wild plants

Finally, one additional pillar of subsistence has also lost importance, although not completely: the gathering of wild fruits, tubers, roots, and vegetables is still of importance especially during drought years. Due to the population increase in some areas, bush-plants are further away, and the effort to collect these plants is no longer made on a regular basis. It is more common for those who are wandering through the bush, especially young boys herding cattle, to live off wild fruits whenever they come across some.

Changing livelihoods

The five pillars of subsistence have been profoundly shaken during the last decades, leading to massive changes in livelihoods. An increasing number of households have started to sell cattle in times of need, as the data from the household survey in 7 Mbeza villages during the famine in 2002/2003 showed. Only 35 out of 69 Ila households still owned cattle, and of those, 13 indicated that cattle were among their main cash sources. Despite the bad yields and at some places complete crop failure, maize remained a major source of cash for 48 of 65 households who completed the questionnaire.

Ranking of main sources of cash during drought year 2002/2003

1 Maize	10 Groceries
2 Chicken	11 Milk
4 Fish	12 Carpentry
5 Cattle	13 Beer
6 Pigs	14 Game
7 Goats	15 Commerce
8 Vegetables	16 Handicrafts
9 Paid labour	

Changes of gendered labour division

Before colonialisation, activities drawing on natural resources throughout the year were partly gender-specific, partly done jointly by men and women. Through monetarisation, the segregation between the work of men and women became more prominent. It also became clear that women remained responsible for subsistence production, while men contributed primarily money: it was the women's task to provide food for the household.

Apart from hunting, the activities are still observed in the villages, although rather the lower socio-economic stratum of the people fish, or gather wild fruits.

Overview of activities (* only before independence), men and women

	Cattle	Agriculture	Fishing	Hunting	Gathering
Beginning of rainy season	Men bringing cattle back, herding village, rainy season camps (kubola)	Men preparing field, then incultivating season	Collective fishing with women baskets, spears, hooks and weirs	*Men individually with village or chichi	hunt Women/men (boys) gather fruits
Flooding period	Men do herding in season camps	Weeding, rainy harvest	early Women baskets, spears, hooks and weirs	*Men: hunting (chila)	Collective Women/men (boys) gather fruits
Early dry season	Cattle harvested later driven to camps in the Flats (kuwila)	herded on fields, small gardens on the river	No activity or only small gardens on the river	Closed period Later only fishing in ponds	No hunting in flats, Little gathering in hunting in village areas
Late dry season	Cattle herded by men in flats	No activity	Men fish in ponds close to cattle camps, and fishing days	No hunting in flats, only hunting in reciprocal village areas	Women gather wild plants for relish

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The health system

In 1978 the World Health Organization (WHO) formulated the “Health For All”(HFA) policy and the “Primary Health Care”(PHC) strategy with the intention to reorganize health services in low-income countries aiming at providing equity of access to quality care. Zambia was one of the first countries to adopt the PHC strategy (Kasonde, 1994).

In 1991, the MMD formulated new National Health Policies and Strategies, and the Ministry of Health released the Corporate Plan for Implementing National Health Policies and Strategies (Ministry of Health) and the National Health Policies and Strategies, which provided the blueprint for the Health Sector Reform in Zambia (Stekelenburg, 2004). However the implementation of the strategy was jeopardized by economic decline and by difficulties to achieve sustainable community participation.

Development of the formal health sector: growing inequalities

Before independence in 1964, colonial rule concentrated its investments on building up an infrastructure including health facilities in the mining centres. Rural areas were neglected, and modern health care in remote areas was largely provided by mission hospitals. In contrast to this, the post-independent government has been committed to investing in rural infrastructure. The Kaunda government financed free health care for the entire population and invested on average 8% of total government expenditure in building up health care facilities in remote areas. Only the serious economic decline, which began in the mid-seventies curtailed these efforts. Nevertheless, considerable achievements had been made by the mid-eighties. The number of hospitals rose from 48 to 83, providing Zambia with one of the highest numbers of hospital beds in sub-Saharan Africa. Also the number of health centres more than doubled and reached 845 in 1984, mainly due to the creation of rural health centres. As a corollary, the educational sector was also built up especially in rural areas. These investments in social development were confirmed by improving health indicators: the infant mortality rate declined from 147 per 1000 live births in 1969 to 100 per 1000 in 1980 (Kasonde, 1994: 2-3). However, the continuing deterioration of the Zambian economy saw infant mortality rates climb again during the 1990s to 109 (Central Statistical Office, 2003:119). Only recently could the trend be reversed. In 2002 the infant mortality rate dropped to 95 per 1000 live births.

The economic crisis, which began in the late 1970s has negatively affected the health infrastructure, especially in rural areas. According to government estimates, the national coverage of trained health professionals had dropped to one doctor per 14'000 inhabitants in

1995 – a decline of about 50% compared to 1977 (Hjortsberg & Seshamani, 2002:30). It was also estimated that one clinical officer was practicing per 6'700 inhabitants, and one nurse per 900. In rural areas, though, the density was certainly much lower: e.g. in Namwala district in 2002, there was no doctor to serve the approx. 90'000 inhabitants, and one clinical officer was covering over 10'000 people (own research, 2002).

Even with a well-established primary health care system, trained volunteers such as community health workers cannot fully compensate for the lack of skilled health professionals. In Mbeza, 12 community health workers were trained in 1998, but by 2002 only 4 remained. The others either died, moved away, or stopped working (own research).

Low coverage means that distances to the next health care provider increase. Distance to the nearest health facility has been shown to be associated with a lower attendance rate as well as with higher transport costs (Hjortsberg & Seshamani, 2002:56, 67). But in rural areas, long distances to skilled health care providers are common. Considering the lower income of rural people and the higher transport costs especially to secondary and tertiary health care facilities, people living in rural areas are clearly disadvantaged and less likely to seek health care than persons in urban zones (ibid:66). According to the literature, this concerned mainly formal health care. Only 2% of respondents irrespective of their place of residence indicated that they had consulted traditional healers (ibid:68), i.e. a much lower figure than in our sample. On the contrary, we observed that frequently, both the formal and the traditional health practitioners were consulted.

At the beginning of the 1990s, structural adjustment programs were adopted as a remedy to cure the debt-ridden Zambian national economy. Launched in 1992, the Zambian health reform aimed at decentralising health planning and management in order to increase the efficacy of the health care system. At the same time, however, cuts in fiscal allocations to the health sector were undertaken. Along with decentralisation, user fees were introduced. Following this, health care centres registered a two-thirds reduction in the number of consultations (Seshamani, 2002:75-76), despite the fact that several exemptions from user fees were provided for, such as cases of life-threatening illness, chronic conditions (TB, asthma, HIV/AIDS, STDs), for children under 5 years of age and adults over 65 years of age, or for very poor persons. However, these exemptions were implemented to varying degrees (Daura, Mabandhla, Mwanza, & Bennet, 2002:178). In addition, informal payments or bribes and staff selling medicines seem to have become quite common problems due to eroded salaries and poor working conditions, and the quality of care could be limited due to lack of medicines or poor quality of medical examinations (ibid:184, own research).

A further consequence of the structural adjustment programs which had a negative impact on health was the elimination of subsidies on agricultural production and staple foods and the liberalisation of prices. The subsequent crisis on the maize market caused increasing poverty and a deteriorating health and nutritional situation among the poor at precisely the time when government health services were cut back. In 1995, health expenditure in Zambia was only 3.3% of GDP, one of the lowest in the region, with a low per capita GDP of \$890 (Mwikisa, Mansa, Nankamba, Chimfwembe, Goma, Chitah et al.). In 1997, Zambia came 182nd in a comparison of overall health system performance in 191 member states (Who, 2000). Since the major causes of morbidity and mortality are infectious diseases, malnutrition and maternal conditions, which are to a large extent preventable, the emphasis of government expenditure on health is focused mainly on primary health care Mwikisa, #192:19-23}.

Primary health care in Zambia

Primary health care has a comparatively long history in Zambia, as it was already widely implemented in the early 1980s (Kasonde, 1994). The setting up of primary health care mainly focused on the construction of rural health centres, the training of health professionals in primary health care, thus emphasising public health issues such as clean water supply (construction of wells and pit latrines), waste disposal or nutrition, rather than curative tasks. Community health workers and traditional birth attendants were recruited and trained. More recently, with the emergence of the AIDS epidemic, home-based care has become an additional important component of primary health care.

Despite the successful start, the project encountered several obstacles. First, communities expected health workers to be active in curative medicine, which meant that health workers mainly assisted in the dispensing of drugs. Second, the communities were supposed to pay for the community health workers' services, but the economic crisis and emerging famines lessened support from the community and increased dissatisfaction among health workers. In addition, communities were asked to contribute labour to construct wells, latrines and buildings, a duty not everybody was willing to undertake in view of the economic constraints and the everyday struggle to meet existential needs. The arrival of NGOs who paid for labour for development further jeopardised uncompensated participation (Lowther & Moonde, 1994: 21.24). Another constraint was the low level of collaboration between regional and district health staff and community health workers. For instance, government priorities for the construction of wells did not always correspond with the needs of the people (Birch, 1994). In addition, community health workers often stopped working after a short time. It is against this

background that the acceptance of primary health care and health seeking behaviour has to be examined.

Social health insurance

User fees or taxation go only a short way towards paying for government spending on health care in the present economic malaise (Masiye, Mwikisa, Anell, & Ödegaard, 2002:165). But social insurance and prepayment schemes are not yet widely used except by middle-class persons with a steady income. Rotating credit associations might be an option for the less affluent. The lack of a formal social security system is indeed a pressing problem for many households, which is understandable when one takes into consideration the importance of begging from relatives, friends or neighbours in order to cope with financial needs, reported as a strategy by 58% of rural households (Hjortsberg & Seshamani, 2002: 59). Again, the emphasis of government intervention is more on the strengthening of the agricultural sector than the provision of social security networks. According to the Sectoral Share of the Zambia Poverty Reduction Strategy Paper (PRSP) Budget, 2002–2004, only 0.8% of the budget was allocated to Social Safety Nets (Zambia Poverty Reduction Strategy Paper, March 2002, p.128). In 2002, 97% of the social safety net money actually spent went either on agricultural subsidies (45% for the Food Security Pack) or relief food (52% for Disaster Relief) (International Monetary Fund, 2004: 38-39).

Government health care sector in Namwala District

Since the decentralisation of the government health care system a District Board of Health located in Namwala was established, which is fully responsible for planning of the district health services and the allocation of finance. In 2002 Namwala district maintained one hospital and 12 health centres for approximately 85'000-95'000 inhabitants. In Chief Nalubambas area of Mbeza, two clinics were located covering about one-third of the district population. A new clinic was in construction in 2007.

Between 2002 and 2004 there was no trained medical doctor in the district hospital, but since 2005 the situation has improved. But the hospital is not equipped with a operating theatre, so patients who need surgery, also for a Caesarean section, have to go to Macha hospital about 120 km south of Namwala in the neighbouring district, which was built and is managed by the mission "Brethren in Christ". Alternatively, they could go to Monze hospital about 120 km east of Namwala. For referrals the only asphalted road goes from Namwala to Chitongo, leaving about half the distance an unpredictable affair. In Namwala district from 2002 to 2004 there was one ambulance available which dated from 1990. This could sometimes be used for

emergency referrals. The availability of the vehicle depended, however, on the condition of the car and that of the roads. In cases of emergency, time might well be too limited to wait for the ambulance to arrive from Namwala. Often patients and their relatives had to organise transport on their own with oxcarts or if possible a hired car belonging to a more affluent farmer. They frequently failed to arrange these things in time (Wiegand, 2002, own research).

In the rural health centres, mainly nurses or midwives provide all the services. Only few could employ a clinical officer and an environmental health technician. Laboratory facilities were the exception; in Mbeza no microscope was available. But even unsophisticated equipment such as measuring boards for the under-five checks were not available. Some centres had a fridge to store vaccines provided there was electricity, and usually communication to Namwala was possible by radio.

The Central Board of Health foresees at least three qualified staff members to run a health centre (clinical officer, nurse or midwife, environmental health technician) and two additional classified employees. In Mbeza, only one health centre met these requirements. It is not only financial constraints of the government, which lead to the understaffing of many health facilities, but recruitment problems, too: only few qualified professionals are willing to work in remote rural areas. Harsh working conditions and a high workload contribute to a high turnover among staff.

Despite all these constraints, the rural health centres were frequently consulted. Many women visited the clinics for prenatal and postnatal care. But basically the clinics worked as a dispensary where common drugs such as Panadol, antibiotics, or antimalaria medication could be obtained. In Mbeza medication was delivered once a month. Shortages occurred sometimes towards the end of the month but were usually not common enough to keep patients from visiting the clinics.

Also the lack of reliable transport jeopardising not only a functioning referral system but posed additional problems for the maintenance of the clinics and their outreach activities. Some health centres like Nakamboma (Mbeza) had a motorbike, which was, unsurprisingly considering the condition of the roads, often not running. The same was the case for bicycles. To reach Nakamboma clinic there is no graded road, and it takes several kilometres to arrive at the periodically graded road to Monze or to Mapanza.

In 2002 outreach activities in Mbeza such as the under-five program (growth monitoring, identification of malnourished children, distribution of vitamins, de-worming, immunisation, and treatment of infections if necessary) were carried out on a monthly basis at outreach

health posts. In 2004, though, all the mothers in the catchment area had to go to the health centre on the last Friday of the month for the under-5 checks, leading to enormous crowds around the clinics and related sanitary problems, which were well perceived as such by both the health centre staff and the mothers.

Table 2. Health centres in Namwala District:

Health centre	Catchment area	Accessible during rainy season
Chiefdom Nalubamba (Mbeza)		
Chitongo	10500	Yes
Nakamboma	12500	No
<i>New Moomba</i>	<i>In construction</i>	Yes
Chiefdom Mungaila		
Maala	7700	No
Kabulamwanda	6500	Yes
Kasenga	5600	Yes
Kantengwa	5200	No
Chiefdom Mukobela		
Baambwe	5100	Yes
Namwala	7000	Yes
Maseele	5900	Yes
Chiefdom Muchila		
Moobola	11900	Yes
Muchila	10900	No
Ichila	6400	No

Source: Wiegand 2002, GTZ

Primary health care in the Mbeza communities

As a major component in primary health care links with communities need to be created. For this purpose community representatives chose among volunteers those who would be trained as community health workers (CHW) or traditional birth attendants (TBA). After initial training they were supposed to provide the first contact with the health care system in case of sickness and to dispense a small range of drugs, but no antibiotics. A special case was anti-malaria medication, which was instantly provided, but the sick person was requested to go to the clinic. In addition, community health workers are supposed to be able to provide basic health information.

One major constraint, however, was the fact that they were not paid by the state but instead supposed to charge every individual 1000 ZMK (0.22 US\$) for their service. The health centres in contrast followed a payment exemption scheme freeing certain groups (children

under 5, adults over 65, chronically ill) from user fees. In the eyes of those persons who profited from the exemptions, the payments to the CHW did not seem justified. It needs to be considered that this was relevant for all caretakers of children under 5 years.

The accountability of the volunteers was low, however. In some cases this was due to an excessive workload. Hence community health workers were limiting their activities to the dispensing of panadol, oral rehydration solution (ORS) and condoms. However, the drugs or condoms they obtained from the clinics were not always enough, and as a consequence they were simply bypassed by the community.

As a consequence many volunteers were not able to earn enough through their services, which made it difficult for them to meet their livelihood needs and keeping up their services as CHW or TBA at the same time. Others (mainly TBA's) experienced a low acceptance by the community, although they had been selected, or felt inadequately supported by the clinics. CHW's and TBA's were often not monitored or could not be supported by the health centre's staff due to lack of time and transport. Illiteracy also impeded communication between the volunteers and the health centre. In the end, whether they were willing to work under adverse conditions for long periods depended primarily on the personal commitment of the volunteers and their ability to meet their own needs. In Mbeza for example, where 12 community health workers were trained in 1998, only four of them were still active in 2002, and were consulted on a regular basis (Wiegand, 2002), own research). The others had stopped working, left the area or died.

Treatment seeking from an actor perspective

Access to health care

Classical approaches to treatment seeking can be grouped in studies taking a *supply side approach* (Penchansky & Thomas, 1981), investigating health system interaction with users, pointing out problems such as barriers erected by the health facilities themselves like a lack of gender-sensitive procedures (Tanner & Vlassoff, 1998), or unreliable and ineffective treatments due to poor diagnostics and unavailable medicines (Lucy Gilson, 2003; L. Gilson & Alilio, 1994; L. Gilson, Jaffar, Mwankusye, & Teuscher, 1993). Another perspective addresses individual *behaviour-oriented perspective*, one of the most prominent approaches being the health belief model (Sheeran & Abraham, 1996). These approaches tended to overestimate cognitive and service related aspects of treatment seeking and have been expanded to include contextual aspects which are relevant to the people in need for treatment. A *poverty and livelihoods approach* as postulated by Obrist emphasises the everyday living

context, which in resource poor settings is often characterized by poverty and livelihood insecurity affecting options for treatment (Hausmann Muela, Ribera, Mushi, & Tanner, 2002; Obrist, Iteba, Lengeler, Makemba, Mshana, Nathan et al., 2007; Pelto & Pelto, 1997; Young, 1981). Complementing this perspective studies which explicitly focus on gender-relations maintain that treatment seeking is often not an individual decision-making process but involves a group of people with different interests and entitlements to resources, whereby women who are the main caretakers of children are usually not in the decision-making position (gender-based approaches see Tanner & Vlassoff, 1998; Tolhurst, Amekudzi, Nyonator, Squire, & Theobald, 2008). Tolhurst expanded the gender inequality hypothesis by highlighting that mothers, who seek care for their children, may strategically pursue other aims additionally in order to strengthen their position within the household and family (see also Mabilia, 2000).

Expanding the social context from the household to the community level MacKian postulates a *reflexive community approach* to consider the way the society reflects on particular illnesses possibly restricting agency and ability to comply with health sector recommendations through stigma and discrimination (MacKian, Bedri, & Lovel, 2004). Also Gilson emphasises the importance of the community level pointing out the role of the quality of health services and the effect this has on trust at the institutional level (Lucy Gilson, 2003).

Yet these approaches rarely address historically evolved norms, habits, or explicit regulations how to deal with crisis situations accompanying particular illness (for an exception see e.g. Hausmann-Muela & Muela Ribera, 2003).

The health care system, local illness concepts, and treatment seeking

Responding to the pluralistic medical system in the study area we use a broad definition of the health care system, including government medical services, activities of non-government organisations and private practitioners, as well as of traditional practitioners and self-care regimes. Medical anthropologist and psychiatrist Arthur Kleinman described the health care system as "a local cultural system composed of three overlapping parts: the popular, the professional, and folk sectors" (Kleinmann, 1980: 50). He described the popular sector "the lay, non-professional, non-specialist, popular culture arena in which illness is first defined and health care activities initiated". The professional sector would then be composed of the organised healing professions sanctioned as such by the culture, while the folk sector comprised the non-professional specialist sector encompassing both sacred and secular healers. In the Kafue Flats' setting, a distinction seems plausible between the (mainly formal) biomedical sector, encompassing organised governmental and non-governmental health care

facilities and practitioners, pharmacies and legal drug outlets, as well as informal sales of medicines by lay people with varying degrees of specialisation, and the (informal) ‘traditional’ medical sector encompassing herbalists, healers and diviners (Good, 1987: 24).

Table 3. Biomedical and traditional medical sectors

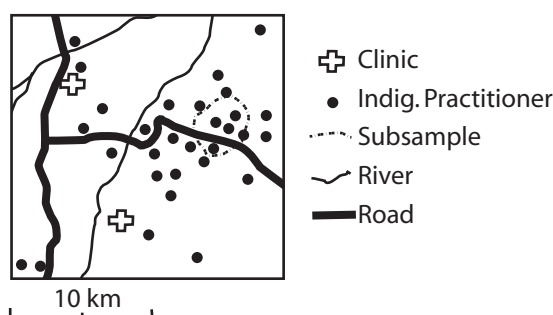
	Biomedical sector	Traditional medical sector
Formal sector	<div style="border: 1px dashed black; padding: 5px;"> Government health sector Missionary health facilities Primary health care volunteers Private practitioners Private clinics/hospitals Pharmacies </div>	
Informal sector	<div style="border: 1px dashed black; padding: 5px;"> Unqualified drug sellers </div>	<div style="border: 1px dashed black; padding: 5px;"> Herbalists Healers Diviners </div>

During the research period between 2002 and 2004, the government health facilities in Mbeza were facing dramatic shortages of staff and infrastructure. It wasn't the case that financings was not available to fill the foreseen vacancies. The problem seemed to be that it was very difficult to find health professionals willing to work with all the inconveniences of a rural location, which lacks basic infrastructure and precludes a standard of living equal to that in urban centres. Meanwhile, traditional medicine was experiencing a revival. Our interviewees generally agreed that the number of traditional healers and herbalists had increased compared to several years ago, although their quality was sometimes questioned.

In the study area (Mbeza), people make extensive use of a pluralistic health care system comprising biomedical and ‘African’ medicine (see also Good, 1987; Janzen, 1978; Ryan, 1998). The situation is characterised by an overall shortfall of biomedical health care, which is symptomatic of the national economic situation. ‘Modern’ medicine for many people mainly consists today of vaccination campaigns and a more or less reliable and distant

dispensary for a range of basic drugs. In addition, many elder people in Mbeza still remember the forced treatment of syphilis during colonial times, so ‘modern’ medical services are not incontestable. Meanwhile, the quality of traditional medicine is increasingly being questioned, partly due to people’s own experiences, and partly due to a long processes of de-legitimisation of traditional medical practices linked to “heathen beliefs and witchcraft” (Vaughan, 1991).

Map 3: Consultations of traditional practitioners and the formal health sector, inhabitants of Shikapande village 2004 (Michael Chopard 2008)



Traditional medicine and popular knowledge

Between 2002 and 2004, the density of traditional practitioners in Mbeza was considerably higher than the density of government health workers, including the four community health workers (Map 3). At least one to four persons per village were known to be either a herbalist, a traditional healer or, rarely, a diviner, who could at the same time be a witchdoctor. Some traditional practitioners were known to specialise in specific diseases, others treated a wide range of problems, which went beyond health issues. There was a focus on so-called traditional diseases, such as *tulonda* (genital ulcera), *chabana* (cerebral malaria/feats), *kuzwa menzhi* (urinary incontinence), or *masoto* (infant’s disease usually with diarrhoea, malnutrition). Other common therapies were treatments of diarrhoea and febrile infections including mild cases of malaria. For their therapies the traditional practitioners provided knowledge of more than two hundred known medicinal plants.

Local concept of the person and the body

Smith and Dale (Smith & Dale, 1968:160) found that the Ila had a specific notion of health, sickness and illness, which was connected to their way of seeing a person and his body. They had good knowledge about the physical body functions and about the anatomy of the human

and animal body. Sickness, however can be caused by natural and supernatural factors based on the notion of a person and his body.

According to Smith and Dale the Ila believed in a supreme being called Leza who is thought to be rather far away. For everyday life and for causation of health problems a wide range of spirits, often linked to ancestral spirits (*mizhimo*, *busangusi*) but as well other spirits (*bapuka*) in the supernatural world are of major relevance. The same is true with wizards and people using magic with negative consequences. There are also taboos and violations of social norms causing a wide range of sickness and disease. According to Smith and Dale the Ila Ego is composed by several elements: First there is the heart (*mozo*) as the location of feelings, sentiments and moral character of a person. Second there is a kind of shadow of a person (*chingvhule*), located in the skull. Third his second self (*shiu*) and fourth a kind of guardian spirit, looking and protecting a person and guiding his movements (*musedi*). This is external to the person but still a part of his. In addition a person has his name (*izhina*), which is important in the respect as it might derive from a deceased ancestor and is linked to the notion of reincarnation. At last there is strength or breeze (*moza*).

If people were sick it was important to find out the cause, and there could be many. Diviners, herbalists and witchdoctors were visited in order to find out the reasons for a sickness and in order to be treated by him/her or a specialist. The category of „medicine“ (*musamu*) comprised medicinal plants as well as objects for magic purposes, positive and negative alike, and often linked to luck magic, black magic, and protective magic. These then can be objects of wood, animal parts mixed with herbs, or other substances. Such medicine is not always drunk, rubbed or eaten but the mere property will give a person the force and the luck he or she strives for (see Smith & Dale, 1968), own research).

'Traditional' concepts of illness causation

Many of these elements are hitherto important for the health of a person and might explain a disease a person has because spirits, ghosts or wizards might have an influence on these elements (Smith & Dale, 1968:160): There are direct and indirect causations by the supernatural world on the health of a person. These can be divided under agents, magic and norm breaking resulting in pollution.

Ancestral spirits, ghosts and wizards are directly influencing health of a person:

- Wizards (*balozhi*) have an influence on the shadow that they take away, which also results in the force (breeze; *moza*) being far away, resulting in the death of a person (ibid). This is done also by sending out evil spirits of dead people causing death among the living. Wizards also can send snakes, wild animals, bad food etc to kill somebody (ibid:92).

- Ancestral spirits, although protective in many ways can also cause death of newly born children in a family if there is a problem with worshipping them of a kind of pollution in the household. They thus influence the heart and the breeze of a person or have an influence on the guardian spirit. If death rituals such as ritual cleansing of widows (*cibinde*) are not made in a proper way, the ancestors might come back and causing problems with breeze and shadow of the women causing weakness (Smith and Dale:ibid., see also under pollution).
- Other spirits such as the *bapukas* sit in the ear of a person, causing disturbing sounds, or in the body of a women and influences the birth of a child negatively, thus affecting the breeze and the shadow (own research).

There are as well unintended consequences caused by direct agents such as a ghost of a child causing disturbances or as well the force of an unborn child. Weakness of a person might also be linked of that person being stepped accidentally on a place where foetus of has been buried. This can cause a sickness called *kahungo* (see also Mogensen, 1995). The same is true with animals, who are like some birds said to take a person's shadow.

Direct causations are also happening related to magic for which medicine (*musamu*) is used; there is a large concept of so called luck magic (*isambwe*), often related to increase luck in having a large herd or to increase love of another person (*choolwe*). Some of such luck magic involves medicines linked to bad spirits (*ilomba*) helping a person to become rich. For luck magic a person wanting to be rich or to get another person goes to see a specialist selling such magic. He or she has the choice between a strong magic which involves very negative health consequences or a weaker version of such magic only causing minor problems but not working that strong and successful: People using the strong kind of magic know that close relatives from all sides (including children, brothers and sisters and own wives might die or get infertile as a consequence. This creates then in the view of local people disorders (neurological/psychiatric) and death for magic to increase cattle herds or in the case of love magic urinary incontinence, prolonged bleeding etc.

Indirect causation for magic also happens in the case of magic to protect oneself (*chibeele*), which might cause severe diarrhoea among people in the compound. The same is true if someone gets accidentally in contact with harmful medicine (*musamu*), which is not meant for him or her but nevertheless causes health problems.

Sickness and disease can also be caused by pollution based on breaking of social norms, taboos (*tonda*) especially sexual taboos (*masoto*) or food taboos. Related to food and nutrition is the notion of *masoto*, which is caused adultery of the parents whilst a child has not yet been

weaned.

Generally, the breaking of such taboos results in weakening of the strength of a child or a person as well as child-growth. As a final consequence, taboo braking might cause death. There is a link to pollution or breaking of taboos in the context of death of people or abortion: Forgotten or not well performed cleansing of widows or mothers is seen as a violation of norms for the spirits of a deceased person or the unborn child. Uncleansed widows are again contacted by the spirit of the diseased husband and get sick this way. Mothers of an unborn child might get sick, if they have sexual intercourse without being cleansed before. This then can also cause weakness associated with *kahungo* (see above).

Apart from these sicknesses based on the concept of the supernatural world, there are natural causes seen by the Ila, which are based on non intended forces in the environment (cold, air etc resulting in respiratory infections as well as sickness brought in by different vectors such as bad food, water, air etc). On the direct level there are infections transmitted by people or sickness because of the general situation of a person not linked to the supernatural (teething of a young child etc). Table 7 gives an overview of the described causation (directed or coincidentally) and level (supernatural and natural) links.



Funeral, relatives standing on the grave, 2004

Table 4. Overview of different traditional illness causations

	<i>directed</i>	<i>coincidentally</i>
<i>super-natural</i>	agents Ancestral spirits (<i>mizhimo, busangu, luwo</i>) • <i>Cibinde</i> madness Actors inside the body (<i>bapuka</i>) • prolonged delivery; ear problems/dizziness Wizard	Ghost/vital force of unborn child • <i>kahungo, luhumwe</i> Animals • <i>cikomwe</i> (bird) takes <i>izhina</i>
	magic Luck magic, (<i>isambwe, hilomba</i>) • neurolog./psychiatr. disorders, death Harmful love magic • urinary incontinence, prolonged bleeding (<i>kuzwa menzhi, kalowa</i>)	Protective magic (<i>cibeele</i>) • severe diarrhea Accidental contact with harmful magic
	pollution Breaking a taboo (<i>tonda</i>) (e.g. post partum abstinence (<i>masoto</i>))	
<i>natural</i>	environment	Season/air/coldness • Febrile infections
	transition Teething, weaning • diarrhea worms	Through ingestion • Diarrhoea

Change in the traditional medical system and concepts

Since the colonial times with missionary activities including hospitals and clinics, formal education and new concepts of health, there has been a considerable change in the way people view health issues and explain causations. A lot of Christians do no longer believe in wizards, ancestral sprits and the notion of relation to them causing sickness. Therefore, some aspects of the body/person concepts no longer holds true for these people. In addition, new formal education and migration brought in new concepts of illness and ideas about causations. But as the formal medical system is so weak some “traditional” concepts have remained and

traditional healers, diviners and herbalists are visited regularly by many local people. While the notion of agents (ancestral spirits, bad spirits and small *bapuka* spirits and the idea of witchcraft) is weakening, other notions of causation such as magic and especially pollution remain strong and are also transformed with “traditional” ideas from other ethnic groups or transferred local “neo-traditional” notions: persisting ideas about magic comprise luck and love magic such as *isambwe*, and notions of violation of marital norms such as in the case of *masoto*, which is caused by the breach of a postpartum abstinence taboo through an alleged pollution of breastmilk.

Nevertheless, most traditional practitioners primarily treated common diseases and disorders such as diarrhoea and febrile conditions. They were often the first to be contacted in cases of genital lesions because they did not require partner notification.

Traditional practitioners treated of course illnesses where supra-natural causes were suspected. Severe cases of witchcraft or magic were however rare and often diagnosed only post mortem; expressing such a suspicion could be sued by the state. Disturbances caused by ancestral spirits could cause mental illness, but the most common occurrence concerned babies who were considered crying too much. A diviner would be called to identify which ancestral spirit was disturbing the baby, and the child had to be named after that person.

Some potentially harmful magical practices took place only covertly. In these cases a witchdoctor was consulted, who lived further away, in order to keep the visit secret. This concerned powerful but dangerous luck medicines, used by men as well as women. Such luck magic could set free an *ilomba* ghost, known to attack people viciously and sometimes even causing death. Another dangerous magic for wealth was *isambwe*, which was believed responsible for the killing of children.

While severe cases of witchcraft and harmful magic were considered a rare exception, the use of magic was ubiquitous. Magic was used between husband and wife to keep the partner faithful, or between co-wives so that the rival would suffer from urinary incontinence or prolonged monthly bleeding, making her less attractive for the husband. If a harmful medicine existed, so did a protective.

Apart from traditional practitioners, most households knew a wide range of medicinal plants which they administered either for protective or therapeutic purposes. These medicines were also shared among neighbours. Especially in very remote places in the plain, in the cattle camps or the fishing villages along the Kafue River far away from permanent settlements, people treated most of their ailments on their own in the absence of both traditional practitioners and modern medical services.

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METHODS

In this study a methodological triangulation was applied, combining an epidemiological with an ethnographical approach. This allowed the contextualisation of findings, as well as the testing of hypotheses generated during the fieldwork (for a circular approach see Flick, 1998).

The following methods were used:

1. Participant observation for 12 months (twice six months) allowed insights in everyday life, gender-relations, practices related to nutrition, power-structures.
2. Individual interviews and focus-group discussions allowed the deepening of the understanding of particular issues.
3. Household surveys including a food frequency questionnaire and anthropometric data allowed describing food consumption/infant feeding pattern and malnutrition rates.

Research was conducted between August 2002 and July 2004. Fieldwork took place during two periods of six months, from August 2002 to January 2003, and from February 2004 to July 2004. Contact to the study site was established in August 2002 with the help of IUCN Zambia (World Conservation Union), which was facilitated due to personal relation of the IUCN secretary to the area. Not intended, the first study phase took place during the 2002/2003 famine, which developed after a drought the year before.

Research permission and ethical clearance were obtained with support from the Central Board of Health and the University of Zambia.

Qualitative study

For the qualitative study a theoretical sampling was used (Silverman, 2001:251-254). Eight villages were chosen in Mbeza according to the following characteristics: distance from floodplain (access to pasture, fisheries), distance to the road, and major ethnic group. The villages consisted of dispersed hamlets, which were often several hundred meters apart. In these 8 villages focus group discussions and in-depth interviews on food security, livelihoods and household organization, access to resources and institutional change, and on child malnutrition were held (see Annex 1). All interviews were gender-balanced. Participant observation in one village was ongoing over twice six months, where daily activities were observed, social and gender relations studied and decision-making processes discussed.

In a first step, three male and three female local key informants were identified, who belonged to a medium socio-economic stratum, to gain insight in the local community. We lived in the household of one of our key informants, who was a local small-scale farmer. From the interviews with the key informants the interview-guidelines for the topical in-depth interviews were developed, which we commenced after approximately two months of residence in the area. The study participants were suggested by the local key informants according to theoretical selection criteria, and interviewed if they gave their explicit agreement. Most interviews were held in the local language (*ciila*), and translated during the interview.

Towards the end of the first 6 months fieldwork two focus group discussions were held on key topics identified in the individual interviews. Two more were organized during the second research period. The persons participating were selected according to age, gender, marital status, mode of living, and major income-generating strategy. All interviews and focus group discussions were recorded on tapes. All translated sections were fully transcribed, as well as selectively parts of the discussions in Ila.

Household surveys

Apart from qualitative data, a household survey was conducted, a 24 hour retrospective food-frequency protocol, and anthropometric measurements. In the literature the definition of household has been re-conceptualised around economic and social relations of its members, criticizing the notion of a homogenous production unit with joint intentions and decision-making (Chant, 1991; Obrist, 2006). We defined a household according to the local understanding: a compound led by a household head where meals were shared. In polygynous households, the wives used to cook in turns but all household members shared the same meal. To address the different interests and individual aims within a household, we included more than one person from every household in our study.

All households of the selected villages were supposed to be included in the socio-economic survey. In 74% (390) of the 505 households our local field team counted at least one person could be interviewed. Refusal to participate was primarily due to a political conflict in the area: Some persons did not want to provide any information out of fear it might be used to reveal their political standpoint. Only during the course of the research, more households agreed to participate. For comparison, 86 additional households from four randomly selected villages were included in the sample.

In the survey the household head, and in case it was a married man, his (first) wife in their homestead and collected the following information: 1) household composition and demographic information (including information on absent household members), 2) livelihoods: agricultural production and use of natural resources (fish, pasture, bushplants), and other income generating strategies, 3) access to resources and conflicts, 4) annual expenditure budget and decision-making (subsample of 106 households), assets 5) and commodities (livestock, land, plough, boats; car, bicycle), and 6) information on food intake and food preferences. Information regarding point 3 to 6 was collected gender-separate. To assess energy and protein intake, the amounts consumed over the last 24 hours were estimated using a standard 200 ml cup; if possible, the amounts consumed were physically measured with the cups. Standard food composition tables for Africa (FAO) were used to calculate the individual daily consumption.

Anthropometry

A local team of fieldworkers including 3 women and 3 men with secondary education, but no further formation, and who were well integrated in the local community, was recruited and trained to conduct the household surveys and the anthropometric measurements. For the use of anthropometry the fieldworkers were following a 4 days training at the Zambian Food and Nutrition Commission. To detect a 10% difference in prevalence (of e.g. stunting) between two groups when the prevalence in one group is 48%, $\alpha=0.05$ (two-sided), and a power of 0.8, $n_1/n_2=0.5$, a sample size of $n=912$ is needed. Our sample counted 854 children below 10 years of age after exclusion of 13% of measurements, where the exact age was unknown. In two villages measurements were repeated within two weeks for quality control.

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Part IV Articles

ARTICLES

Outline of articles

The articles presented in the thesis have a common interest, which is the impact of livelihood insecurity and institutional change on nutrition and health issues. All the texts analyse individual strategies and group dynamics in the context of striving for food security (access to resources) and health. The chosen approach refers to power and ideology, which are differently employed by different actors.

In the Kafue Flats people have experienced a kind of modernisation, which has left little material traces. Also the state, and with it the formal health sector, could not hold the promises of reliable, accountable services. As the local people have to organise themselves in their environment with little infrastructure available, 'traditional' forms of organisation, views, and practices might become popular again.

The first article analyzes the effect insecure property rights have on livelihood options, and how this affects food security and child growth. During the Southern African food crisis following the drought year 2001/2002 access to natural resources were determining food availability and child growth. It is examined whether households that have diversified most were hit less by the crisis. Especially for poorer households access to resources was a central element for nutrition in the crisis. Loss of access to natural resources such as fisheries, pastures, and wildlife were affecting the poorer segments of the society (energy intake and child growth).

A similar issue is taken up again in the second article, in which child nutritional status is linked to household types (size) and livelihood strategy. Household factors influencing child nutritional status are investigated in order to identify the most vulnerable groups.

The third article investigates how women perceive the effects polygyny may have for maternal and child health. Several studies identified polygyny as a risk factor for poor child health. For women as caretakers of children the level of wealth and security of a household or family contributes to the attractiveness of polygyny: these households belong mainly to the

wealthier strata. This does however not exclude that there may be negative effects on child nutrition. However, the role of the livelihoods has to be accounted for.

The fourth article deviates from the others in the sense that it investigates treatment seeking in cases of diarrhoea, a common cause and consequence of undernutrition. It is investigated in which cases mothers refer to local illness concepts, and whether and how this shapes their actions for treatment-seeking. It is hypothesised that women refer to a local concept despite of a strong ‘modern’ health discourse, because they lack the financial means to feed their children adequately, and use these explanations strategically with male household heads to mobilize resources, while they make use of an established treatment procedure. At the same time women, who succeed in mobilising resources with the ‘traditional’ concept, apply ‘modern’ treatment or feeding procedures.

The fifth paper then deals with substituting livelihood strategies, which increased during the food crisis. Women in lack of alternatives, and given the high profits, engage in fish-trade. Partly, these deals occur as fish-for-sex exchange. It is argued that fish-for-sex exchanges are based on the good economic opportunities provided by the fish trade in conditions of poverty and changing livelihoods. In this situation women use local marriage institutions to increase the legitimacy of such transactions, and to increase their bargaining power with the fishermen.

Article 1 Property rights, food security and child growth: dynamics of insecurity in the Kafue Flats of Zambia

**Property rights, food security and child growth: dynamics of insecurity in the
Kafue Flats of Zambia**

Sonja Merten¹ and Tobias Haller²

¹ Institute of Social and Preventive Medicine, University of Basel, Switzerland

² Department of Social Anthropology, University of Zurich, Switzerland

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Abstract

This paper provides arguments for discussions of the role of property rights for food security and child nutrition in rural Africa. The results are drawn from a case study in the Kafue Flats of Zambia. They show that unclear jurisdictional boundaries and weak authorities facilitated re-negotiations of property rights related to natural resources in the context of the Southern African food crisis 2002-2003. Access to natural resources was skewed towards the more powerful. On average, food intake was temporarily 50% lower than the annual mean, compared to a less than 10% decrease in the lean season 2003-2004. Large inequalities existed between different clusters of villages, according to the history of immigration and ethnicity. Yet the variability was greatest within villages. Households, which reported increasing difficulties with access to natural resources, had less diversified income-generating activities, lower food intake and more children showing impaired growth. Discussions addressing the growing disparities in rural areas should focus on a realistic implementation and enforcement of property rights in context of situated local power-relations, next to the harmonization of different tenure systems related to natural resources.

Keywords: Property rights; Food security; Famine; Livelihoods; Zambia

Property rights, food security and child growth: dynamics of insecurity in the Kafue Flats of Zambia

Sonja Merten and Tobias Haller

Introduction

In rural African regions, people's income and food supply rely to a large extent on natural resources. Access to land, pasture, or fisheries, and its sustainable use appear to be premises for livelihood and food security particularly when off-farm opportunities to generate an income are scarce. Therefore, property rights mediating access to natural resources play a crucial role (Maxwell and Wiebe, 1999; Jayne et al., 2003; Economic Commission for Africa, 2004).

A clear legislation and effective authorities are critical for the protection of property rights and a sustainable management of natural resources. In Zambia, large parts of land are under customary tenure (Alden Wily, 2000). Historically, customary land tenure comprised most resources on a given territory. During colonial times, land, fisheries, wildlife and forestry were divided into separate entities and put under full government control. Since then, formal and informal customary land rights coexist with statutory property rights, involving concurrent jurisdictional authorities (Haller, 2007).

If statutory and customary laws and regulations are badly harmonized, compete and/or contradict each other, constant re-negotiation is required (Meinzen-Dick and Pradhan, 2002; Haller and Merten, 2006). In the absence of clear jurisdictional boundaries, relationships between authorities, who define and enforce rights and obligations, and individuals or groups of individuals become critical. Particularly if pressure on natural resources increases due to external factors, rules of access and exclusion are repeatedly renegotiated and redefined. It will then largely depend on the bargaining power of an individual or group to interpret regulations in their favour in order to enforce access to natural resources. Such processes skew resources towards the powerful, leading to increasing inequalities in rural areas (Ensminger, 1992).

Although the historical and social processes shaping rural inequalities and differential livelihood options have been extensively investigated from a micro-economic perspective (Chambers and Conway, 1992; Berry, 1993; Ellis, 1998, 2000; Francis, 2000; Smith et al., 2001; Niehof, 2004), the relationship between property rights, problems to diversify rural livelihoods and growing food, and nutritional insecurity is less investigated.

The purpose of this paper is to establish how insecure property rights regulating land, fishery, or wildlife, affects food consumption and dietary diversity of the Kafue Flats' rural inhabitants. We outline local interpretations of property rights regarding natural resources, and discuss the exclusion of less powerful groups and individuals from access to natural resources in context of the 2002-2003 food crisis. We then examine whether restrictions to utilize natural resources resulted in a lowered ability to diversify livelihoods, and whether this affected the ability to cope with the crisis. Finally, we investigate whether child growth, as an indicator of long-term food and nutritional security, was affected by a loss of access to resources.

Methods

The research was conducted between 2002 and 2005 in the Kafue Flats' floodplain in the Southern Province of Zambia. Data were mainly collected in one chiefdom on the south bank of the Kafue River, covering 1300 square kilometres and numbering approximately 27000 inhabitants in 74 villages (17 persons/km²). A mixed-method study combined qualitative data collected over 3 years (participant observation, thematic interviews and focus group discussions) with quantitative survey data from all 390 households of 13 villages. In order to include minorities, five villages were chosen by theoretical sampling, the remaining eight at random. The following information was collected: household composition and demographic information, main livelihood strategy and income diversification, details on agricultural production and use of natural resources (fish, pasture, bush plants), household assets and annual expenditure and information about access to natural resources (fisheries, pasture, wildlife, arable land) compared to 5 years ago (Table 8).

At the individual level, information on food intake and food preferences and anthropometric measures were obtained. A 24h retrospective dietary protocol provided age (four groups: <5, 5-14, 15-49, >49 years) and gender-specific information on individuals from every household. The total amount of food prepared in the household was identified. Staple crop and relish were measured or estimated using a widely available 200 ml plastic cup. In addition, information on food taboos, serving order and meals eaten elsewhere was reported. The anthropometric data was collected using a standardised procedure. Thirteen percent of the anthropometric measurements of children were excluded due to incomplete data (birth date unclear or unknown). Out of 854 children, 498 were measured twice. Monthly weight data of children less than five years of age collected at the rural health centres was included as a reference to perform sensitivity analyses.

Sampling of villages, households, and persons, and time of interviews

	<i>Transhumant agro-pastoralism</i>	<i>Agriculture, less transhumance</i>	<i>Commercial fishing</i>	<i>Hunting/ fishing</i>	<i>Total</i>
<i>Ethno-professional identity</i>					
<i>Ethnic leadership</i>	<i>Ila</i>	<i>Tonga minority</i>	<i>Lozi minority</i>	<i>Batwa minority</i>	
<i>Immigration history</i>	<i>autochthonous</i>	<i>since 1950s</i>	<i>since 1930s</i>	<i>autochthonous</i>	
No of villages in chiefdom	65	6	2	1	74
No of villages included in study	10	1	2	1	14
No. of households in selected villages	266	75	Variable	Variable	-
Households interviewed	234 (88%)	64 (87%)	60	32	390
Adults ≥20 years	440	129	108	41	743
Children/adolescents 10 to 19.9 years	110	49	11	5	175
Children <10 years	474	79	29	11	593
<i>Time of first and second interview: No. of households (%)</i>					
Only during lean season 2002-2003 (Nov-Feb)	18 (8%)	5 (8%)	24 (40%)	27 (84%)	74
Lean season 2002-2003 AND following year	89 (40%)	35 (58%)	10 (17%)	-	134
Only after lean season 2002-2003 (April-June 2004)	127 (52%)	24 (33%)	26 (43%)	5 (16%)	182

Statistical analysis

The qualitative data was coded using Hyperresearch 2 (give reference). EPI6 (give ref.) was used to calculate length/height for age (HAZ), weight for age (WAZ), and weight for length/height (WHZ) z-scores. Descriptive statistics and regression analyses were done with STATA (Release 8.0, Stata Corporation, College Station, TX, USA). Linear regression models with a random effect for household were employed to assess the influence of main livelihood strategies and declining access to natural resources on energy intake, HAZ scores and WHZ scores. Multivariate logistic regression models using forward selection at the 0.20 level were calculated for binary outcomes (stunting, wasting). The covariates considered were household assets, sanitary infrastructure, number of income generating activities, educational level, immigration, age, sex, health status and season. Interactions between main livelihood strategy and immigration, and main livelihood strategy and season were investigated. Two-sided p-values of <0.05 and <0.10 were considered as statistically significant for main effects and interactions, respectively.

Results

Research area: Recent developments in the Kafue Flats

The Kafue Flats lie in a semi-arid area with approx. 800 mm annual rainfall. Every year, between 3000 and 5000 km² of the plain are inundated. The majority of the population lives in the adjacent woodlands (Ila/Lundwe) and engages in transhumant pastoralism driving cattle into the floodplain during the dry season. Several fishing villages and camps of indigenous (Batwa) or immigrated fishermen (mainly Lozi) are located along the Kaufe river. Agriculture dominates further south in the woodlands (immigrated Tonga groups).

Over the last decades the region has been exposed to several crises. The collapse of the copper prices in the 1970's left the Zambian nation with declining state services and increasing unemployment (Ferguson, 1999). Between the 1980's and early 1990's, a tick-borne disease (caused by *Theileria parva*) reduced the livestock in the Kafue Flats (Fandamu, 2005). Shortly afterwards, maize production came under pressure due to the liberalisation of its market. The maize production became then more costly and less profitable in remote areas (Mickels Kokwe, 1997; Mc Ewan, 2003). Maize is the main staple food in Zambia, contributing 70% to the staple crop and about the same percentage to the share of calories (Howard and Mungoma, 1997). In addition to policy changes, drought years and the spread of HIV/AIDS affected rural production (Chapoto and Jayne, 2005). Concomitantly, increasing inequalities in land ownership were observed and identified as important reasons for growing rural disparities since the 1990s (Jayne et al., 2003).

Access to land: plural institutions and differential entitlement

As land in the Kafue Flats is formally under customary tenure, village headmen, appointed by chiefs, monitor the use of land according to local rules of inheritance. They are entitled to allocate usufructuary rights of non-cultivated land to community members or to outsiders and to solve conflicts related to land.

Land was not scarce in the Kafue Flats (population density 17/square km in average; 39/square km in the more densely populated areas). Land disputes arose mainly along roads, which provided better access to markets and around grazing areas in the floodplain. These conflicts were related to suspected power misuse by a headman allocating land (influence of political/kinship relations), to the absence of a formal rental system with well-established rules for compensation in the local tenure system, and linked to the former, to attempts to negotiate reallocations of fallow agrarian land. Previously cultivated land may not be replanted due to lacking inputs (seeds, fertilizer, oxen for ploughing), absence of labour

through sickness (e.g. HIV-associated), or expected low returns. Land reallocation by usufructuary rights is a process difficult to reverse. Often, it excluded permanently former users, who were mainly among the economically weak. Similar exclusion processes skewed access to pasture towards wealthier households, while external market-related factors played a role. In view of the good profits for beef, affluent persons from urban and industrialised areas invested in cattle and were ready to ‘buy’ a kinship tie in order to graze their animals in the floodplain (Haller, 2007). Their large herds occupied pasture area, which was formerly used by the small herds of less wealthy local families. The following statement was emblematic:

People from outside are increasingly coming into our area for grazing. These are rich persons who utilize most of the area we used to use. (Agro-pastoralist, 40 years old, Mbeza, 2003)

Such exclusion processes are mirrored in a loss of access to land and pasture as reported by more than half of the agro-pastoralists’ households (Table 9 b).

Livelihoods and access to natural resources

a) Main livelihood strategy and household assets

	<i>Transhumant agro-pastoralism</i>	<i>Agriculture, less transhumance</i>	<i>Commercial fishing</i>	<i>Hunting/ fishing</i>	<i>Total</i>
<i>Ethno-professional identity</i>					
<i>Ethnic leadership</i>	<i>Ila</i>	<i>Tonga minority</i>	<i>Lozi minority</i>	<i>Batwa minority</i>	
<i>Immigration history</i>	<i>autochthonous</i>	<i>since 1950s</i>	<i>since 1930s</i>	<i>autochthonous</i>	
<i>Households (hh) interviewed</i>	234	64	60	32	390
<i>Main livelihood strategy 2004</i>					
Agro-pastoralism (%)	66	40	-	-	58#
Agriculture (%)	20	39	-	-	23#
Fishing (%)	-	-	95	100	5#
2./3. Sector (Commerce, trade, labour.) (%)	14	21	5	-	14#
Distance to dry season pasture (mean)	10.6 (0-19 km)	27 km	0 km	0 km	
Nearby aquatic resource	Seasonal river	Seasonal river	Lagoon	Permanent river	
Hectars arable land per hh (median/mean)	1.5/2.5	0.8/1.4	0/<0.1	0/0.1	1.4/2.3#
No. of cattle per hh (median/mean)	2/15	0/10	0/1	0/<1	2/14#
No. of income generating activities (hh)	2.8	2.5	2.6	2	2.8#

b) Percent of households reporting loss of access to natural resources compared to 5 years ago:

Lost access to Agricultural land (%)	69	52	25	39	68#
Lost access to Pasture (%)	33	38	13	12	33#
Lost access to Fishery (%)	51	52	78	80	51#
Lost access to Wildlife (%)	45	56	50	14	45#
Intensity of reduction (mean)*	1.7	1.9	1.2	2.1	1.7‡

weighted according to number of villages with respective ethnic leadership

* scale: 0= no loss, 1=less than 50%, 2=about 50%, 3=more than 50%

‡ ANOVA (df=3) F=6.84, P=0.02

Analogies in the fishery: De facto open access

Local power-relations also dominated access to fisheries, even if in contrast to land, fisheries are today formally under government control (fisheries, wildlife and conservation laws). Local fishery departments lacked resources to control the fishing activities and licences effectively. This appeared as contributing factor to the persistence of customary regulations. Consent of the Batwa headmen, who used to control customary usufructuary rights, was required in order to fish in a particular zone of the Kafue river. Non-compliance would result in physical violence or in threats of magic attacks. On the other hand, immigrating fishermen were not necessarily willing to comply with local regulations, and referred to the fishing licences, well aware that a control by the fishery department was unlikely. Whether the customary usufructuary rights were respected depended on situated power-relations between migratory and permanently settling groups. When fishing activities by migratory commercial fishermen increased and local authorities were challenged, a classical de facto open access situation emerged in view of the ineffective fishery department. Less powerful groups such as the indigenous Batwa were marginalized, and localised overfishing could be observed (Haller and Merten, 2006; Haller, 2007).

Along the tributaries, which seasonally dried up and were not considered to be commercial fishing grounds, Ila (or Tonga) headmen informally controlled local fishing activities and water utilization. Comparable to the situation along the Kafue River, customary rules were progressively disregarded as the commercial fishing spread to these areas.

In both cases, the combination of the dismantling of local regulations and the ineffective control by the local fishery departments led to a governance vacuum. This was experienced at the local level as a state-sanctioned attempt of appropriation of resources by outsiders, which was fostering a discourse of autochthony and threats of violence.



Commercial fishing camp, 2004

Hunting for profit, poaching for food

Similarly, hunting regulations were perceived as depriving local people for the sake of commercial interests, while conservation played a minor role. The introduction of licensing, Game Management Areas and National Parks (Lochinvar and Blue Lagoon) in the Kafue Flats put game fully under control of the state represented today by the Zambian Wildlife Authority (ZAWA). However, licences were difficult to obtain and much too expensive for most locals. Legal hunting was only profitable for commercial purposes, but required, in addition to licences, initial investments such as guns and transportation. This led to a de facto exclusion of the majority of the people from legal hunting. Participative approaches¹ failed in the perspective of the local population because profits generated in the protected areas went directly to the chiefs, perceived as bypassing the wider population and compensating not even occasional hunting (Haller, 2007).

Although occasional hunting occurred, it was considered dangerous, and game hardly contributed to local livelihoods anymore. Illegal hunting by local people declined (Table 9b) partly because game stocks were excessively exploited by commercial hunting: fraud with licences by the commercial hunters was possibly the most common way of poaching.

Linking access to resources with livelihood strategies

Both, the qualitative and the quantitative results allow constructing a relationship between access to resources, the dominant livelihood strategy and the ability to diversify livelihoods. Due to historical processes, some communities tended to have less access to particular resources. The immigrated Tonga settling south of the Ila villages were further away from the floodplain pasture. Moreover, their ability to obtain usufructuary rights or to shift to areas closer to the floodplain, depended on kinship relations, which they did not necessarily have. As a consequence, they were less likely to invest in cattle and showed the highest proportion of households in the area, which did not rely on any primary production (Table 9a).

Late immigration could also result in the marginalisation of the first-comer groups, as in the case of the fisheries, where the Batwa were outnumbered by migratory fishermen. The Batwa were located in permanent villages on the main river-banks in the centre of the floodplain where alternative income generating activities such as agriculture and cattle herding were difficult due to the flooding. The distance to infrastructure (roads, markets) further restricted

¹ based on the Zambian ADMADDE initiative (Gibson, 1999)

their ability to diversify their livelihoods, and many households continued to rely exclusively on fishing despite a decline in access to the fisheries (Table 9).

Livelihood strategies and the ability to diversify also varied greatly within the different communities. Many households reported a declining use of resources, which they saw as a cause for limited options to diversify their primary production. The survey data showed a relation between a reported loss of access to resources with not engaging in any primary production whatsoever (Odds Ratio 6.4, 95% CI 2.1-19.2) and with a lower number of income generating activities observed in a household (β from linear regression -1.0, 95% CI -1.9, -0.1).

Food consumption during and after the food crisis 2002-2003 according to village characteristics

(Energy and protein intake, age-standardized consumer average)

Ethno-professional identity	Transhumant agro-pastoralism		Agriculture, less transhumance		Commercial fishing, hunting			Total#	
	Ila		Tonga minority		Lozi minority since 1930s	Batwa autochthonous	Lozi/Batwa autoch.		
Immigration history	autochthonous		since 1950s		1930s	thonous	/imm.		
N (consumers/households)	(234/107)	(404/216)	(87/40)	(115/59)	(65/34)	(32/27)	(72/41)	(438/208)	(592/316)
Time period	Food crisis	Ann. Aver.	Food crisis	Ann. Aver.	Food crisis	Ann. Aver.	Food crisis	Ann. Aver.	
	1238								
Energy intake in kcal (SE)	1151 (62)	2225 (62)	744 (70)	2073 (67)	(114)	372 (51)	2220 (128)	1038 (38)	2220 (39)
Protein intake in gram (SE)	42.8 (2.6)	83.4 (2.5)	25 (2.8)	83 (3.1)	70 (6.2)	20 (2.8)	86 (6.1)	41 (1.8)	83 (1.7)
Dairy products, prot. in gram	1	5	1	1	3	<0.5	5	1	5
Meat, protein in gram	3	8	1	3	1	-	3	3	8
Fish, protein in gram	5	11	2	25	40	11	27	6	11
<i>Percent of households</i>									
No food for 24 h (%)	-	-	7	-	9	22	-	1	-
<500 kcal last 24 h (%)	17	-	40	-	16	63	-	22	-
<10% reduction* (%)	22		7		20	-		22	

weighted for the number of villages according to main livelihoods

* compared to energy intake after the food crisis in the same households

Effects of the 2002-2003 food crisis

Overlying the historically produced entitlements, the de facto enforcement of property rights is today strongly shaped by situated power-relations. This became particularly visible during the 2002-2003 food crisis following the drought of 2001-2002. The ability to cope with the crisis depended on livelihood options, which were influenced by the ability to use natural resources. Property rights influenced diversification of livelihoods before the crisis and

determined whether additional resources could be utilized in order to compensate ex post for crop failure and increasing maize prices. Table 10 shows differences between different clusters of villages that related to historically produced patterns of livelihood strategies and resource utilisation. Overall, a decrease of the average energy intake to about 50% (1038 kcal per day) could be observed during the food crisis compared to only 9% during the lean season one year later (2020 kcal during lean season versus 2220 over the remaining months). In particular, forty percent of households of the southern Tonga villages reported an energy intake of less than 500 kcal per consumer over the past 24 hours (average intake 744 kcal). Many households lacked options to cope with the crisis, particularly if they did not have cattle. In addition, the ability to compensate food scarcity with increasing fishing activities in the local tributaries was jeopardised. Fishing, primarily by women, was a customary practice to cope with food scarcity during the lean season. In 2002-2003, commercial fishing close to the villages increased, challenging women's customary rights to fish. It could be observed that fish consumption declined parallel to the consumption of other animal source foods (milk, meat) in the agro-pastoralist and Tonga communities.

Conflicts in the fisheries during the 2002-2003 food crisis

Also in the commercial fishing grounds along the Kafue River, formerly respected usufructuary rights were no longer adhered to during the food crisis. Seasonal fishing camps hosted hundreds of temporary migrants who at times aggressively evicted the sedentary fishermen from their usual fishing grounds. The police was called to resolve the conflicts, but lacked the resources to intervene. The Batwa, who formed the smallest group, were most affected:

Nowadays fish are taken away by many people from other parts of Zambia who come here. ... Now getting food from fish is difficult because catches are going down. So in fish we have no hope. (Batwa fisherman from Nyimba, December 2002)

Being least mobile and least equipped with efficient fishing gear, the Batwa people were temporarily facing problems for catching fish in their former fishing grounds. As discussed before, the location of their villages in the centre of the floodplain did not allow agricultural production, and other sources of income were scarce. Many Batwa households faced difficulties coping with the food crisis. In the 27 households we interviewed during the crisis, the average energy intake was below 500 kcal per day (Table 10). Fishermen settling in the Lozi camps were more mobile and geographically closer to the market infrastructure. Although also affected, they coped much better with the crisis.

**Influence of livelihood strategy on energy intake of adults and children during and after the food crisis 2002-2003
(Results from multivariate mixed-effect linear regression models)**

a) Change# in energy intake (kcal) according to livelihood strategy in adults

	Food crisis 2002-2003 (n=438 in 208 households)		After crisis (n=592 in 316 households)	
ADULTS				
Mean energy intake:				
Agro-pastoralism (Reference category)		1123 Kcal		2132 Kcal
	<i>Coef.</i>	<i>(95% CI)</i>	<i>Coef.</i>	<i>(95% CI)</i>
Agro-pastoralism (Reference category)	Ref.	.	Ref.	.
Agriculture	-279 *	(-556, -1)	153	(-43, 350)
Fishing	243	(-117, 604)	41	(-194, 277)
2./3. Sector (Commerce, trade, labour, craft)	-332 *	(-607, -58)	-376 **	(-639, -113)

b) Change# in energy intake (kcal) according to livelihood strategy in children <10 years

	Food crisis 2002-2003 (n=101 in 208 households)		After crisis (n=483 in 316 households)	
CHILDREN				
Mean energy intake†:				
Agro-pastoralism (Reference category)		1038 Kcal		1413 Kcal
	<i>Coef.</i>	<i>(95% CI)</i>	<i>Coef.</i>	<i>(95% CI)</i>
Agro-pastoralism (Reference category)	Ref.	.	Ref.	.
Agriculture	-11	(-316, 294)	-9	(-192, 173)
Fishing	-65	(-291, 161)	69	(-366, 505)
2./3. Sector (Commerce, trade, labour, craft)	130	(-149, 410)	-277 *	(-514, -39)

** P<0.01; * P<0.05

#coefficients adjusted for number of income generating activities in household, health status, age, sex and season (household assets, immigration, education and health status were not significant in the models)

†mean age 63 months

Inequalities within the woodlands' villages: livelihood strategies and diversification

Similarly striking was the variability between the households in all ethnic communities. During the food crisis, 22% of all households provided less than 500 kcal per day and adult person, despite the distribution of relief food to vulnerable households (Table 10). On the other side of the spectrum, a few wealthy families stored up to several hundred kilograms of maize in order to sell when prices were highest.

Households with cattle were generally more resilient than those relying only on agriculture. Table 11 shows that energy intake of adults living in households, which relied mainly on agriculture, was significantly lower compared to the pastoralists, however only during the food crisis. This supports the interpretation that the lower rate of cattle per capita in the Tonga villages contributed to their greater vulnerability during the food crisis. In addition, merely relying on paid labour or commerce alone was associated with the lowest food consumption

during the famine and afterwards, and it also affected children (Table 11). The fact that the proportion of such households was also higher in the Tonga villages contributed to their greater vulnerability.

Even though engaging in any primary production lowered the vulnerability of households, a greater extent of diversification was generally associated with a higher caloric intake of adults during the food crisis (increase per additional income generating activity: 114 kcal, 95% CI 15, 213), and afterwards (122 kcal, 95% CI 26, 219).

Wasting and stunting of children <10 years: Proportions (%) and Odds Ratios for different livelihood strategies

(multivariate logistic regression, n= 593 in 390 households)

Main livelihood strategy	Wasting (acute malnutrition, WHZ<-2)			Stunting (chronic malnutrition, HAZ<-2)		
	%	OR#	(95% CI)	%	OR#	(95% CI)
Agro-pastoralism (<i>Reference category</i>)	5.6	1		25.3	1	
Agriculture	5.2	0.75	(0.24-2.4)	22.0	1.0	(0.47 – 2.1)
Fishing	11.2	1.3	(0.26-5.9)	39.8	2.0	(0.73 – 5.4)
2./3. Sector (Commerce, trade, labour, craft)	12.7	2.6	*(1.0-7.0)	48.7	2.3	*(1.15 – 4.6)

* P<0.05

coefficients adjusted for health status, age, sex and season (number of income generating activities, assets, water source, maternal education, and impaired health and education of household head were not significant in the model)

Short and long term effects on child nutritional status

During a food crisis, differences in energy intake are expected to become manifest in the nutritional status particularly of children. Table 12 suggests that this took place. Children living in households that were not engaged in any primary production on their own behalf showed a more than twofold risk for wasting (an indicator for acute undernutrition). This risk remained after taking into account an impaired health status (e.g. HIV) of the child and of the caretaker. This is in line with the lower food intake of these children. Children from fishing villages showed also a lower weight for height scores, although this was only significant for children more than three years old (Odds ratio 2.2, 95% CI 1.2-3.9). In this age-group stunting is usually fully manifest (Hadley, 2005). The devastating hygienic conditions and the lack of health care in the fishing villages may contribute to these findings.

We then investigated whether stunting (a result of chronic undernutrition) was as well associated with particular livelihood strategies. In fact, not relying on any primary production was significantly associated with an elevated risk for stunting (Table 12). In the woodlands villages, the ownership of cattle played a role: not having cattle was associated with a twofold risk for stunting in children over 3 years of age (Odds ratio 2.1, 95% CI 1.04-4.3).

Loss of access to resources contributes to growth faltering

Finally we investigated whether an experienced decline of access to resources during the last five years showed a direct relationship with the availability of food and the nutritional status of children. While differences in food consumption and weight for height of children reflect inequalities at a particular time-point, differences in height for age are a consequence of longer lasting or recurrent processes. Households reporting a loss of access to a resource provided actually less food to their children than other households in the annual average, suggesting that the loss was not fully compensated with other income generating activities (Table 13). The relationship was independent from actually available assets, as the adjusted models show. If access had declined for more than one resource, the negative consequences were additive. Children in these households were also more likely to be of impaired growth, implying a negative long-term effect on household food and nutritional security. The effect is found mainly in the age group over three years, where stunting has usually become fully manifest. A loss of pasture was additionally associated with low weight for age.



Preparing the fields, 2003

Effect of restricted access to natural resources (fishery, pasture, wildlife, agricultural land), compared to 5 years ago, on energy intake and on child nutritional status after the food crisis (Mixed-effect linear regression)

a) Effect of loss of access to resources on energy intake of children (5 separate regression models)		593 children < 10 years in 390 households			
		Change in kcal			
		Coef.	(95% CI)	Adj. Coef.#	(95% CI)
i)	Change per additional resource with reported decline	-58 *	(-116, -1)	-102 **	(-203, -42)
ii)	Affected: Fishery	-208 *	(-390, -27)	-289 **	(-472, -106)
				**	
iii)	Affected: Pasture	-199 (*)	(-402, 3)	-370 *	(-529, -212)
iv)	Affected: Wildlife	-98	(-293, 96)	-142	(-331, 47)
v)	Affected: Land	-127	(-316, 61)	-243 **	(-423, -62)

b) Effect of loss of access to resources on Weight for height z-score (5 separate regression models)		593 children < 10 years in 390 households			
Median weight for height z-score (WHZ)		-0.36 (WHZ<-2: Wasting/acute malnutrition)			
		Change in z-scores			
		Coef.	(95% CI)	Adj. Coef.#	(95% CI)
i)	Change per additional resource with reported decline	0.06	(-0.06, 0.18)	0.01	(-0.14, 0.15)
ii)	Affected: Fishery	0.24	(-0.09, 0.56)	0.19	(-0.25, 0.63)
	<i>Restricted to fishing villages (41 children)</i>	-1.19 (*)	(-2.5, 0.05)	-1.28 (*)	(-1.6, 0.06)
iii)	Affected: Pasture	-0.16	(-0.53, 0.20)	-0.54 *	(-1.03, -0.05)
iv)	Affected: Wildlife	0.34	(-0.02, 0.69)	-0.01	(-0.46, 0.44)
v)	Affected: Land	0.10	(-0.23, 0.43)	-0.14	(-0.52, 0.23)

c) Effect of loss of access to resources on Height for age z-score (5 separate regression models)		593 children < 10 years in 390 households†			
Median height for age z-score (HAZ)		-0.94 (HAZ<-2: Stunting/chronic malnutrition)			
		Change in z-scores			
		Coef.	(95% CI)	Adj. Coef.#	(95% CI)
i)	Change per additional resource with reported decline				
	< 3 years	-0.02	(-0.25, 0.21)	-0.14	(-0.43, 0.16)
	3 to 8 years	-0.21 (*)	(-0.44, 0.01)	-0.34 **	(-0.59, -0.08)
ii)	Affected: Fishery				
	< 3 years	0.00	(-0.66, 0.66)	-0.20	(-0.92, 0.51)
	3 to 8 years	-0.20	(-0.80, 0.40)	-0.68 *	(-1.32, -0.05)
iii)	Affected: Pasture				
	< 3 years	-0.74 (*)	(-1.57, 0.09)	-1.24 *	(-2.29, -0.18)
	3 to 8 years	-0.86 *	(-1.61, -0.12)	-1.12 **	(-1.93, -0.30)
iv)	Affected: Wildlife				
	< 3 years	-0.06	(-0.82, 0.71)	-0.20	(-1.13, 0.73)
	3 to 8 years	-1.19 **	(-2.03, -0.34)	-1.48 **	(-2.43, -0.53)
v)	Affected: Land				
	< 3 years	-0.20	(-0.76, 0.37)	-0.33	(-1.06, 0.40)
	3 to 8 years	-0.33	(-0.88, 0.22)	-0.67 *	(-1.31, -0.03)

** P<0.01; * P<0.05; (*) P<0.1

#adjusted for impaired health, sex, age, and season (assets, source of water, maternal education and immigration were not significant in the models).

†if growth faltering is strongest in the first 3 years of life, children up to 8 years of age are expected to be most affected by a loss of access to resources over the last 5 years. Results for the age-groups <3, 3 to 7.9 and 8-10 years have been separately calculated in the model, as stunting is expected to be fully established after about 3 years of age. The coefficients for the age-group >8 years are not shown. They were all not significant.

Discussion

A relationship between insecure property rights, less diversified livelihoods and food insecurity, ultimately affecting child nutritional status, is suggested by both the qualitative and the quantitative results. Ineffective monitoring and sanctioning of property rights and sustainable resource use by the state, incentives to privatize, which reach mainly the politically powerful, and kinship-based customary institutions, all lack effective mechanisms to back up the interests of weaker groups and individuals. As a consequence, access to natural resources is skewed towards the powerful, with far-reaching consequences. We found a negative effect of a formerly experienced loss of access to natural resources on present food consumption, and on child growth as long-term effect. This is a sign that emerging inequalities may not be reversible.

Child growth is also influenced by childcare practices (Pelto, 2000). In the focus group interviews childcare was not perceived as depending on particular livelihoods, economic status or on ethnicity. Inaccurate childcare was mainly attributed to maternal absence from home, low education of the caretakers, lacking parental responsibility and mindfulness and impaired physical and mental maternal health. Even if some of these factors, such as absence from home, are nevertheless likely to be associated with particular livelihoods, it can be assumed that declining resources are causally responsible for increasing maternal (parental) stress, with negative effects also on childcare practices. The pathways affecting child growth by losing access to natural resources may rather be manifold: through increasing poverty and food insecurity, and through deteriorating childcare practices.

Our results suggest that, in order to address food insecurity and finally child malnutrition, it is important to analyse property rights regimes at the local level and in conditions of change. Weak institutions and weak authorities make the enforcement of property rights highly dependent upon external factors and situated power-relations. Particularly during a crisis, the external context and local power-relations may change. For example, increasing exploitation, processing and trade of natural resources and its products may develop into an important coping strategy, if employment opportunities are scarce (Barrett et al., 2001). Accordingly, those communities in the Kafue Flats, which faced increasing competition in the exploitation of a resource during the 2002-2003 crisis and could not protect their own usufruct rights, were hardest hit by the drought-induced famine. This was the case in the fisheries.

In the research area, several attempts to improve tenure security were unsuccessful in terms of reducing existing, or preventing new inequalities. Leasehold titles allowing the rental of customary land for 99 years were introduced in 1995 (Alden Wily, 2000), but only two

powerful leaders and politicians have actually registered their land. Complicated procedures, costs, and the need to get the consent of the local authorities were perceived barriers when considering applying. Locally, adaptations of the customary land rights were considered more effective to prevent further inequalities. For example, the implementation of clear institutions regulating the rental of land in the customary tenure system could counter property alienation, and positively impact total production (Barrett et al., 2001).

On the other hand, opposition arose towards harmonizing the local jurisdiction with the statutory inheritance law, aimed at decreasing particularly gender inequalities. Efforts to reform customary jurisdiction (e.g. the paralegal and community awareness programs of the non-governmental Law and Development Association LADA) were perceived as considering local kinship-based security networks as less important than individual property rights (Merten and Haller, 2005). As long as norms of reciprocity are not taken into account in reforms, efforts to improve the proportion of female land ownership are bound to fail at the local level.

As the various natural resources are no longer integrated in an inclusive property rights regime, problems regarding the sustainable management of wildlife, or the fisheries, were specific. In these sectors developments were characterised by a formal replacement of customary control with statutory regulations (Haller, 2007). But the weak performance of the state resulted in a de facto open access situation (similar cases of low robustness of institutions have been described by (Ostrom, 1990). Under such conditions, the enforcement of user rights depended on the situated bargaining power of individuals, skewing resources towards the more powerful actors, and overexploitation went unsanctioned.

Participatory projects were set up to address the governance vacuum. As reported from other contexts, such approaches were often perceived as serving mainly the local elite (Blaikie, 2006; Brockington et al., 2006). One exception was a locally emerging initiative to overcome the current governance vacuum in the fisheries. Local groups, including fishermen, women, and adjacent pastoralists, developed local by-laws as an addition to the Zambian Fishery Law and statutory amendments (Haller and Merten, 2005). Customary and government regulations and authorities were combined in a co-management regime, developing subsidiary legislation, taking into account the limited resources of the district fishery departments, and the sense of ownership of the local communities. A preliminary implementation suggested that powerful individuals were less likely to profit from unclear situations. Yet the initiative, initially encouraged by the district fishery officers, faced difficulties when seeking support at the central government level, and its formal implementation remains uncertain.

Conclusions

Unclear or insecure property rights instigated processes of exclusion from natural resources, putting at risk food and nutritional security throughout the study population in the Kafue Flats. Consequently, children were negatively affected in their physical development, indicating that these processes of exclusion will have a long-term effect on the population.

Tenure insecurity was linked to de facto unclear jurisdictional boundaries at the local level. The statutory regulations were weakly implemented, and government authorities often failed to protect the resources. This facilitated the persistence of customary regulations, which were perceived as more flexible and better adapted to local needs than statutory regulations and as better protecting claims of the poor. However, in case of conflicts over natural resources, customary usufructuary rights were challenged as they were not endorsed by the government. Effective government authorities are essential to protect property rights of less powerful groups. At the local level, a co-management regime with subsidiary legislation and clear jurisdictional boundaries was a broadly accepted way to harmonize customary and statutory property rights regimes and to counter increasing inequalities within the rural population.

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Article 2 Household size, cattle and child nutrition in the Kafue Flats of Zambia

Household size, cattle and child nutrition in the Kafue Flats of Zambia

Sonja Merten¹, Tobias Haller² and Brigit Obrist³

¹ Institute of Social and Preventive Medicine, University of Basel, Switzerland

² Department of Social Anthropology, University of Zurich, Switzerland

³ Swiss Tropical Institute, Basel, and Department of Social Anthropology, University of Basel, Switzerland

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Abstract

In the Kafue Flats, many achievements of modernisation, such as the introduction of cash crop production and new market opportunities, proved unsustainable. The ‘traditional’ agro-pastoralism has resurfaced as the preferred (secure) livelihood strategy. Large, often polygynous households remained common among agro-pastoralists. In this paper the relation between household type and child nutritional status is investigated.

Results: In line with the local perception of wealth, children living in extended agro-pastoralists families showed better nutritional status than children from smaller families with no cattle. Children under 3 years of age showed better growth with secondary education of the mother. Other risk factors were poverty, having lost access to common pool resources, and if the child was a dependant.

Conclusions: Small nuclear households faced greater difficulties to nourish young children adequately as compared to extended households, which provided over cattle.

Keywords: food crisis, child growth, household size, livelihoods, Zambia

Household size, cattle and child nutrition in the Kafue Flats of Zambia

Sonja Merten, Tobias Haller and Brigit Obrist

Introduction

This study investigates the role of household type for food security and child nutrition in a predominantly agro-pastoralist society in the Kafue Flats of Zambia. Results from previous studies investigating household food security according to household size are inconclusive (Lanjouw & Ravallion, 1994; Reyes, Perez-Cuevas, Sandoval, Castillo, Santos, Doubova et al., 2004; Rose & Charlton, 2001). Also the role of polygyny for child nutritional and health status (Amankwaa, 1996; Amankwaa, Eberstein, & Schmertmann, 2001; Brabin, 1984; Gillett-Netting & Perry, 2005; Hadley, 2005; Madhavan, 2001; Sellen, 1999; Strassmann, 1997; Ukwuani, Cornwell, & Suchindran, 2002), or of female-headed households (Chant, 2003; Chindime & Ubomba-Jaswa, 2006; Katapa, 2006; Onyango, Tucker, & Eisemon, 1994; Reyes et al., 2004) is not univocal. In rural areas, where household structures are often interlinked with production, their ability to cope with shocks depends as well on the vulnerability of particular livelihoods, thus differentially affecting particular types of households (Merten & Haller, 2008).

In the Kafue Flats, many achievements of modernization, such as the introduction of cash crop production and new market opportunities, proved unsustainable. The 'traditional' agro-pastoralism has resurfaced as the preferred (secure) livelihood strategy, and large, often polygynous households were perceived as successful (Haller, 2007). In this paper the relation between household type and child nutritional status is investigated. More specifically this study is to investigate how maternal and child nutrition depend on the household size in the context of their livelihoods.

Study area and local livelihoods

The Kafue Flats, where the study took place, are located approx. 300 km southeast of the Zambian capital Lusaka. The floodplain provides pasture for cattle during the dry season, and is rich in fish and wildlife. Permanent villages are located in the adjacent woodlands, where agricultural production and rainy-season fishing take place. In the Kafue floodplain, diverse livelihood strategies co-exist based on the rich natural environment: fishing, transhumant pastoralism, agriculture, trade and commerce. Ethno-professional boundaries have been diluted through livelihood change,

insecurity and impoverishment: Access to resources has deteriorated for weaker stakeholders due to increasing interest in the exploitation of natural resources as a consequence of the weak economy (Merten & Haller, 2008). An earlier influx of people due to resettlements in the 1960s (Colson, 1971), and changes in agricultural policies in the 1990s (Howard & Mungoma, 1997; Mickels Kokwe, 1997) have contributed to differential impoverishment and food insecurity.

In the eastern part of the Kafue Flats matrilineal organization has been described as underlying the social organization (Colson, 1958), while Smith and Dale, the first colonial administrators in the area, described Ila agro-pastoralists inhabiting the Western part as 'big-man' society where the lineage played an important role, too (Smith & Dale, 1968). Later on Price showed for the neighbouring and related Tonga that the homestead based upon agnatic ties (*lutundu*) represents a central organizing structure in Eastern (Gwembe) Tonga economy and society, while many property rights remained under lineage (*mukowa*) control (Price & Thomas, 1999). This bilateral organization has as well been described for the Western Plateau one decade before (Cutshall, 1980), and is still in place defining household structures mainly of large, extended households.

The study was conducted in the Ila chiefdom Nalubamba (Mbeza) on the south bank of the Kafue River between 2002 and 2005. The chiefdom covers about 1'500 square kilometres and numbers approximately 26'000 inhabitants (18 persons/km²), who live in 72 villages, which are only partly accessible by road. The people are settling in dispersed hamlets. Apart from the larger settlements along the main road settling in a village is usually possible only either through direct kinship relations, or through marriage.

Methods

In order to include all ethno-professional groups, five villages were chosen by theoretical sampling, and eight more at random out of 72 in the chiefdom. All households from a selected village were included in a survey. The definition of a household was based on emic perspectives of what formed a household unit: a compound led by a household head where meals were shared. In polygynous households, the wives took it in turns to cook but all household members shared the same food. The households were categorized according to the following characteristics: extended (>3 adults) or nuclear, polygynous, monogamous, or single-

headed (male or female), and either with, or without, livestock. We then summarized single-headed and nuclear households due to their small number (12 female headed and 17 male-headed single households). In 390 households at least one person could be interviewed. Local fieldworkers including 3 women and 3 men with secondary education, well integrated in the local community, were recruited and trained (4 days at the Zambian Food and Nutrition Commission, plus one week field training) to conduct the household survey and anthropometric measurements.

The following information was collected: 1) household composition and demographic information (including information on absent household members), 2) livelihoods: agricultural production and use of natural resources (fish, pasture, bush plants), and other income-generating strategies, 3) access to resources and conflicts, 4) annual expenditure budget, 5) assets and commodities (livestock, ploughs, boats, oxcarts, cars, bicycles), 6) information on food intake (24 hour retrospective food protocol) and food preferences, and 7) anthropometric data and perceived health status, based on an adapted and translated version of the SF36. Wealth quintiles were calculated based on the annual expenditure budgets and assets. Modern assets costing more than US\$ 100 that were acquired more than a year ago were included assuming a linear amortisation of 5 years for all goods. In a second step we integrated the possession of cattle and upgraded those households with cattle, if in lower wealth quintiles, as follows: Households with 50 or more cattle were automatically coded into the highest quintile. 10-49 cattle were coded as second highest quintile if in a lower category according to the expenditure budget. 5-9 cattle were coded as middle category if in a lower quintile, 1-4 in the second lowest quintile if in the poorest according to the expenditure/asset based categorization.

Anthropometry and food intake

In the anthropometric study adults and children were enrolled according to age group and sex: adults 25 to 49.9-years-old, aged 50 and over; adolescents 15 to 24.9-years-old; children under 3, and children 3 to 14.9 years. If more than one person in each subgroup was eligible, one person was selected at random using a dice. Infants and young children were measured in their villages using a Soehnle pending scale, and length was taken using a locally manufactured standardized wooden measuring board. To take the weight of older children and adults electronic bathroom scales accurate to 0.1 kg were used. Height was taken with a stadiometer accurate to 0.1 cm. Adults and

children wore only light clothes and no shoes. Information about food intake during the last 24 hours was collected for every person with anthropometric data. The intake of bushplants (berries, leaves, roots etc.), soft drinks and beer was explicitly addressed. To assess the quantities the amounts consumed over the last 24 hours were estimated using a standard 200 ml cup. Food composition tables served to calculate estimates for individual daily energy consumption.

Growth is a sensitive measure of long-term nutritional status; low weight for height may indicate acute sickness or malnutrition. Z-scores for length/height for age (HAZ), weight for age (WAZ), and weight for height/length (WHZ), were calculated using EPI6, stratified for children living in cattle-owning households in extended monogamous and polygynous families, and smaller households, and compared for two age groups: children under 3 years of age, where active growth retardation is most marked, and children in middle childhood from 3 to 10 years of age.

Of 2209 anthropometric measurements of children, 1925 were used for the statistical analysis. The remaining 13 percent were excluded due to incomplete data (birth date unclear or unknown). Of 540 adults, 234 were measured twice within 12 months, as were 498 out of 854 adolescents and children. Monthly weight data on children under 5 years of age collected at the rural health centers served as a reference to perform sensitivity analyses.

Study sample

	Extended household		Nuclear household		Total	
	<i>N</i>		<i>N</i>		<i>N</i>	
<i>Households: N=390</i>						
Polygynous	90		16		106	
Female headed	7		13		20	
<i>Households: N=390</i>	<i>Mean</i>	<i>(95% CI)</i>	<i>Mean</i>	<i>(95% CI)</i>	<i>Mean</i>	<i>(95% CI)</i>
Children per household	6.3	(6-6.6)	3.3	(3.1-3.4)	4.9	(4.5-5.3)
Dependants per household (%)	21.3	(7.7-34.9)	8.8	(3.9-13.7)	11.5	(6.7-16.3)
Land per household (ha)	3.8	(3.5-4.2)	1.5	(1.4-1.7)	1.8	(1.5-2.2)
Households owning cattle (%)	59.5	(54.5-64.4)	44.6	(35.2-54.0)	56.1	(51.7-60.5)
Cattle per household	23.9	(18.9-28.9)	4.5	(4-5)	12.8	(5.7-19.9)
Nr income-generating activities	1.7	(1.4-1.7)	1.4	(1.3-1.5)	1.7	(1.5-1.8)
<i>Children 0-3 years: N=375</i>	<i>Mean</i>	<i>(95% CI)</i>	<i>Mean</i>	<i>(95% CI)</i>	<i>Mean</i>	<i>(95% CI)</i>
Age, months	17.7	(16.5-18.9)	13.8	(12.7-14.8)	15.6	(14.8-16.4)
<i>Children 3.01-12 years: N=307</i>	<i>Mean</i>	<i>(95% CI)</i>	<i>Mean</i>	<i>(95% CI)</i>	<i>Mean</i>	<i>(95% CI)</i>
Age, months	97.4	(93.3-101.4)	88.9	(82.9-94.9)	94.6	(91.3-98)
Years of school at 10±2 years	4.4	(3.6-5.2)	2.7	(2.2-3.3)	3.4	(2.9-4.0)
Girls (%)	49	(46.6-51.4)	39.6	(35.3-44)	46.8	(44.8-49)
<i>Adults>20 years: N=648</i>	<i>Mean</i>	<i>(95% CI)</i>	<i>Mean</i>	<i>(95% CI)</i>	<i>Mean</i>	<i>(95% CI)</i>
Height, men	171.7	(170.0-173.4)	169.9	(168.8-170.9)	170.4	(169.5-171.3)
Height, women	160.4	(158.8-162.0)	159.3	(158.5-160.2)	159.6	(158.8-160.4)
School years, men	7.0	(6.3-7.6)	7.0	(6.7-7.4)	7.0	(6.7-7.3)
School years, women	6.5	(5.9-7.0)	6.6	(6.3-7.0)	6.6	(6.3-6.9)
Age, men	43.9	(40.3-47.6)	40.9	(39.0-42.8)	41.6	(40.0-43.3)
Age, married men	44.9	(42.5-47.3)	35.2	(32.7-37.7)	38.3	(36.6-40)
Age, women	38.8	(35.7-41.9)	37.9	(36.0-39.8)	38.1	(36.5-39.7)
Age first wife	41.3	(35.9-46.7)	33.2	(30.2-36.1)	35.1	(32.4-37.7)
Age second wife	33.8	(30.0-37.6)	23.7-	(19.6-27.4)	29.7	(26.2-33.2)
Age third wife	30.1	(28.5-36.1)	-			

Statistical analysis

Frequency tables of maternal, child and household characteristics were calculated (Table 14). In order to assess an association between these characteristics with anthropometric outcomes linear regression analyses were performed. The data was

checked for normal distribution; BMI was log-transformed. As the anthropometric data consisted of unbalanced longitudinal data, mixed-effect linear regression models were fitted for z-scores, accommodating unbalanced data, time-dependant and independent covariates, and allowing for different correlation structures (Kac, Benicio, Velasquez-Melendez, Valente, & Struchiner, 2004). STATA (Release 10.0, Stata Corporation, College Station, TX, USA) served as statistical package. The mixed-effect models were calculated including a random effect for individuals, households and villages. Variables of interest and potential confounders were included in a full model and then variables were eliminated one by one: A variable was retained in the model only if the likelihood ratio test was significant between the models with and without the respective covariate. Possible confounding variables were sex, age, season; for child growth we included the educational level of mother and father, birth weight, child health status, and being a dependant/orphan. For age, quadratic and cubic terms were included if significant at the 0.1 level. Interactions between livelihood strategy and household structure, and of sex and household structure, were addressed by the inclusion of interaction terms.

Energy intake during the food crisis 2003 according to household type

a) Adults above 20 years (N=648)

Household type	Annual average		Food crisis		Coef.# 95% CI	P
	Kcal	SE	Kcal	SE		
Extended , cattle (N=165)	2263 (67)		1436 (60)		Ref.	
no cattle (N=35)	2310 (95)		705 (77)		-655 (-996,-314)	<0.000
Nuclear/small , cattle (N=85)	2029 (87)		1592 (80)		3 (-280,280)	0.984
no cattle (N=106)	2262 (69)		1209 (85)		-379 (-671,-87)	0.011

b) Children 3.01-12 years (N=307)

Household type	Annual average		Food crisis		Coef.# 95% CI	P
	Kcal	SE	Kcal	SE		
Extended , cattle (N=165)	1542 (69)		1371 (72)		Ref.	
no cattle (N=35)	1656 (132)		1262 (111)		-169 (-462,123)	0.255
Nuclear/small , cattle (N=85)	1616 (106)		1379 (98)		-69 (-318,179)	0.581
no cattle (N=106)	1656 (93)		1162 (81)		-261 (-483,-40)	0.021

c) Children 0-3 years (N=375)

Household type	Annual average		Food crisis		Coef.# 95% CI	P
	Kcal	SE	Kcal	SE		
Extended , cattle (N=165)	1069 (78)		1025 (91)		Ref.	
no cattle (N=35)	1052 (167)		754 (91)		-146 (122)	0.197
Nuclear/small , cattle (N=85)	889 (68)		875 (137)		-237 (102)	0.022
no cattle (N=106)	852 (55)		700 (56)		-277 (109)	0.013

Results

We investigate the role of household size in combination with agro-pastoralism, the main economic strategy, on food consumption and nutritional status. In addition we assessed the influence of wealth differentials and of access to common pool resources (fisheries, pasture, land) that cannot be measured as individual capital, but which is a premise for rural livelihoods.

In the Kafue Flats ‘traditional’ agro-pastoralists households are usually larger and are perceived as wealthier than those relying only on agriculture, fishing, trade or labor. Cattle were an investment and buffered the recurrent food crises (Merten & Haller, 2008). On average, the extended households owned more cattle than other families, had access to more land, and were engaged in a larger number of different income-generating activities (Table 13). Food intake and anthropometric data collected between 2003 and 2005 substantiated the local perception that ‘traditional’ extended households which based their livelihoods at least partly on livestock (cattle) were less vulnerable: during the food crisis 2003, adults and children living in agro-pastoralists’ households had actually a higher energy intake (Table 15a-c). After the crisis the difference in caloric intake was not significant. However, the diversity of the foods consumed by children varied significantly between households with and without cattle: children from extended agro-pastoralists’ households consumed in average 2.8 different food types in a day, compared to 2.5 in other households (t-test $P = 0.011$). Also the types of foods consumed varied (Table 16). Overall it can be observed that animal source proteins were more often consumed in wealthier households, with the exception of fish: fish, as common pool resource, has developed into a ‘food for the poor’ in the local perception.

Food consumption of children < 12 years in the last 24 hours from the interview

Children (N=682) <12 years having consumed the following foodstuffs during last 24 hours (%)

<i>Household type</i>	Maize	Vege- tables	Pulses	Bush- plants	Milk	Meat	Fish	any animal product
Extended , cattle (N=165)	88.6	56.5	9.3	22.3	30.9	19.2	25.9	61.3
no cattle (N=35)	95.1	60.4	6.9	18.8	23.8	21.8	14.9	51.0
Nuclear/small , cattle (N=85)	92.9	41.1	11.6	35.7	47.3	19.6	24.1	64.3

no cattle (N=106)	93.4	45.4	4.1	26.0	23.5	13.3	33.7	56.1
<i>Chi2 P</i>	0.177	0.005	0.076	0.022	0.000	0.225	0.005	0.178
not polygynous	93.0	48.5	6.2	26.4	28.7	16.8	27.9	57.1
polygynous	88.6	58.3	12.9	22.0	36.4	21.2	20.5	63.1
<i>Chi2 P</i>	0.104	0.046	0.010	0.303	0.089	0.242	0.087	0.224
poorest	88.6	56.8	4.6	26.1	26.1	8.0	29.6	52.9
wealthiest	93.0	56.1	7.0	31.6	29.8	24.6	24.6	66.7
<i>Chi2 P</i>	0.308	0.522	0.501	0.309	0.604	0.036	0.020	0.044
Total	92.2	51.5	8.3	27.3	31.3	17.4	26.0	59.3

Coefficients from linear regression models, adjusted for age, (age square), sex, health status. Under 3year old: additionally controlled for breastfeeding.

These differentials were as well mirrored in the nutritional status. Adults living in extended households, which in average possessed more cattle than others, had a higher BMI (Table 17). Also children have a better nutritional status if they lived in an extended agro-pastoralist's household, particularly as compared to those living in nuclear families without livestock, which is by far the largest group (Table 18). For the age-group under 3 years old another positive influence on growth was a higher maternal education, possibly reflecting more adequate infant and young child feeding practices.

Adult Body Mass Index

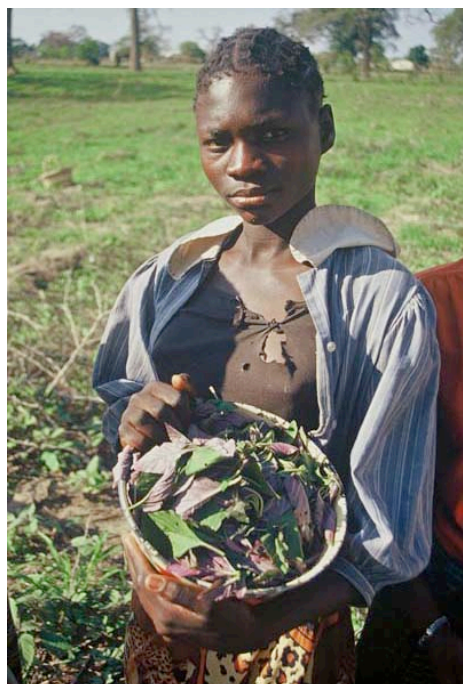
BMI				
N=534 obs=800				
<i>Type of household</i>	<i>BMI SE</i>	<i>Coef.#95% CI</i>	<i>P</i>	
Extended, cattle (N=165)	22.3 (.19)	Ref.		
no cattle (N=35)	21.2 (.23)	-1.23 (-1.99,-0.47)	0.002	
Nuclear/small, cattle (N=85)	20.6 (.34)	-1.76 (-2.78,-0.75)	0.001	
no cattle (N=106)	21.6 (.30)	-0.91 (-1.81,-0.002)	0.049	
<i>Mode of living</i>	<i>BMI SE</i>	<i>Coef. 95% CI</i>	<i>P</i>	
Men living in female headed household	22.9(5.5)	1.77 (-1.6,5.1)	0.304	
Women living in female headed household	21.8(4.2)	0.31 (-1.5,2.1)	0.731	
Men living in polygynous household	22.8(3.1)	1.5 (0.4,2.6)	0.006	
Women living in polygynous household	22.6(3.5)	1.1 (0.1,2.1)	0.034	

#Coefficients for ln(BMI) from mixed-effect models, adjusted for village, sex and age

Factors associated with infant and child nutritional status (height for age, weight for age and weight for height z-scores). Multilevel analysis including a random intercept for individual, household, village.

Children < 3 (N=398)	WHZ		WAZ		HAZ	
Mean z-scores	-0.37 -0.50, -0.22		-0.66 -0.83, -0.49		-0.72 -0.78, -0.66	
Coeff. from linear regression	<i>Crude</i>	<i>Adj.</i>	<i>Crude</i>	<i>Adj.</i>	<i>Crude</i>	<i>Adj.</i>
Extended household, cattle	<i>REF</i>	<i>REF</i>	<i>REF</i>	<i>REF</i>	<i>REF</i>	<i>REF</i>
Extended, no cattle	-0.22 -0.47, -0.03	-0.14 -0.51, -0.03	-0.04 -0.25, 0.18	-0.11 -0.33, 0.10	-0.04 -0.30, 0.23	-
Nuclear, cattle	-0.46 -0.86, 0.06	-0.28 -0.81, -0.05	-0.09 -0.43, 0.23	0.05 -0.30, 0.40	-0.04 -0.59, 0.52	-
Nuclear, no cattle	-0.38 -0.75, -0.01	-0.35 -0.86, -0.08	-0.31 -0.61, -0.00	-0.37 -0.72, -0.02	0.34 -0.05, 0.75	-
Extended household, cattle	0.30 0.08, 0.58	0.32 0.11, 0.53	0.08 -0.22, 0.12	-	-0.03 -0.29, 0.23	-
Polygynous	-0.24	-	-0.27	-	0.41	-
Secondary school	-0.59, 0.11	-	-0.68, 0.14	-	-0.21, 1.03	0.49
Maternal age (+1 year)	-0.22	-	0.23	-	0.01, 0.91	0.01, 0.91
Sex male	0.00	-	0.00	-	0.00	-
Sex male	0.00, 0.00	-	0.00, 0.00	-	0.00, 0.00	-
Dependant/orphan	-0.08	-	-0.10	-	-0.06	-
Dependant/orphan	-0.29, 0.12	-	-0.27, 0.17	-	-0.38, 0.26	-
Bad health	-0.73 -1.20, -0.26	-0.58 -1.01, -0.16	-0.40 -0.88, 0.08	-0.45 -0.85, -0.05	0.05 -0.68, 0.78	-
Bad health	-0.54 -1.00, -0.08	-0.54 -0.96, -0.12	-0.35 -0.69, -0.01	-0.49 -0.82, -0.15	0.00 -0.63, 0.63	-
Birthweight	-0.07	-	0.23	-	-0.03	-
Loss of access to CPR	-0.48, 0.34	-	-0.09, 0.54	-	-0.53, 0.47	-
Loss of access to CPR	-0.03	-	-0.16	-	-0.24	-
Expenditure: Lowest quintile	-0.55, 0.43	-	-0.75, 0.43	-	-1.11, 0.63	-
Expenditure: Lowest quintile	-0.54 -1.03, -0.05	-0.54 -1.03, -0.05	-0.35 -0.82, 0.11	-0.40 -0.78, -0.01	-0.14 -0.86, 0.57	-
ICC village		0.01		0.04		0.09
ICC household		0.10		0.08		0.06
ICC individual		0.26		0.41		0.61
Children 3-12 (N=361)	WHZ		WAZ		HAZ	
Mean z-scores	-0.72 -0.85, -0.59		-1.11 -1.23, -1.00		-1.20 -1.28, -1.11	
Coeff. from linear regression	<i>Crude</i>	<i>Adj.</i>	<i>Crude</i>	<i>Adj.</i>	<i>Crude</i>	<i>Adj.</i>
Extended household, cattle	<i>REF</i>	<i>REF</i>	<i>REF</i>	<i>REF</i>	<i>REF</i>	<i>REF</i>
Extended, no cattle	-0.34 -0.74, 0.05	-0.21 -0.62, 0.20	-0.34 -0.69, 0.01	-0.37 -0.67, 0.06	-0.24 -0.59, 0.09	-0.31 -0.63, -0
Nuclear, cattle	-0.13 -0.59, 0.34	-0.15 -0.64, 0.33	-0.30 -0.71, 0.10	-0.20 -0.60, 0.17	-0.43 -0.83, -0.02	-0.20 -0.57, 0.17
Nuclear, no cattle	-0.46 -0.92, -0.01	-0.49 -0.91, -0.09	-0.49 -0.93, -0.06	-0.37 -0.71, -0.03	-0.42 -0.807, -0.03	-0.22 -0.59, 0.14
Extended, cattle	0.31 0.01, 0.61	0.33 0.00, 0.68	0.29 0.09, 0.49	0.28 0.08, 0.49	0.28 0.04, 0.53	0.27 0.02, 0.52
Polygynous	0.00	-	0.02	-	0.19	-
Secondary school	-0.43, 0.42	-	-0.34, 0.37	-	-0.32, 0.70	-
Secondary school	-0.18	-	-0.17	-	-0.14	-
Maternal age (+1 year)	-0.56, 0.19	-	-0.51, 0.16	-	-0.60, 0.32	-
Maternal age (+1 year)	0.00	-	0.00	-	0.00	-
Sex male	0.00, 0.00	-	0.00, 0.00	-	0.00, 0.00	-
Sex male	-0.18	-	-0.03	-	0.22	-
Dependant/orphan	-0.46, 0.09	-	-0.23, 0.17	-	-0.11, 0.54	-
Dependant/orphan	0.03	-	-0.34	-	-0.44	-
Bad health	-0.40, 0.46	-	-0.68, -0.01	-	-0.92, 0.05	-
Bad health	-0.58	-0.61 -1.30, 0.14	-0.65 -1.00, -0.29	-0.69 -1.04, -0.03	0.17 -0.39, 0.73	-
Land > median	-1.30, 0.14	-	-1.00, -0.29	-	-0.39, 0.73	-
Land > median	-0.57	-	-0.30	-	0.47	-
Loss of access to CPR last 5 y	-1.21, 0.07	-	-0.81, 0.22	-	-0.31, 1.25	-
Loss of access to CPR last 5 y	-0.21	-	-0.46	-0.45	-0.49	-0.45
Expenditure: Lowest quintile	-0.79, 0.36	-	-0.94, 0.03	-0.90 -0.01	-0.94, -0.04	-0.90, -0.01
Expenditure: Lowest quintile	-0.26	-	-0.25	-	-0.25	-
Expenditure: Lowest quintile	-0.79, 0.27	-	-0.68, 0.19	-	-0.56, 0.05	-
ICC village		0.06		0.03		0.09
ICC household		0.05		0.13		0.07
ICC individual		0.60		0.40		0.72

* adjusted for age ; ICC: intraclass-coefficient



extensively elsewhere (Merten & Haller, 2008).

Girl collecting wild oca during drought 2003

Poverty

Children under 3 years living in the poorest quintile showed a significant negative association with low weight for age and weight for height, which are indicators for acute undernutrition. This effect was not seen for growth, though. In contrast for older children, livelihood insecurity caused by a loss of access to common pool resources such as pasture, land, or fisheries was associated with a poorer growth of children greater than 3, possibly mirroring a long-term impoverishment. The role of access to natural resources for food security in the area has been described

Polygyny

76% of the polygynous families are found among the wealthier extended agro-pastoralist's households. Polygyny shows no negative effects on the nutritional status of mothers and children: women living in polygynous unions show a greater body mass index and are less likely to be energy deficient than single married women (BMI<18.5: 8.1% in polygynous households compared to 20.6% in others, Chi squared P=0.046). Whether or not a child lives in a polygynous household, nutritional status did not significantly vary.

Other factors influencing child nutritional status

Fostered children showed a greater risk for being undernourished in the younger age-group, as did fair to poor health of a child. Whether this is a consequence of or a cause for undernutrition cannot be determined with this study design.

Discussion

The findings of this study confirm a varying nutritional status of adults and children according to their livelihoods and household size. Generally, cattle ownership and larger household size was favorable to the nutritional status of adults and children. During the food crisis adults and children living in agro-pastoralists' households consume more energy, which manifests itself in better growth and nutritional status. As regards the influence of livestock ownership,

similar results were observed elsewhere (e.g. Neumann, Bwibo, Murphy, Sigman, Whaley, Allen et al., 2003).

The hypothesis that a dilution of resources due to larger household size may negatively affect children in polygynous households (Gillett-Netting & Perry, 2005; Hadley, 2005) was not confirmed in our study. Of greater relevance is the finding that living in a small family including not more than three adults, the most common household structure to date, was associated with impaired nutritional status among children. Based on modernization theory it was once assumed that nucleation of extended families will follow economic growth and a 'Westernization' of values (Caldwell, 1976). This assumption has been refuted as lacking empirical evidence: in Zambia as elsewhere local social institutions shaping social and economic organization are still strongly influential (Colson, 1958, 1962; Lesthaege, 1989; Price & Thomas, 1999), which is reflected also in the persistence of polygyny in the region (Koktvedgaard_Zeitzen, 2008; Meekers & Franklin, 1995). Modes of living are nonetheless changing: women increasingly decide not to marry or remarry after a divorce or death of a husband (Solway, 1990; van Vuuren, 2003). Social support networks defined through kinship do not necessarily hold in times of crises, jeopardizing the food security of elderly people (Charlton & Rose, 2001; Cliggett, 2006; De Jong, Roth, Badini-Kinda, & Bhagyanath, 2005). But social and institutional transformation affected close-to-nuclear households with children as well. For example, changes in bridewealth have not only altered young people's options for marriage (Ensminger & Knight, 1997) but as well weakened their bond to their kinship, weakening social obligations to assist relatives in times of crises, therefore negatively affecting their food security. Additionally, small households lack the labour force to intensify agricultural production or for herding a large number of cattle, and in the Kafue Flats, there are few opportunities to generate income through paid labour. Moreover, during a food crisis, particularly these households cannot afford to send someone out of the area to find work, which may all contribute to their greater vulnerability (Merten & Haller, 2009).

There are some limitations to our study. Because of local political instability and of the impossibility to access some areas during the rainy season, the quantitative data was incomplete for some households. Some of the small households consisting of a married couple were located within a larger homestead and therefore in proximity to the husband's agnatic line, potentially close to paternal cattle. Others were depending on the more distant matriline and the wife's kin. The fact that household location and composition of young married couples was fluent made an inclusion of such factors in the analysis difficult.

Conclusions

Although the study is limited to a small geographical area, the findings are of relevance for the assessment of culturally-based risk factors for nutrition and health: Specific family arrangements may not exist outside particular livelihoods, as in the example of polygynous agro-pastoralists' households, while small households may face more difficulties to diversify their income generating strategies. A possible isolation of these small households in times of crises should be considered as increasing their vulnerability of nutrition to economic distress.

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Article 3 Polygyny - prosperity - ambiguity? Local views on polygyny and self-rated maternal and child health in the Kafue Flats of Zambia

Polygyny - prosperity - ambiguity? Local views on polygyny and self-rated maternal and child health in the Kafue Flats of Zambia

Sonja Merten¹, Tobias Haller² and Brigit Obrist³

¹ Institute of Social and Preventive Medicine, University of Basel, Switzerland

² Department of Social Anthropology, University of Zurich, Switzerland

³ Swiss Tropical Institute, Basel, and Department of Social Anthropology, University of Basel, Switzerland

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Abstract

This study explores local views on polygyny and the perceived effects polygyny may have for maternal and child health in a rural area of Zambia. Complementary self-rated maternal and child health is investigated. While men and women highlighted the material advantages of polygyny, women mentioned psychological distress and intra-household conflicts about resources if a new wife entered the household. Stress is often likely to occur while the children are still small, and may affect women's resources for care. In line with the findings from the qualitative study intra-household conflicts were associated with poor health of women and children, and children's health status was more often rated as poor if they were living in a polygynous household.

Keywords: Polygyny, gender, livelihoods, self-rated health, Zambia

Polygyny - prosperity - ambiguity? Local views on polygyny and self-rated maternal and child health in the Kafue Flats of Zambia

Sonja Merten, Tobias Haller and Brigit Obrist

Introduction

Polygyny has remained common in Africa, ranging from 10.2% in Malawi to 55.6% in Cameroon, and many children grow up in polygynous families (Tertilt, 2006). A considerably large body of literature investigates the impact of polygyny on child nutrition and health (Amankwaa, Eberstein, & Schmertmann, 2001; Brabin, 1984; Gibson & Mace, 2006; Gillett-Netting & Perry, 2005; Gyimah, 2005; Hadley, 2005; Madhavan, 2001; Madhavan & Townsend, 2007; Sellen, 1999; Strassmann, 1997; Ukwuani, Cornwell, & Suchindran, 2002). The findings from these studies suggest that the effect of polygyny varies between age-groups, gender, and geographical locations: While several studies in Sub-Saharan Africa found a higher child mortality for children living in polygynous households, others found a higher mortality only in certain subpopulations (Brahmbhatt, Bishai, Wabwire-Mangen, Kigozi, Wawer, & Gray, 2002), or demonstrated even a protective effect for the post-neonatal period (Amankwaa et al., 2001; Ukwuani et al., 2002). Similarly variable are findings as regards child nutritional status: For example, results from Southern Zambia showed a gendered influence of polygyny for growth scores (Gillett-Netting & Perry, 2005), while in other settings polygyny was generally associated with a greater risk for impaired nutritional status (e.g. Hadley, 2005).

Despite this interest relatively little is known about women's perception of the impact polygyny has on maternal and child health. 'Having to share a father' was depicted as important negative aspect of polygyny identified by women (e.g. Meekers & Franklin, 1995; H. Ware, 1979), and the many references to witchcraft and sorcery point at considerable distress polygynously married women may experience (Al-Krenawi & BenGurion, 2001; Al-Krenawi et al., 2001; Koktvedgaard Zeitzen, 2008; LeVine, 1962). On the other hand polygynous households may provide better every-day life options in the context of structural constraints, changing livelihoods and increasing social insecurity (Koktvedgaard_Zeitzen, 2008; Merten & Haller, 2005; Swidler & Watkins, 2007).

Several possible pathways how polygyny may affect maternal and child health have been suggested: positively through co-wife cooperation (Borgerhoff Mulder, 1992; Madhavan, 2001; Ukwuani et al., 2002), and negatively through competition (Madhavan, 2001), asymmetries in the distribution of food within the household and a dilution of resources and

care due to larger household size (Gibson & Mace, 2006; Gillett-Netting & Perry, 2005; Hadley, 2005; Strassmann, 1997). This exploratory study aims to contribute insights in women's views of polygyny in relation to maternal and child health, and to compare their perceptions with data on self-rated health obtained from a case study in the Kafue Flats of Zambia.

Women's perceptions of the role polygyny plays for the wellbeing of their children and for themselves will depend on the socio-cultural context and on the way mothers establish social and economic relations with their husbands, co-wives, kin and affines. Judith Butler reminds us that the fundamental critique of polygyny in 'modernized' Western society roots strongly in the inability to imagine alternative forms of defining kinship, or of experiencing intimacy (Butler, 2004). Women contribute to the continuity of the institution of polygyny actively by negotiating their marriage and partnerships sometimes following, sometimes challenging the underlying patterns of domination, inequality and insecurity (Ensminger & Knight, 1997; Madhavan, 2002; Solway, 1990): They manoeuvre in a context framed by local marriage institutions based on 'tradition' and the critique of polygyny by many proponents of a development and health discourse, and Christian churches (Merten & Haller, 2005; H. Ware, 1979).

In the public health discourse polygyny has regained attention in the context of the AIDS epidemic: Polygyny has again become associated with being 'backward' and with being a dangerous mode of living in the era of HIV/AIDS (Bates, Fenton, Gruber, Laloo, Lara, Squire et al., 2004; Malungo, 2001). Earlier on polygyny served advocates of a Malthusian perspective who consider population growth, which is higher in sub-Saharan Africa compared to other regions, a main trigger for the recurrent political, economic and food crises on the continent (Caldwell, 1999; Caldwell & Caldwell, 1987). The interpretation has still a strong hold in local development rhetoric although it has been challenged by accounts of widespread agrarian intensification, out-migration and demographic control (Boserup, 1965; Haller, 2001; Netting, 1993) and by historical descriptions of deprivation and impoverishment through conflict and social and economic disruption in the African context (Berry, 1993; De Waal, 1997; De Waal & Whiteside, 2003; Vaughan, 1987; Vaughan & Moore, 1994). But on the other hand local political decentralization processes have strengthened 'traditional' political authorities and provided 'new' legitimacy for 'traditional' forms of living. This background must be considered if women's perceptions of polygyny and its meaning for child health are to be investigated.

Study setting and methods

The data for this study was collected in the context of a research project on nutrition in the Kafue Flats, a wetland close to the Zambian capitol. The Ila-speaking people of the Kafue Flats have been described as the richest cattle-owning people in Central Africa (Fielder, 1973), shifting their animals between permanent villages in the woodlands, where maize (the major cash crop) and some vegetables are cultivated, to cattle camps in the floodplain. Animals are used for bride price (*chiko* for the male relatives, *malyansima* for the bride), enforcing the power of the elders who lend cattle to their sons, although today some men manage to purchase their own animals in a relatively young age, increasing their economic and social independence. The bride directly profits from cattle paid as indirect dowry (*malyansima*), usually one, sometimes up to four animals. This cattle and its offspring remains the property of the wife even after a divorce or the death of the husband.

Cattle was and still is exchanged e.g. at funerals, securing social and labour relations, and it is used for compensation payments. As cattle are always connected to ancestral spirits (*mizhimo* or *basangu*), obligations mediated through cattle used to be stronger than if only cash was involved (Haller, 2007; cf. Kuper, 1982: for Southern African pastoralists).

The complex web of cattle lending and taking that mediates social relations between men structures hierarchical patron-client relations (Colson, 1962:125; Tuden, 1968: 97-98). For men, livestock has a high political value, as wealth in cattle means political power in addition to the individual economic success. It was, and still is in some traditionalist families, the practice that one man was chosen by the extended family as their headman (*mwami*) and at the same time as administrator of the livestock owned by other members of the residential group (Smith & Dale, 1968).

In the Kafue Flats polygyny (*maali*) provided a rich cattle owner with many sons to herd his cattle and allowed him to better extend social relations and to supply a workforce large enough to meet obligations in terms of agricultural food production towards followers and dependants who in return granted political success. In addition, polygyny is generally considered an effective strategy to increase agricultural production in the area (Colson, 1958; Smith & Dale, 1968). Women's view of polygyny has rarely been scrutinised in older ethnographic literature, but among the neighbouring Tonga, Colson described women's attitudes towards polygyny as ambivalent, but not as solely negative (Colson, 1958: 122-123).

Table 5. Study sample

	Monogamous		Polygynous		Total		P
	Mean	(95% CI)	Mean	(95% CI)	Mean	(95% CI)	
<i>Households: N=390</i>		N=284		N=106		N=390	
Children per household	3.7	(3.4-4.0)	8.1	(7.1-9.0)	4.9	(4.5-5.3)	0.000
Dependants per household (%)	8.8	(3.9-13.7)	21.3	(7.7-34.9)	11.5	(6.7-16.3)	0.036
Land per household (ha)	1.5	(1.2-1.8)	3.0	(1.9-4.2)	1.8	(1.5-2.2)	0.000
Cattle per household	5.3	(3.4-7.3)	39.7	(7.9-71.5)	12.8	(5.7-19.9)	0.000
Cattle per child in household	2.5	(1.7-3.3)	4.3	(3.2-5.4)	3.0	(2.4-3.7)	0.013
Nr income-generating activities	1.57	(1.45-1.70)	1.94	(1.63-2.24)	1.66	(1.54-1.78)	0.011
Any tin roofed houses (% of hh)	12.9	(7.8-18)	43	(27.8-57.2)	19.4	(14.1-24.7)	<0.000
Latrine (% of households)	12.5	(7.3-17.7)	5.9	(1.6-10.2)	9.7	(6.2-13.2)	0.065
Clean water (% of hh)	34.4	(26.9-41.9)	34.8	(25.9-43.8)	34.6	(28.9-40.3)	0.943
Purify water (% of hh)	6.3	(2.5-10.0)	5.8	(1.6-10.1)	6.1	(3.3-8.9)	0.886
<i>Adults 20-49 years: N=435</i>	Mean	(95% CI)	Mean	(95% CI)	Mean	(95% CI)	P
School years, men	7.0	(6.7-7.4)	7.0	(6.3-7.6)	7.0	(6.7-7.3)	0.845
School years, women	6.6	(6.3-7.0)	6.5	(5.9-7.0)	6.6	(6.3-6.9)	0.563
Age, men	40.9	(39.0-42.8)	43.9	(40.3-47.6)	41.6	(40.0-43.3)	0.119
Age, married men	37.0	(35.2-38.9)	42.3	(38.2-46.3)	38.3	(36.6-40)	0.010
Age, women	37.9	(36.0-39.8)	38.8	(35.7-41.9)	38.1	(36.5-39.7)	0.655
Age first wife	33.2	(30.2-36.1)	41.3	(35.9-46.7)	35.1	(32.4-37.7)	0.010
Age second wife	-		32.3	(24.7-35.5)	-		
Age third wife	-		30.1	(28.5-36.1)	-		
Child per woman	2.5	(2.3-2.8)	2.5	(2.2-2.8)	2.5	(2.3-2.7)	0.957

#t-test for continuous data, or chi-squared test in the case of binary variables

Both qualitative and quantitative data have been collected between 2002 and 2006 in Mbeza, an Ila Chiefdom in Namwala District, covering an area of approx. 2000 km² and counting over 24000 inhabitants (population density 13 inhabitants/km²). Mbeza counted 73 villages, whereby homesteads are dispersed over the area. We conducted 45 semi-structured in depth interviews with men and women on household food security, livelihoods, gender conflicts and child nutrition and health. 32 life-histories were collected, and six gender-separated focus group interviews on polygyny, food security and childcare were held in addition. Through participant observation (12 months) additional information was collected.

Household data including data on household composition, livelihood strategy, food security, conflicts about resources, nutritional status and self-rated health status was collected in 390

households from 14 villages. Information on self-rated health was collected with the question 'in general, would you say your health is excellent, very good, good, fair, poor' (J. J. Ware, Nelson, Sherbourne, & Stewart, 1992); information for children was obtained from their caretakers.

From this larger household sample an area subsample (N=139) was identified. Within this area local research assistants visited households once every two months for over a year. Information on diarrhoea episodes that occurred within two weeks from the interview was collected, including detailed information on perceived symptoms, causes, health seeking, medication, social support, problems, conflicts, and missed opportunities. In 102 households a child was reported as having been sick, and their caretakers were interviewed about health seeking behavior. In these 102 households, 135 illness episodes were counted during this time period. Data on health seeking behavior obtained from this sub-study are reported to identify a possible association of a polygynous marriage with social support and health seeking strategies.

Statistical analysis

Descriptive statistics and regression analyses were done with STATA (Release 9.0, Stata Corporation, College Station, TX, USA). Mixed logistic regression models with a random effect for individuals were employed to assess the influence of household and individual characteristics on self-rated health and health-seeking. Multivariable logistic regression models used forward selection at the 0.20 level. Two-sided p-values of <0.05 were considered as statistically significant.

Results

The local context of polygyny: 'backward' or wealthy?

In Zambia, the law bans polygyny unless a woman has given her consent at marriage. Since the 1990s several grassroot organizations (e.g. Women for Change, LADA) toured through the country to inform about women's rights. Nonetheless the proportion of polygynous households reached up to one third in our study area, and there were only few indications that there might be change.

Recent scholarship investigated how specific ideas of development as promoted by international governmental and non-governmental agencies are locally appropriated (Ferguson, 1999, 2006; Klenk, 2004; Mohanty, 1991). These ideas are not perceived as value-neutral: representatives of 'development' are thought of as more than skilled experts, as their

socioeconomic, political-ideological and religious background is mixed with evidence- and human rights-based policy recommendations they are supposed to represent. Also in the Kafue Flats, 'development' was linked to particular political proponents who used development initiatives for their own benefit. When local 'pro-development' exponents reconsidered a project plan originally developed in the 1980s to convert common property pasture area into investor-governed irrigated big-scale agriculture 'development' became locally associated with the fear of losing land to white investors. Wealthy cattle owners (the most 'developed' in terms of education, skills and material values) used this land alienation narrative in their populist rhetoric to create unrest in the poor population in order to disdain the political competitors. This political tactic had externalities on the local level: it strengthened local ethnically defined identities and delegitimized ideas of 'development' fundamentally. Gender, development and health policies were not uncritically considered superior to locally established ways of life. Important to our question, scepticism spilled over also to gender issues and to public health recommendations. The scepticism was sustained by resentments of the fact that in an everyday context local people were often confronted with the dichotomy of being 'backward' as opposed to 'developed' by state officials or, for example, health professionals. The statement of an NGO-representative who was organizing relief food distribution in the Kafue Flats from the main office in Lusaka expresses the social distance, which is reflected in the attitudes of many development experts and, notably, health professionals, towards rural people:

We have a lot of problems with development in Namwala district because of traditional beliefs. The area is suitable for irrigation, but these people are only interested in [high numbers of] cattle ... And there are still many polygamists there. ... As long as they refuse development [referring to the large-scale irrigation scheme] they will always rely on relief food. ... We should stop giving these people food until they stop to reject development (NGO representative, notes from a telephone interview, 2003).

But in the Kafue Flats local livelihoods based on extensive cattle herding and formalized exchange of animals at various social occasions such as marriages and funerals, and extended (polygynous) families, might provide a legitimate and secure strategy. Between 2002 and 2005, polygynous families with cattle accounted for approximately one third of the households in our sample (Table 19). Livestock figured as the main income-generating commodity and saving strategy for the vast majority of these households. On average, the polygynous households owned more cattle than other families, and were engaged in a larger number of different income-generating activities. Livestock has remained a means to build up wealth and economic security, and enables a family to cope with hazardous events such as

droughts, or with unexpected events like sickness in the absence of formal social security (Merten & Haller, 2005, 2008). The difficult market situation in remote areas (bad roads, high transport costs, no cooling facilities, no reliable market for dairy products, unreliable or expensive veterinary services) favours the traditional extensive herding system, relying on a large labour force, and where labour is difficult and costly to obtain, extended families and polygynous marriages creating alliances between families can provide a workforce based on local obligations and institutions regulating reciprocity (see also Meekers & Franklin, 1995).

Does polygyny rhyme with prosperity? Polygyny as economic strategy

From those men's point of view who inherited large herds of cattle relying on family members in order to herd the cattle was cheaper than hiring workers, even though less reliable. Also in the Kafue Flats, productivity was the most common reason stated why men marry more than one wife. While sons are needed to look after the cattle, women produce the food for the workforce:

J: I wanted many wives because I wanted to use them for fieldwork. ... I was married five times. (65 year old agro-pastoralist, male focus group discussion)

Men also maintained that polygyny creates competition between wives, increasing household productivity to their own benefit. This favourable attitude towards polygyny was not univocal, though, other men considered polygyny a risk too high to take:

Ch: This getting two wives is bringing a lot of troubles, especially in hard times like these. It is better just having one and satisfy what she wants and solve problems. (42 year-old man, no cattle, male focus group discussion)

Nonetheless polygyny was not only an economic strategy of a wealthy man, as suggested by the two statements. In a crisis situation, marriage can create new alliances, which might increase the resilience of a household, a strategy we observed in several cases.

Also women readily mention economic advantages of polygyny, a fact well known from earlier literature (Colson, 1958: 123-124; Meekers & Franklin, 1995; H. Ware, 1979):

O: I prefer to marry a wealthy man because there is a proverb, which says that it is like with the roads. The caterpillars have to clear the road, and the cars come and pass minus a problem. Which means that the first wife and the second wife they have to work to fetch for wealth. So when I come as the third one, I just eat that wealth which I have found. (38 year-old woman, in 2nd marriage, 7 years of school, female focus group discussion)

B: I also prefer to marry someone who is wealthy already, because then I won't do the hard work. The fields have already been cleared, and I will just plant and eat. There will be no hard labours since the first and second wife have already cleared the fields. (19 year-old woman, unmarried, 6 years of school, female focus group discussion)

But it remains ambivalent and situational to what extent women see either the advantages or the disadvantages of a polygynous marriage. When social and economic security are reasons to stay in a polygynous union, what are the reasons not to? Despite the security women perceived as linked to polygyny there were concerns about intra-household conflicts, which could affect themselves and their children. Problems were related to preferential treatment of a younger wife by the husband, jealousy and pretence between the wives, and HIV/AIDS as a consequence of female extramarital relationships they couldn't control.

Table 6. Associations of polygyny, intra-household conflicts, and other household and individual characteristics with self-reported fair to poor health status

	<i>N in</i>	<i>% poor</i>						
a) Children (N=361)	<i>sub-</i>	<i>health in</i>						
	<i>group</i>	<i>subgroup</i>	<i>OR</i>	<i>95% CI</i>	<i>P</i>	<i>OR adj.</i>	<i>95% CI</i>	<i>P</i>
All children < 5 years	361	10.8		Obs=539			Obs=539	
Polygynous household	71	21.1	2.97	(1.08 - 8.16)	*	3.22	(1.24 - 8.39)	*
Decision making husband	15	26.7	3.23	(0.98 - 10.69)	(*)	2.93	(1.20 - 7.19)	*
Conflict in household	18	16.7	1.71	(0.47 - 6.18)		-	-	
Support network>1 person	194	7.7	0.57	(0.29 - 1.11)	(*)	0.53	(0.18 - 1.55)	
Poorest quintile	47	8.5	0.74	(0.19 - 2.86)		-	-	
Livestock	165	13.9	1.82	(0.77 - 4.33)		-	-	
No land ownership	42	16.7	1.79	(0.64 - 5.05)		-	-	
Secondary school mother	46	4.3	0.34	(0.04 - 2.69)		-	-	
Secondary school father	44	13.6	1.36	(0.43 - 4.32)		-	-	
Age hh (+1year)			1.03	(0.99 - 1.07)		-	-	
Child male sex	190	11.6	1.19	(0.55 - 2.54)		-	-	
Lean season	279	11.5	1.39	(0.56 - 3.45)		-	-	
	<i>N in</i>	<i>% poor</i>						
b) Women, N=213	<i>sub-</i>	<i>health in</i>						
	<i>group</i>	<i>subgroup</i>	<i>OR</i>	<i>95% CI</i>	<i>P</i>	<i>OR adj.</i>	<i>95% CI</i>	<i>P</i>
All women > 18 years	213	6.3		Obs=308			Obs=308	
Polygynous household	58	5.2	2.06	(0.45 - 9.38)		1.27	(0.26 - 6.19)	
Decision making husband	11	16.7	6.70	(0.62 - 72.15)		5.32	(0.73 - 38.66)	(*)
Conflict in household	13	18.2	8.76	(1.63 - 46.91)	*	6.57	(1.58 - 27.44)	*
Support network>1 person	139	2.9	0.51	(0.12 - 2.20)		0.31	(0.08 - 1.25)	(*)
Poorest quintile	28	10.7	5.43	(1.15 - 25.71)	*	10.20	(1.16 - 90.11)	*
Livestock	142	2.8	0.66	(0.14 - 3.05)		-	-	
No land ownership	17	5.9	1.98	(0.25 - 15.81)		-	-	
Secondary school	78	2.6	0.38	(0.07 - 2.00)		-	-	
Lean season	181	2.8	0.43	(0.07 - 2.46)		-	-	
	<i>N in</i>	<i>% poor</i>	<i>OR</i>	<i>95% CI</i>	<i>P</i>	<i>OR adj.</i>	<i>95% CI</i>	<i>P</i>
c) Men, N=222								

	sub- group	health in subgroup				
All men > 18 years	222	8.6		Obs=332		Obs=332
Polygynous household	60	5.0	0.48	(0.14 - 1.68)	0.54	(0.15 - 2.00)
Decision making hh	11	9.1	1.07	(0.15 - 7.79)	-	-
Conflict in household	13	23.1	3.62	(1.00 - 13.03)	*	2.99 (0.78 - 12.24)
Support network>1 person	139	7.4	0.78	(0.35 - 1.73)	-	-
Poorest quintile	41	14.6	2.22	(0.81 - 6.09)	2.09	(1.01 - 4.32) *
Livestock	145	9.0	1.17	(0.43 - 3.13)	-	-
No land ownership	26	11.5	1.47	(0.39 - 5.45)	-	-
Secondary school	78	9.6	2.89	(0.87 - 9.66)	(*)	-
Lean season	186	8.6	1.04	(0.29 - 3.66)	-	-

***: P<0.000, **: P<0.01, *: P<0.05, (*): P<0.1. Pseudo R2 of adjusted models: a) 14.6, b) 18.7, c)4.4

When a married man marries again: unresolved conflicts and psychical distress

According to local norms preferential treatment of a wife and her children by a husband was not acceptable, although it seemed a common problem. Women could deposit a complaint at the local court and ask for compensation. However only material favouritism could be compensated. There were however many intangible effects, which harmed women's psychical integrity. In an example where a married woman left the conjugal household accusing the husband of preferential treatment a new co-wife the hatred that was caused was commented by a friend of hers as follows:

W: When a man has married another wife, there is that excitement, such that the senior wives and their children are no longer considered. And even when it comes to food, they focus only on the new wife. Now she feels hated, and even her children are hated by the husband. These ladies are dangerous. When the new wife is not around, they will go in her room and put some harmful traditional medicine on her bed. The new wife will fall sick, passing water, followed by continuous bleeding, and in the end she dies.

It could take years until the arrival of a new wife was no longer resented by a previous wife. Elisabeth, a 40 year-old woman, experienced heavy distress when her husband married again behind her back when her first child was ten months old and severely sick. She had left the homestead to take the child to the hospital 60 km away, where relatives came to tell her that her husband had married again. She felt desperate.

E: When they told me I felt depressed. I was disappointed, but managed to look after my son, because I feared that he could die. ... When my son was discharged from the hospital I didn't go back to my husband, but went to my father's place. My husband came and started pleading to forgive him until I accepted and went back with him. But life had changed and there was no peace in the home.

S: When did the situation improve?

E: Life continued to be like that for one year.

Elisabeth and her child were heavily distressed in the beginning of her husband's new marriage. On the other hand, polygyny provides options for cooperation. What the example of Elisabeth shows, too, is how women manage to turn a competitive situation with a co-wife into friendship. Today, Elisabeth sees polygyny as advantageous, although she would prefer ideally 'this Ila custom not to continue':

E: Today I see a lot of advantages. First I have my own business, and when I go out there, I can leave the children with the friend, the second wife. I have five children, and she has four. So there is no problem, she takes care of the kids.

Despite the idea that co-wife and marital conflicts may be transient the question remains unanswered whether the distress women experience when a man marries again, often during the time the children are small, affects a woman's and her children's health. Temporary or enduring intra-household conflicts may be mirrored in reduced individual wellbeing. Even though such situations are not limited to polygynous marriages, they seem to occur more frequently (12% as compared to 3.5% in a sample of 390 households). We analyzed data obtained from 213 women and 222 men, aged 20-45 years, from 106 polygynous and 116 monogamous households, and 361 caretakers of children below 5 years of age, about how they rated their health (Table 20). In fact conflicts in the family and male decision-making about resources was associated with fair to poor health of women and children. The fact that such conflicts were more often reported in polygynous households suggests that intra-household conflicts and maternal distress may account for some of the health differentials disadvantaging children living in polygynous households, or, if we assume reverse causality, that illness may cause considerably more conflicts in a polygynous household.

Children: Husband's missed responsibilities and women's allies

It may be hypothesized that more frequent conflicts and the more detached relationship of the marital couple in polygynous households compromises men's commitment for childcare generally. However women and men alike deny this assumption and point at the individual responsibility:

M: Providing for a child depends on the husband. Some husbands they are hard working, others they don't. If the husband is lazy, although he has two or three wives, he can still have a bad harvest. In contrast when the husband is a hardworking man, and the woman is a hardworking woman, they can still produce a good harvest if there is only one wife (36 year-old woman, monogamous marriage, 9 years of school, female focus group discussion)

W: I disagree. Even if you are married alone men don't put mind on the children. Men don't even buy books for the children who go to school. Not even clothes. Sometimes not even relish, not even salt. Not even money to go for grinding maize. With all those things, you as a wife are just alone. (28 year-old

woman, unmarried, 12 years of school, female focus group discussion)

M: In sum we are saying it is just the same, whether you are married as one wife or you are many, in the sense that men don't put more effort to their children. What they know is just to produce them and leave them in the hands of the wives. Usually wives are the ones who take the active part to care for their children: feeding and clothing them, taking them to school. (23 year-old woman, unmarried, 12 years of school, female focus group discussion)

Nonetheless women saw not only men's role as underlying inadequate childcare. Maternal laziness and illiteracy were seen as causes for inadequate childcare, but independent from the type of marriage. One particular problem women saw happen in polygynous households were the consequences of free-riding during cooking cycles: if one wife saves 'special' foods (meat, eggs, fish, beans, garden vegetables) for the husband and relies on other women to buy these foods for all the children when it is their turn, other women will adopt this strategy as well and the quality of the meals will decline².

Men in turn see such problems as well as a failure of male responsibility, with a strong notion of male household leadership:

A: (Sometimes) the head of the family is failing his responsibilities as a father to look after his children. We eat from one dish even if we are married to three women. ... So the wives cook (in turns) for all children. It is wrong to say this wife failed to do her job, it is just failing responsibilities from the side of the man at the head of the household. (35 year-old man, teacher, male focus group discussion)

The difficult relationship between husbands and wives as regards their obligations and responsibilities appears to present a core problem to households. This is aggravated by the volatile status of women: sometimes subordinate, sometimes more autonomous than their husbands. Several men stated that they were financially depending on their women and therefore they would not challenge their position, while others maintained that husbands need to be in control of the household.

Women knew several ways to negotiate the commitment of a husband: sometimes directly, sometimes with the assistance of own kinship (particularly if the man had not yet fully paid his brideprice), or with the help of affines or co-wives who were sometimes as well looking for allies to strengthen their position in the household.

Cooperation with affines and co-wives was also important in the case of child illness. Women living in polygynous households reported that most often a co-wife would be helping them apart from the mainly financial assistance they obtained from their husbands (Table 21). Co-wives provided material (on a loan-basis) or emotional support or took over additional

² We found no indications that children in polygynous households showed lower nutritional scores than their peers, which may be a function of the greater wealth of these households (Merten 2008, submitted).

household tasks. Apart from being assisted by co-wives women living in polygynous households were considerably more likely to obtain help from affines (i.e. the child's patriline, mainly mother-in-law or sister-in-law) as compared to other women who relied more on their own kinship. Spatial proximity to affines is greater in multi-generational polygynous households, and women can try to influence their interaction with a husband through close relationships with affines as their bond to a husband is usually weaker than in monogamous marriages. Assistance by persons external to the family was exceptional.

Table 7. Support obtained during illness episode of children <5 years of age in polygynous and other households (102 children, 135 illness episodes)

	<i>Total</i>	<i>Polygynous</i>	<i>Other</i>	<i>Pearson chi2</i>	<i>Fisher's exact</i>
Total	135	44	91		
Husband	71	23	48	0.763	0.831
Wife's mother	25	4	21	0.032	0.046
Husband's mother	21	11	10	0.035	0.063
Co-wife	16	16	-		
Wife's sister	8	2	6	0.601	0.714
Husband's sister	7	3	4	0.578	0.682
Wife's maternal uncle	7	1	6	0.266	0.418
Stepchild	5	5	-		
Daughter	4	0	4	0.148	0.297
Friend	3	0	3	0.213	0.548
Matriline	40	4	33	0.005	0.007
Patriline	32	13	19	0.280	0.355
No support	7	4	3	0.259	0.421

The limits of support

While women could find ways to negotiate assistance for their children from relatives, affines, and sometimes co-wives, this was much more difficult – if not impossible – in case of a marital conflict. ‘Not being loved’ by a husband was deeply shaking a woman’s self-esteem while she would be expected to be calm and self-controlled. One way to gain back a sense of agency and control in a situation where she was powerless was the consultation with a herbalist for love magic and often also a general counseling as how to deal with the situation. Traditional magic for making a husband love a wife, or for bringing misfortune and ill health to a co-wife was omnipresent in polygynous households:

E: When the second wife came here life changed such that there was no peace in the home. ... Sometimes they were laughing that I thought they were gossiping about me. In the end (after two years) I thought of going to a certain friend to get traditional medicine, and she assisted me. Afterwards, the situation became normal. (40 year-old woman, one co-wife, 6 years of school)

D: There is a lot of jealousy, which is why women look for traditional herbs instead of speaking it out because traditionally it is a taboo. So many women use herbs. (40 year-old man, polygynous, 12 years of school)

There are several alleged consequences accompanying the use of magic that might affect childcare and treatment seeking: it tends to decrease trust within the household, while it may

increases proximity to ‘traditional’ medicine. Women sometimes established close relationships to female herbalists in whom they trust (due to their profession they would not gossip) implying that they tend to be more likely to seek treatment with traditional practitioners also for other ailments. In fact we found in our data on treatment-seeking in case of child diarrhoea that women from polygynous marriages were less likely to consult with the formal health care sector immediately, as were women whose husbands controlled the household resources (Table 22). We do not argue that these results necessarily imply a causal relationship leading from polygyny to sorcery to poor child health, but at least it supports the hypothesis that women from polygynous marriages may consult more often a ‘traditional’ practitioner due to a closer relationship. This would further allow them to pursue several concomitant aims: Possible cases of sorcery would be identified, or a potential ‘misbehaviour’ of the husband (i.e. adultery) which could affect a breastfed child could be discovered. In these cases women would more easily obtain support from affines to demand more commitment from the father for his child (Merten2008 submitted). Additionally, women could protect themselves and their children with ‘traditional medicine’. This would however not keep them from seeing a ‘modern’ health professional in a second step – but potentially with a delay.

It was stated several times that many women saw advantages from consulting a herbalist or healer, in contrast to men who seemed to feared the social consequences as much as the sometimes considerable financial expenses for the medicines. This gendered perspective must be seen in the context of hidden conflicts and unclear responsibilities and gender relations that characterize much of contemporary family life.

Another aspect relates to questions of identity and power. Rural women often experience devaluating attitudes of health professionals who see them as illiterate and ‘backward’, and even more so if they are living in a polygynous household; similarly, poor women feel ashamed to go to the clinic, which exposes them to the public (Merten submitted). Having an affinity to ‘traditional medicines’ and by doing so increasing one’s agency is not necessarily restricted to illiterate women. Also women who were aware of the criticism of local beliefs by the formal health sector or by Christian churches could use traditional herbs in other contexts. Despite incommensurable concepts women made use of both systems. Literate women tended to say that there was ‘African magic’, ‘African illness’, and a respective ‘African’ cure for it that was not amenable to ‘Western’ or ‘white’ thought.

Table 8. Health seeking for acute diarrhoea, 102 children under five years

	<i>N of</i>	<i>% first to</i>						
<i>Clinic first</i>	<i>subgroup</i>	<i>clinic</i>	<i>OR</i>	<i>95% CI</i>	<i>P</i>	<i>OR#</i>	<i>95% CI</i>	<i>P</i>
Total	102	77.5						
Polygynous household	38	69.2	0.29	(0.12 - 0.69)	*	0.20	(0.06 - 0.64)	**
Poorest quintile	12	66.6	0.40	(0.13 - 1.20)		0.35	(0.13 - 0.97)	*
Support>1 person	69	85.5	1.97	(0.82 - 4.76)		1.74	(1.04 - 2.91)	*
Conflicts about treatment	12	91.7	3.97	(0.69 - 22.79)				
Secondary school mother	13	84.6	2.31	(0.34 - 15.89)				
Mother>25 years old	82	84.2	1.42	(0.55 - 3.65)				
	<i>N of</i>	<i>% first to</i>						
<i>Healer first</i>	<i>subgroup</i>	<i>healer</i>	<i>OR</i>	<i>95% CI</i>	<i>P</i>	<i>OR</i>	<i>95% CI</i>	<i>P</i>
Total	102	17.7						
Polygynous household	38	30.8	5.96	(2.09 - 16.99)	**	5.83	(1.69 - 20.14)	**
Poorest quintile	12	33.3	2.71	(0.88 - 8.36)	(*)	3.51	(1.14 - 10.80)	*
Support>1 person	69	14.5	0.70	(0.38 - 1.28)		0.68	(0.45 - 1.00)	(*)
Conflicts about treatment	12	8.3	0.27	(0.05 - 1.56)				
Secondary school mother	13	15.3	0.46	(0.07 - 3.23)				
Mother>25 years old	82	16.4	0.70	(0.26 - 1.90)				
	<i>N of</i>	<i>% ever to</i>						
<i>Ever clinic/hospital</i>	<i>subgroup</i>	<i>clinic</i>	<i>OR</i>	<i>95% CI</i>	<i>P</i>	<i>OR</i>	<i>95% CI</i>	<i>P</i>
Total	102	91.2						
Polygynous household	38	89.5	0.72	(0.16 - 3.29)				
Poorest quintile	12	83.3	0.42	(0.06 - 2.78)				
Support>1 person	69	95.5	2.63	(0.62 - 11.10)				
Conflicts about treatment	12	91.6	0.96	(0.09 - 9.93)				
Secondary school mother	13	92.3	0.96	(0.10 - 9.38)				
Mother>25 years old	82	93.9	3.33	(0.81 - 13.68)	(*)			

adjusted odds ratios; standard errors adjusted for clustering in households. R2 from clinic first model 0.129, R2 from Healer first model 0.136. ***: P<0.000, **: P<0.01, *: P<0.05, (*): P<0.1

Discussion

Women's view of polygyny as related to their own and their children's wellbeing remained ambiguous, balancing accounts of cooperation and competition. On the one side most women accepted economic advantages of living in an affluent polygynous household, increasing their status locally and its prosperity being beneficial also to their children. Overall, polygyny has remained an attractive option for men and women alike, combining the advantages of a greater (female and male) productivity and a larger social network. This keeping so-called

'traditional' strategies has to be seen in the context of power, economic expectations, security options and external changes. As long as mechanisation of farming and reasonable transport opportunities are lacking, and population density is low, the traditional livelihoods based on extensive pastoralism and labour-intensive agriculture still bear advantages compared with other options for those households. Livestock provides security especially during a crisis, and polygyny can contribute to economic success (Haller, 2007; Merten & Haller, 2005). Women saw the sharing of the workload and the looser conjugal bond with a husband, allowing them to pursue own activities, as another advantage. On the other hand women univocally expressed that the distress a new marriage caused to previous wives was too much to bear, and that from this point of view the custom should ideally not continue to exist.

Children were affected in various ways. Women emphasized that fathers' commitment was often not sufficient – however this was not restricted to polygynous families. But most women agreed that conflicts about resources in polygynous household were a problem ultimately affecting particularly children. While women would spend parts of their resources on their husbands in order to strengthen their own position in the household (and maybe expecting that resources would then be skewed towards their sub-household), children, the weakest members of the family, would suffer most from such conflicts.

We described elsewhere that polygyny was not associated with impaired child nutritional status in the study area (Merten submitted). Intra-household inequality disfavoring children was therefore not likely to explain their lower rated health alone. Instead, resources for childcare may be important to consider. In the presence of tensions in the household co-wives would not be similarly attentive to the needs of children from other women in their absence, or their workload may simply be too big given the fact that household tasks and children are more numerous in big households. In sum, there are three ways how childcare can be negatively affected and which are likely to cumulate in polygynous households: temporary or continuous maternal psychical distress (Al-Krenawi et al., 2001), inattentive care by a co-wife, and the sharing of paternal care, eventually characterized by preferential treatment of a particular wife and her children (Meekers & Franklin, 1995). Per se none of these aspects is limited to polygynous households, but local women and men jointly perceived them to occur more frequently if a man lived together with several wives. This is at least partly supported by the quantitative findings in our study showing that conflicts about resources occur more frequently in polygynous households.

Family conflicts are regarded as private issue. Women are expected to be strong, calm, never jealous or litigating (see also e.g. Meekers & Franklin, 1995). Usually they cannot expect

assistance from their kin or affines unless physical abuse is involved: they are instead expected to adapt to the new situation. Divorce in turn, although possible and accepted, is often not a better choice out of material reasons.

In such difficult situations many women seek counselling from 'traditional' medical practitioners in the absence of any other assistance. We may speculate that this affinity to 'traditional' medicine produces externalities, potentially contributing to the lower health status of children living in polygynous households. Women may be inclined to seek treatment for common ailments such as malaria or diarrhoea initially with the health practitioner they know best and trust most. This may actually delay effective care in some cases (Hausmann Muela, Ribera, Mushi, & Tanner, 2002). We have as well discussed elsewhere, that women from polygynous households tend to refer to 'traditional' illness concepts, which related to adultery of the husband, to explain ailments of their children (see Merten submitted). This may be an attempt to put pressure on the husband to respect a marriage, for women an issue more pressing than ever in view of the HIV/AIDS epidemic. It may as well express a close relationship to local female herbalists who assist women when they face problems in their marriage, rather than being an expression of cultural values. But a reluctance to visit the clinic and being identified as 'backward' may additionally contribute to delayed health seeking with the formal health care sector.

Conclusions

Many women highlighted the material advantages polygyny had for them, such as the usually greater wealth of polygynous households, a shared workload, and opportunities to pursue own income generating strategies. It remains to be answered whether these aspects are necessarily different from monogamous marriages. But women clearly underwent considerable stress if a new wife entered the household. Stress is often likely to occur while the children are still small, and may affect women's resources for care: intra-household conflicts were associated with poor health of women and children, and children's health status was more often rated as poor if it was living in a polygynous household.

However in conflictive situations women were expected to be self-controlled and lacked assistance from within the family. In this situation women sometimes established trusting relationships with female herbalists. As an externality we speculate that women's link to the traditional practitioners might indirectly influence health-seeking practice and eventually child health. Another explanation of polygynously married women's reluctance to go to the formal health sector with their children may be their discomfort of being treated as 'backward'. We conclude that women's and their children's needs during household conflicts

remain often hidden, and in contrast to the ‘traditional’ health sector the formal medical sector fails to offer support for psychical distress in such situations. The results of this exploratory study supports the importance of investigating the link between household context, maternal psychical health, childcare and child health in a broader, comparative setting.



O. and D. with their children and nephew, Mbeza 2004

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**Article 4 Strategic use of local illness concepts and plural norms
in the Kafue Flats of Zambia**

**Strategic use of local illness concepts and plural norms
in the Kafue Flats of Zambia**

Sonja Merten¹ and Tobias Haller²

¹ Institute of Social and Preventive Medicine, University of Basel, Switzerland

² Department of Social Anthropology, University of Zurich, Switzerland

submitted to Medical Anthropology

Abstract

This paper explores options ‘African’ illness concepts can provide to mothers during a diarrhoea episode of their children by analyzing qualitative data obtained in a study in the Kafue Flats of Zambia. Mothers distinguished between ‘natural’ and ‘African’ illness causes mainly if the severity of the illness or their own social and material situation would require a particular effort. We explore how local concepts of illness helped mothers to achieve multiple goals during an illness episode of their child. These included bringing pressure on the father of a sick child to provide money and adequate food for the wife and child, strengthening women’s entitlements to household resources. We distinguished three types of treatment seeking: pragmatic, manipulative, and strategic. Where diarrhoea episodes were linked with undernutrition, local illness concepts also avoided connotations of destitution, hunger and poverty being associated with the child’s condition. Poverty is an important issue because where poverty is perceived, social support – a crucial resource for the economically weakest – is withdrawn; poverty is linked to feelings of shame and exclusion from the network of social security based the fact of not being able to fulfil rules of reciprocity. Through the lens of an institutional analysis framework the reasons why local illness concepts do not only serve multiple ends, but facilitate maternal action in her social context are highlighted. Poor women strategically chose – implicitly or explicitly – the illness which was linked to a prescribed set of action mobilizing most social support for them, attempting to manipulate their social environment. Mothers could refer to an illness concept linked to ideas of traditionalism and local morality, which were strongly uphold by some parts of the population such as the elders. This link to a legitimizing ideology alternative to modern medicine increased their bargaining power towards their husbands.

Keywords: treatment seeking, diarrhoea, poverty, stigma, traditional illness concepts, Zambia

Strategic use of local illness concepts and plural norms in the Kafue Flats of Zambia

Sonja Merten and Tobias Haller

Introduction

Diarrhoea in childhood has remained one of the main health problems in developing countries, resulting in substantial increases in mortality and overall disease burden in these regions: each year, approximately 1.8 million children younger than 5 years die from this cause (Kaler, 2008; Kosek, Bern, & Guerrant, 2003). Most of these fatalities could be prevented with access to safe water, improved living conditions, and the prompt treatment of diarrhoea episodes.

Poverty and low health literacy, together with persisting local health beliefs, have been suggested as important causes of delayed treatment seeking and of suboptimal feeding practices in case of diarrhoea (Kaler, 2008; Kauchali, Rollins, & Van den Broeck, 2004; Mabilia, 2000; Nichter, 1988; Yoder, 1995). For example, beliefs about the dangers of polluted or spiritually manipulated breast milk are still found all over the globe and pose a threat to child health as they often incur sudden weaning (Colson, 1958; Cosminsky, Mhloyi, & Ewbank, 1993; Medhi & Bhabatosh, 2004; Samuelson, 2004; Tsoffar, 2004). Such local beliefs often coexist with science-based information: Rather than replacing indigenous worldviews and illness conceptions science-based concepts have been integrated into local systems of meaning, resulting in coexisting and sometimes contradictory causal beliefs (for Southern Africa, see e.g. Gausset, 2001; Hausmann Muela, Ribera, Mushi, & Tanner, 2002; Hunt, 1999; Kalusa, 2007; Mogensen, 1995; Strahl, 2003; Vaughan, 1991).

Despite the considerable body of literature, which links local illness interpretations to worldviews and social realities, the practical options 'African' illness concepts may provide have rarely been explored. Referring to an 'African' illness has been linked to skewing treatment towards affordable and socially more adequate and legitimate healing practices (Castle, 1994; Dettwyler, 1994; Einarsdottir, 2000; Hausmann-Muela & Muela Ribera, 2003; Janzen, 1978). But only few attempts have been made to capture the culturally based options local illnesses may provide systematically.

In this paper, based on empirical data from the Kafue Flats in Zambia, we investigate the use of local illness concepts for diarrhoea and diarrhoea induced wasting. We explore which factors influence treatment seeking and make a particular illness concept attractive to caretakers by exploring how various treatment options relate to everyday livelihood

constraints, to social status, control over resources and relationships, and to the need to legitimize the action taken within a social context.

Theoretical background

There are many different approaches to investigate treatment seeking (for an overview see Hausmann Muela, Muela Ribera, & Nyamongo, 2003; MacKian, Bedri, & Lovel, 2004). Classical approaches can be grouped in studies taking a *supply side approach* (e.g. Penchansky & Thomas, 1981), investigating health system interaction with users, and in studies taking an individual *behaviour-oriented approach* (e.g. Sheeran & Abraham, 1996). Expanding the perspectives of these approaches, the importance of contextual aspects has been highlighted in the context of developing countries (Kroeger, 1983). Obrist et al. recently re-emphasized the everyday circumstances in resource-poor settings, which are often characterized by poverty and livelihood insecurity, affecting options for treatment. It is highlighted that not only the presence of resources, but entitlements and the ability to mobilize them needs to be looked at (Hausmann Muela et al., 2002; Obrist, Iteba, Lengeler, Makemba, Mshana, Nathan et al., 2007; Pelto & Pelto, 1997; Young, 1981). It must be considered that treatment seeking is often not an individual decision-making process, but involves a group of people with different interests and entitlements to resources (Janzen, 1978; Nichter, 2002). Particularly women who are usually the ones seeking care for their children are rarely in the decision-making position within their household, which constrains their treatment seeking options (Kamat, 2006; Tanner & Vlassoff, 1998; Tolhurst, Amekudzi, Nyonator, Squire, & Theobald, 2008). Hence it becomes important how a society reflects on the responsibilities for children and whether those who are entitled to allocate resources feel liable.

Local norms and expectations on how to deal with crisis situations accompanying a particular illness have rarely been explored. Despite the many approaches that have been developed to investigate treatment seeking they do not provide a framework suitable to address the role of historically evolved illness concepts and related healing procedures. As an illustrative conceptualization, we therefore use a framework originally developed in political science (Ostrom, 2005) to emphasize the context, the collective nature of treatment seeking, and the role of norms, rules and regulations to the underlying legitimating belief system, for decision-making (Figure 1).

Thesis

Based on a longitudinal study in the Kafue Flats of Zambia, conducted in a rural agro-

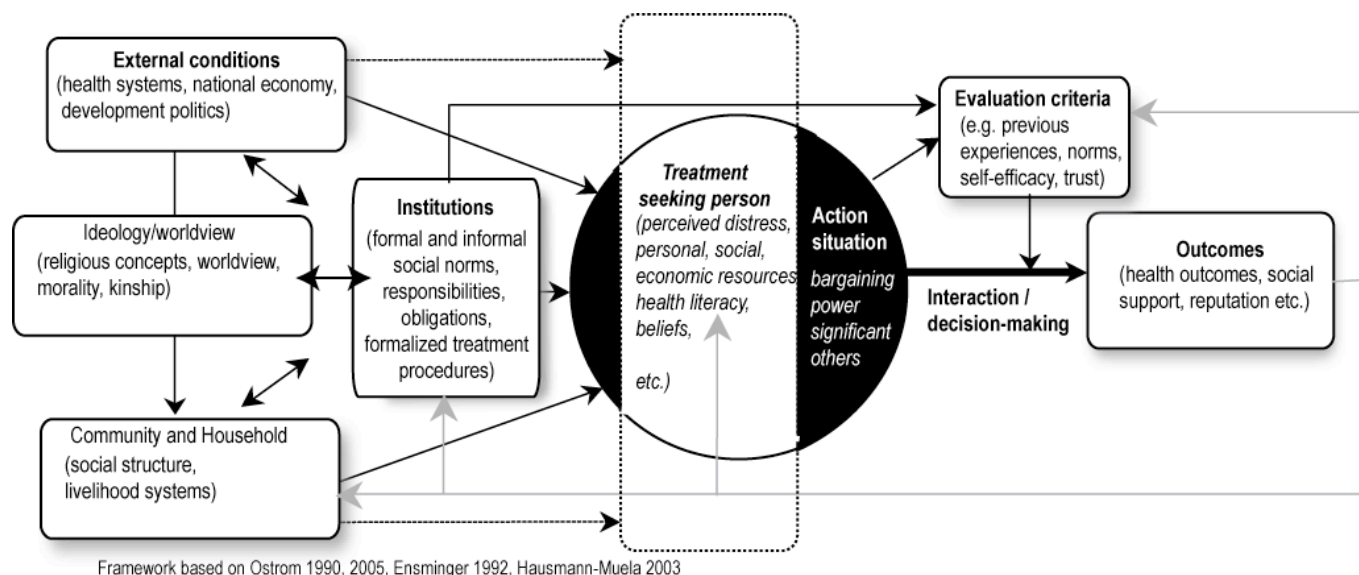
pastoralist population, we investigate maternal strategies to deal with acute and recurrent diarrheic episodes of their children and examine how cultural beliefs interact with social and economic insecurity. We assume that decisions were influenced by a complex combination of various factors, which cannot be comprehensively evaluated nor are fully under the control of the caretaker. Instead action taken was shaped by historically evolved pre-structured patterns of action (norms, rules, regulations) which mediate behaviour between the individual and the collective, and which had proven feasible; even as options were restricted through power relations defining entitlements (Berger & Luckmann, 1966).

For our question, we argue that treatment seeking always involves reflection concerning the effectiveness of an action regarding a child's health, as well as the compliance with known norms and expectations. A phenomenological approach to the role of these norms and expectations for caretaker's action can accommodate the spectrum from internalized, unreflecting normative action to explicit, but socially bound decision-making. Rules and norms that make action of others predictable also influence treatment seeking. They might be linked to different illnesses and belief systems, shaping explicit choice or implicit acting through internalized habits, which are legitimated by a particular ideology and intertwined with power relations (Gastaldo, 1997; Haller, 2007; Knight & Ensminger, 1998; Obrist, 2004).

In this paper we argue that specific 'African' illness concepts relate to specific and predefined ways of acting and involving significant other people in the process of treatment seeking. We hypothesize that women may strategically refer to an illness concept that increases their bargaining power and agency. This depends on the power of a legitimizing belief system or discourse in a particular action context, which supports a woman's action or argument: as the anthropologist Ensminger has shown, ideologies, or discourses that define what is right and wrong, can serve to bargain strategically the legitimacy of a social norm or rule (Ensminger & Knight, 1997). In the health-seeking context, reference to a local illness concept can be a way for otherwise powerless persons to pursue their aims more successfully (Hausmann Muela et al., 2002), but only as long as they are linked to a particular narrative, which is socially backed up (Knight & Ensminger, 1998). We argue that the evaluation of various treatment options will depend on these rules, the legitimacy of the underlying belief system or discourse, and on the bargaining power of an individual to enforce or to resist prescribed action. Expanding Ostrom's framework (Figure 1) (Ostrom, 2005) to include reference to discourses and belief systems as strategy to modify bargaining power in a concrete situation, allows considering the extent to which implicit and explicit social norms conveyed by a

biomedical discourse have become authoritative. This depends on a variety of factors such as the history of the health system – community interaction, the strength of a politicized discourse of modernity locally, or values conveyed by religious movements, which shape the process of appropriation of ‘new’ ideas (Kalusa, 2007 403; Vaughan, 1991).

Figure 2. Institutional analysis framework for decision-making in the context of treatment-seeking



Study Area and Methods

The data presented in this paper was obtained between 2004 and 2006 in the Kafue Flats of Zambia, located approximately 200 km southeast of the capital Lusaka, with a population density of 17 persons per km². During the last two decades, the area has experienced livestock loss and a declining maize production leading to dramatic livelihood change and impoverishment (Haller, 2007; Merten & Haller, 2008). The economic crisis of the Zambian state further weakened the local infrastructure (roads, schools, clinics). Overall, a deterioration of living conditions has been experienced at the local level.

The local Ila-speaking agro-pastoralists were organized in bilateral kinship groups and settle virilocally in dispersed hamlets. Approximately one third of the households are polygynous, mainly among the wealthier cattle-owners (Table 1).

In order to investigate local illness concepts related to diarrhoea, a qualitative study was conducted including participant observation in an Ila village (chiefdom Nalubamba-Mbeza) over a period of 12 months to observe daily activities. In April 2004 four gender-separated focus group interviews were held on child nutrition and care, local illness concepts of diarrhoea and treatment seeking. Afterwards, in-depth interviews were conducted with 12

mothers and 3 fathers of a child with a recent diarrhoea episode, and 5 health professionals (nurses, clinical officers, physicians in the district) as well as 10 indigenous practitioners were interviewed on their views and experiences with child illness.

Between May 2004 and April 2006 we followed up 54 households from two neighbouring villages additionally in order to obtain insights in long-term health seeking behaviour. These families with children under 5 years of age were visited once a month by local female fieldworkers who inquired about their children. If a child had diarrhoea in the last two weeks a caretaker was interviewed, using a semi-structured interview guideline on perceived symptoms, emic illness explanations, and the order of treatment seeking. Among 106 children under 5, who were sick at least once since June 2004, 148 gastro-intestinal episodes were counted.

The focus-group and in-depth interviews as well as the qualitative information from the health seeking questionnaires were coded with Hyperresearch V. 10 to identify important themes. Findings were triangulated with information obtained from participant observation.

Table 23. Characteristics of households, mothers, and children

<i>In-depth interviews</i>	
Number of caretakers interviewed	
Polygynous households	15 (33%)
Extremely poor household	5 (11%)
<i>Longitudinal sample with data on gastro-intestinal illnesses</i>	
Number of households	
Polygynous households	15 (33%)
Extremely poor household	5 (11%)
Number of children <5 years	
Mean age of children (months)	20.5 (SD 14.9)
Mean maternal age	
Mean maternal school years	6.8 (SD 2.4)
Less than 3 years of school	8 (7%)
Reported diarrhoea episodes among 106 children <5 years	
Average number of episodes per child ever reporting diarrhoea	1.4 (1-6)
Number of children with more than 2 reported episodes	10 (9%)

Results: Evolution of local illness concepts

In the local perception diarrhoea is usually caused by a variety of harmful substances ranging from dirty water, rotten or ‘incompatible’ food, to pollution caused by the transgression of a taboo, or sorcery and witchcraft (Figure 2). Biomedical concepts have only partly been

embedded in the local conception of illness, which requires protecting the body from harmful external influences. Although in the focus group discussions contaminated food and water were considered the most common causes of diarrhoea, the hygiene hypothesis was merged with ideas of incompatibilities and the pollution of foods that rooted in the local worldview.

Figure 3. Reported causes of childhood diarrhoea

		directed	undirected
African	<i>magic</i>	<ul style="list-style-type: none"> Harmful luck magic (<i>isambwe</i>) 	<ul style="list-style-type: none"> Accidental contamination (<i>chibeele, changubo</i>)
	<i>agents</i>	<ul style="list-style-type: none"> Ancestral spirit Wizard 	<ul style="list-style-type: none"> Ghost, vital force (<i>luwo</i>)
	<i>pollution</i>	<ul style="list-style-type: none"> Breaking a taboo (<i>masoto</i>) 	
Natural	<i>environment</i>	<ul style="list-style-type: none"> Worms, germs incompatibility 	<ul style="list-style-type: none"> Malaria (<i>cintengantenga</i>) Coldness (<i>camainza</i>)
	<i>transition</i>	<ul style="list-style-type: none"> Teething Weaning 	

Early colonial literature reported three types of ‘supra-natural’ illness causes leading to diarrhoea, which can still be distinguished today (Smith and Dale [1920] 1969 Vol.I:237). 1) Accidentally: A variety of uncontrollable agents or magic substances that accidentally affect the child’s shadow (soul) or pollute food or breastmilk (e.g. *changubo, chibeele*). For these causes preventive medicines are used. 2) Breaking a social norm: The pollution of food when eating at a wrong place, or of breastmilk by breaking the postpartum abstinence taboo (*masoto*). 3) Deliberate harm: The deliberate killing of a child through witchcraft or directed harmful magic (*isambwe*) (Figure 2). These afflictions were mainly subsumed under ‘African’ illnesses. They were considered less common but usually more severe than ‘natural’ illnesses, potentially enduring and followed by severe weight loss and death. Generally, chronic or recurrent diarrhoea, linked to wasting, was commonly attributed to an ‘African’ illness. In

contrast acute and transient diarrhoea was rather believed to be caused by the ingestion of dirty water or bad food as in the biomedical concept, or by coldness or malaria, amalgamating indigenous with ‘modern’ illness perspectives.

The attribution of an illness cause was not consequently linked to specific symptoms in the local taxonomy (Table 2). Although for example milky diarrhoea (*kusomona kwa mukupa*) was hypothetically considered a sign of polluted breastmilk and perceived as very dangerous, the symptom was not necessarily observed if a respective ‘African’ illnesses was suspected. This fuzziness of the taxonomy has been described in the literature making it difficult to link local concepts to biomedical diagnostics (Mayombana, 2004). Similarly the presence of an ‘African’ illness alone did not automatically lead to delays of Western medical treatment.

Some of the ‘African’ illness concepts have disappeared or altered the meaning. Suspicions of witchcraft to explain severe and sometimes fatal afflictions were only secretly followed up in view of the strict prosecution of witchcraft accusations through the state. Of the illnesses caused accidentally by magic, only *chibeele* was common, although limited to a small area, while the other concepts have practically disappeared. *Chibeele* is a protective magic used for infants that may accidentally pollute the breastmilk of other women and served as explanation of ‘contagious’ acute diarrhoea. Wherever gatherings of many mothers with breastfeeding children took place *chibeele* could occur. This concept of accidental pollution through protective magic was known throughout the district under different names and served as explanation of local epidemics (e.g. cholera) particularly if they could not be controlled by the health sector.

But the most popular local illness was *masoto*, the pollution of breastmilk due to an illegitimate sexual relationship, a concept known in many African regions. Several indigenous practitioners we interviewed considered it the most common childhood illness they treated. *Masoto* was believed to be responsible for persisting diarrhoea and wasting. It figured as emic explanation for undernutrition, and its popularity was certainly sustained by the recurrent food crises in the area. Conceptually *masoto*, literally ‘to jump over’, relates to a variety of procreative norms. The first literature reference to *masoto malo* comes from Southern Zambia in the 1950s. It circumscribes a sexual relation of a breastfeeding mother with a man who is not the father of the child (Colson, 1958:155-60). In this study, the unfaithfulness of the man was considered the most common cause of *masoto malo*. The implicit critique of male extramarital relationships, unthinkable in former times, may reflect a shifting interpretation due to the growing bargaining power of younger women within their households, reflecting

also the great concerns with HIV/AIDS in the community. A third type of *masoto* was called *kumitila*, describing a legitimate pregnancy while the previous child is still breastfed.

The popularity of some ‘African’ illnesses as compared to others, and the impossibility to discriminate these illnesses according to the phenomenology of the perceived symptoms from a biomedical perspective raises the question whether these illnesses relate at all systematically to a particular pathology and treatment. The following examples aim at distinguishing distinct types of maternal action while dealing with their children’s illness episodes, by considering how they manoeuvre between medical systems, social realities, and economic constraints.

Table 24. Perceived causes, symptoms, and severity of diarrhea, and treatment seeking with the formal health sector. 135 illness episodes, 106 children

	<i>Perceived illness cause</i>	<i>Attributed type of diarrhea</i>	<i>Local taxonomy of illness</i>	<i>Reported causes (N=135)</i>	<i>No clinic / hospital (%)</i>	<i>Severe diarrhea*</i>	<i>Perceived severity, ranking</i>
Unknown	Unknown	Any	<i>kusomona (=purging)</i>	32 (23%)	3 (9%)	13 (35%)	4
Natural	Malaria, coldness (flue)	Yellow diarrhoea, watery diarrhea	<i>luwo, ,malaria’ chintenganten ga camainza</i>	34 (25%)	2 (6%)	6 (28%)	5
	Worms, germs (dirty water, rotten food)	Watery diarrhoea, evt.mixed with mucus or blood	<i>kusomona (=purging), no special name</i>	24 (18%)	3 (13%)	6 (25%)	6
	Teething	Watery diarrhoea	<i>kuzwa meeno</i>	7 (5%)	0 (0%)	1(14%)	7
,African’	Transgression	Mixed with milk	<i>masoto</i>	16 (12%)	5 (31%)#	14 (88%)	1
	Accidental magic	Mixed with milk	<i>chibeele, changubo</i>	13 (10%)	1 (9%)†	11 (85%)	2
	Sorcery, witchcraft	Any	<i>e.g isambwe</i>	9 (7%)	2 (22%)	5 (56%)	3

*maternal perception

3 with severe diarrhea

† 1 with severe diarrhea

Treatment seeking: Normative expectations and pragmatic action

In the focus group discussions women considered themselves – mothers, not fathers – as primarily responsible for a child’s health and wellbeing. In case of serious illness an educated woman was expected to take a child to the clinic, and failure to do so would be disapproved. Whether a woman could decide on her own about the necessary steps to be taken depended on

a variety of factors: her position in the household, her own personal and material resources, and the ability to leave her home unattended.

The individual interviews suggest that mothers judged the severity of diarrheic symptoms primarily according to the general condition of the child and the course of the illness. Treatment seeking with the formal health sector was common: Over 80% of the children were taken to the clinic (Table 2). In many cases recommendations of the formal health sector were followed irrespective of the accuracy of the illness concept, as in the following two cases:

Anna: [When I] discovered my boy had diarrhoea, I took him to the clinic the following day. ... I obtained ORS and antibiotics, which I gave the child.

Interviewer: Did you use herbal medicines in addition?

Anna: Somehow I don't trust these herbalists. They like saying your child has been witched, but in the real sense it is just an outbreak of a disease. This can create troubles in the home.

Interviewer: why do you think your child got sick?

Anna: Maybe it was the changing weather. I always prepared fresh food, and the child didn't go to another place to eat. (Anna, 25 years old, 7 years of school, 3 children, married)

Martha: [When] the diarrhoea started I went to the community health worker to collect ORS, and gave it to the child. ... Because it didn't get better the child obtained antibiotics the next day. After this treatment was started the diarrhoea stopped.

Interviewer: Why did the child get sick?

Martha: I thought the child had drunk dirty breastmilk, because my breast was full of milk, but she wasn't sucking much.

Interviewer: did you continue breastfeeding?

Martha: yes, I followed the advice of the [health professional].

(Martha, 41 years old, 6 years of school, 6 children, married, 2 co-wives)

These two examples show how cases of 'natural' illnesses do not follow scientific interpretations. The notion of eating something bad at someone else's place didn't follow a mere biomedical logic but suggests a perceived incompatibility of foods cooked by someone unrelated. The idea of incompatibility and pollution was especially strong as regards breastmilk. But nonetheless these mothers relied primarily on the formal health sector and

took up their advice. If treatment was effective, available and affordable, a woman took decisions on her own.

In other cases treatments were combined and complemented in order to achieve the best possible efficacy. Treatments followed a pragmatic approach based on previous experiences, advice from friends and relatives, and the course of the illness:

Berta: The first day of the sickness, the child was passing watery stools the whole day. ... I consulted my cousin, who advised me to boil chopped bark of *mutanta sokwe*. The child drank that medicine, but the condition remained the same. The next morning I talked to the husband who said that I should take the child to the clinic.

Interviewer: What was the reason for the illness?

Berta: Maybe the child has eaten something bad somewhere [in another household]

(Berta, 19 years old, first child, 7 years of school, married)

Berta first tried a home remedy in a case of ‘natural’ diarrhoea. Only when the treatment proved ineffective she consulted the husband and took the child to the clinic. The statement illustrates the sequential decision-making as well as the sequential and situational involvement of the ‘significant others’ (Figure 1). This is as well illustrated in the next case, which was narrated by the local clinical officer:

“My 18 months old niece was taken to me by my sister (Valeria) with severe diarrhoea and dehydration. I started the child on ORS, antibiotics and anti-malaria medication ... but her condition was worsening. I thought we have to take the child home to our parents to die. Then finally we thought, let’s try some traditional medicine for *chibeele* because by now everybody believed that it was this traditional disease. So the grandparents took the child to the traditional healer (day 6). And after that, she got better.” (Erica, 40 years, clinical officer and responsible for the local Rural Health Center; Valeria, 29 years, 5 children, 11 years of school, divorced)

In this case a local illness concept serves as an *a posteriori* explanation of treatment resistant diarrhoea. Despite the contradiction with scientific concepts the clinical officer supported her sister to try indigenous medicine as a last resort. *Chibeele* allowed taking action in case of a pending death and provided an understandable explanation.

Avoiding the formal health sector: poverty, shame and maternal liability

In Zambian government health facilities the consultation and treatment for children 5 years or younger is free. Nonetheless some women would prefer consulting a traditional healer. This was linked to three concurrent phenomena: a low maternal agency in conditions of poverty; a very low formal maternal education indicating poverty of the maternal kinship group, limiting social support on affines and friends; and intra-household conflicts. We present three cases showing a similar pattern, where the mothers avoided consulting the formal health care sector out of similar reasons.

Rebecca belonged to one of the poorest five families in the village. She had married her husband two years ago, when she already had two children. The first wife of her husband had died and left a son, so he wanted to remarry quickly. As Rebecca had already two children and a low formal education her parents agreed to the marriage although he wasn't wealthy.

But her husband spent much of his time in town. Rebecca was left alone with the burden of caring for the five children, including her twin toddlers. If the children were sick she didn't consult the formal health sector:

“When I have a problem with a child I go to traditional healers. I never went to the clinic up to now with my youngest children (twins, 17 months old). ... Going there is embarrassing. I haven't got any proper clothes or anything.... My husband doesn't support me. He recently went to Lusaka with my chickens, and promised me to bring back food and clothes for the children but he didn't.” (Rebecca M., 23, 1 year of school, 4 children. Household among the 5 poorest in the village.)

Rebecca went to the rural health center for the first time when her youngest children (twins) were 19 months old and were severely sick suffering from diarrhea. A friend had convinced her to make this step. Before she hadn't made use of the under-five monthly growth monitoring or the vaccination campaigns. Shame about not being able to feed her children adequately made her hiding the twins from the neighbors ‘because the children looked so thin’. Going to the rural health centre signified exposing her poor condition and her husband's lack of responsibility to the public.

Despite the lack of commitment of their husbands usually women carried most of the blame if their children were sickly, reflecting the gendered power-relations in the local society:

“[If a child is sick] many people blame the mother, saying she is not putting care on the child. And so she would be ashamed because others might think she is very very poor

and not able to keep her child healthy.” (Marlene S., 36 years, 7 years of school. Husband, 42 years, 7 years of school, merchant. Polygynous household, two co-wives.)

In this situation ‘African’ illness concepts could provide women with a means to spread responsibilities and to increase pressure on the husband.

‘African’ illnesses increase mothers’ bargaining power

Like Rebecca also Regina S., 33 years old mother of three children refused to consult a clinic when her youngest child suffered from recurrent diarrheic episodes, was sickly and undernourished. Regina S. was married to a polygynist as the first wife. Similar to Rebecca, her husband, who once owned 20 cattle, was now left with three animals. He refused to support his three wives and the children financially since his wealth had dwindled. But Regina fully depended on her husband. Her limited skills and education made it difficult for her to engage successfully in income generating programs for women, such as chicken or pig rearing. This put her in a state of complete dependency.

Also Rachel maintained during an episode of acute diarrhoea of her severely undernourished youngest child that it suffered from polluted breast milk. By raising an accusation of *masoto*, caused by adultery of her husband, she indirectly claimed her husband’s responsibility:

“This child has the diarrhea of *masoto*. I never went to the clinic with this child. Only the traditional medicine can help in *masoto*. ... You can see, we have nothing here. There is nothing I can expect from my husband. He only gave me money to go to the traditional healer for *masoto*, but I couldn’t take the child to the hospital ... there is nothing the clinic can do.” (Regina S., 33 years old, 3 children, 3 years of school, husband 41 years old, polygynous household with two junior co-wives, impoverished)

Also Regina would not consult the rural health centre with her sick child. Some times back she profited from child nutrition programs, but they were stopped. Only few children could be included in local feeding programs, and more severe cases had to go to the hospital 60 km away.

Regina mentions that feeding programs would have motivated her to take her child to the rural health centre, which highlights that she is well aware about the underlying cause of her child’s condition. *Masoto* enabled Regina and Rebecca to claim her husband’s liability while appealing to financial neglect was much less effective and had no implications for the man. Expressing a suspicion of *masoto* was a legitimate way to demand more commitment of her husband.

Pressure on the relatives was again increased with the deterioration of a child's condition and was often accompanied by the suspicion of harmful magic or witchcraft. This is illustrated by the case of Mary, the 36-year-old mother of five children. Similarly to Regina and Rebecca she was not supported by her husband who was mostly absent from home, and also Mary's relatives were living far away. When her second child was born she stopped breastfeeding the first child at 15 months. Half a year later her first child was severely malnourished, and Mary explained the condition of the child with a premature pregnancy (*masoto, kumitila*). She had stopped breastfeeding while lacking adequate food as well as the knowledge about appropriate feeding practices, which might have been a consequence of her low literacy as well as of her social isolation. When her child got sick and suffered from persisting diarrhoea she used indigenous medicine for *masoto* with the support of her mother in law. Finally they could increase the pressure on her husband to take the child to the hospital. But the child died in the hospital where it had arrived in a dehydrated condition and with severe protein-energy malnutrition.

Mary then had a third child and became soon pregnant with the fourth. Similarly she stopped breastfeeding the third child when it was about 15 months old. It started to be sickly, showing the same signs as her second child who had passed away. The family suspected again *masoto*, and the husband was beaten up. But when the child died as well in the hospital, a suspicion of witchcraft or harmful magic was raised:

“We found out that *masoto* also was connected to witching. After the second child passed away, we went to a diviner. We discovered that some of the parents were not happy with our marriage.” (Mary S, 36 years, 1 year of school, 2004)

A diviner was called, and the whole family became involved. Ultimately the situation cooled down. The husband and his relatives were forced to take on more responsibility as a consequence of these tragic events and after the intervention with the diviner. The couple had three subsequent children who all survived.

The three accounts represent mothers who delayed or refused treatment with the formal health sector over a long time period and had put forward ‘African’ causes of disease trying to manipulate their social environment. The mothers had a low formal education and were economically dependent while their husbands were not supporting their children materially. Their poverty and difficult social circumstances made them prone to social exclusion. In this situation reference to an indigenous illness concept increased pressure on their relatives, because the explanatory framework of illness was linked to disruptions of the social fabric. Fearing accusations of ‘misbehaviour’ or the deliberate use of magic, pressure was great

enough that husbands and relatives became involved. This process did not only increase mothers' bargaining power vis-à-vis their husbands, but as well elderly women's position within the household: while being seen as 'illiterate' as regards child care practices, their inherited indigenous knowledge increased their position in the household. This may partly explain the axis of loyalty between younger wives and their mothers in law.

The fact that *masoto* was so often referred to while other indigenous illnesses have practically disappeared may also root in the increasing concern of the society with sexual relationships in view of the HIV/AIDS epidemic. This link may as well explain the strategic use of *masoto* in completely different situations.

Strategic use of local health concepts: increasing maternal agency

Poverty and illiteracy were not a prerequisite for the attribution of an 'African' illness to a child's condition. As the following two cases of *masoto* show also wealthier and better educated women referred to indigenous medical concepts strategically as it suited alternative aims. Marlene S. was 36 years old and was currently pregnant while she still breastfed her sixth child of 8 months. She knew that despite her premature pregnancy, she was entitled to more household resources than her co-wives if she could put forward a case of *masoto*:

"... After the nurse told me that I was pregnant I knew it was *masoto*. Now I could buy a variety of food for the child, and give beans, *kapenta* [dried fish], milk, fish, cooking oil and sugar. ... I am not afraid, all my children had *masoto*." (Marlene S., 36 years, 7 years of school. Husband, 42 years, 7 years of school, merchant. Polygynous household with two co-wives.)

Reference to *masoto* allowed her to bypass local norms, which foresee that 'special' foods would first be served to the husband to emphasize his superior position within the household, and it prioritized her child's needs over her co-wives'.

But reference to *masoto* also strengthened a wife's bargaining power vis-à-vis her husband. The moral dimension of *masoto* has situated men's behaviour in a public discourse about faithfulness influenced by religious movements and HIV prevention. Although criticism of extramarital sexual relationships had become legitimate women usually lacked the power to negotiate faithfulness in an everyday context. But referring to *masoto* increased women's bargaining power towards the husband enough to indirectly express their critique. Concerns became legitimate and socially backed up so that she could count upon the support of her affines; dealing with *masoto* was in the elders and African practitioners' hands, which led to greater pressure on the man.

Anna, 25 years old with a formal education of 7 years, claimed a cause of *masoto malo* shortly before she married. She suspected that her fiancé, already the father of her first child, was going out with another woman. Although she had indicated that she did not believe in magic, never consulted a traditional healer and always went to the clinic if her child fell sick, she reported a case of *masoto*:

“Yes, I believe in *masoto*, and it happened to me with my first child. I was not married to the husband yet, we were just going out like that. I didn’t know that my boyfriend had another girlfriend until the baby started having this diarrhoea.... I was afraid that my boyfriend was not going to marry me. So I decided to go to a herbalist [after going to the clinic] ... and waited for the boyfriend to give the medicine to the child. And he gave the child just once and the child was ok.” (Anna, 25 years old, 7 years of school, 3 children, married).

The cure for *masoto malo* required usually that the parent accused of infidelity administer the medicine to the child. This formal act of healing was at the same time, an informal appeal to the man’s commitment and his confession of unfaithfulness: *masoto* was a way to confront her fiancé with the suspicion of infidelity. He needed to admit his relationship with another woman to her and his parents, because *masoto* is a serious condition and he would not want to risk his child’s health. Anna assumed that his parents, who have already paid for the ‘damage’ (first child while unmarried), would pressurize him now to end his new relationship, while at the same time she feared that her father would punish her if the marriage arrangements broke down and he would have to give back the bride price.

Figure 4. Typology of treatment-seeking

Type	Pragmatic	Manipulative	Strategic
Use of formal health sector	+	-	+
Use of ,African’ medicine	+	+	+
Responsive to symptoms	+	-	+
Relevance of perceived cause for treatment seeking	low	high	low
Maternal agency	high	low	high
Main perceived causes at onset of illness	Natural' illnesses, unknown origin	African' illnesses (pollution, sorcery, witchcraft)	African' illnesses (pollution, sorcery, witchcraft)
Illness concept allows mothers to pursue other aims through an increase of bargaining power	No	Yes	Yes

Explaining the role of local illness concepts

If a child suffered from diarrhoea mothers didn't necessarily reflect on its causes from the beginning. Treatment seeking was often pragmatic combining biomedical and indigenous medicine. Yet there were exceptions. Deprived women with restricted agency could expect increased social and material support when their child suffered from an illness that was linked to a social disruption, such as the breaking of a taboo, or the use of harmful magic. These illness concepts provide powerless women with enough bargaining power to manipulate their social environment, spreading responsibilities. Whether lack of knowledge or social exclusion motivates the attribution of an 'African' illness to a child's condition may both lead to the same result: women prioritize these concepts, and they allow a certain control and manipulation of the social network. In the presence of magic the mother will not be blamed, but uncontrollable external forces are considered responsible (see also Mabilia 2000). This allows the sharing of responsibility within the household and to some extent facilitates the mobilization of resources, as more persons are involved. In these cases mothers are least responsive to their children's symptoms (Table 3).

This ability to manipulate the social context can also be strategically used to pursue personal aims explicitly, shown by the women who did put forward a cause of *masoto* to increase the commitment of their men without delegating the responsibility for their children to someone else.

The strategic element is most expressed in cases of '*masoto*' and harmful magic, where a person could be directly made responsible for wrong behaviour. Referring to *masoto* strongly increased women's bargaining power vis-à-vis her husband, supported by the legitimacy provided through a discourse of HIV prevention that condemned infidelity, too.

While the expectations vis-à-vis relatives are linked to particular illnesses, the perceived validity of a causal explanation and associated prescriptions need to be anchored in a discourse or worldview. Hence, the popularity of *masoto* has to be seen also in the context of endemic undernutrition and concerns about multiple sexual relationships in view of the HIV/AIDS epidemic: the moral concerns with the regulation of sexual relations in view of the HIV/AIDS epidemic contributes to their popularity additionally, as in the case of *masoto*, or for adults *kahungo* as an explanation for AIDS (Gausset, 2001) (Figure 1).

In sum the empirical data presented in the previous sections suggests that some generalizations can be made for 'African' illness concepts depending on the causal category: 1) accidental contact with 'harmful magic', 2) social transgressions, or 3) malevolent sorcery or witchcraft. 'Accidental magic' is usually suspected if a child cannot be successfully treated

by the health sector and if no one suspects a malevolent action from another person or a spirit. It then facilitates collective action within the family due to already existing customary rules how to deal with this particular case. This is similar to cases of undirected magic in adults that are related to incurable diseases. Treatment seeking in these cases is usually pragmatic.

In contrast social transgressions or malevolent sorcery and witchcraft open a field for social manipulation and strategic action. Recalling 'traditional' illness concepts is therefore not a contingent pattern of tradition: A mother knows that automatically a larger set of actors will become involved, not only the husband, but as well others (usually elders), depending on the long established rules that relate to the healing procedure for a particular 'African' illness. No such rules that organize collective action exist for 'natural' diseases. A mother will know that referring to a particular 'African' illness will generate actions taken in a coordinated and structured way, spreading the responsibility while at the same time leaving her in control, or, as economists would say, increasing her bargaining power at relatively low cost. This is most expressed in the case of *masoto* where it becomes possible to put the blame on the husband, strengthening a mother's bargaining power from an otherwise subordinate position, allowing her to claim commitment of the father in a situation where women are carrying the majority of responsibility for child care and health.

Conclusions

We distinguished three types of treatment seeking in this study, which were associated with the use of particular illness concepts: pragmatic, manipulative or strategic. Pragmatic treatment seeking will combine treatments based on their perceived efficacy irrespective of a perceived cause. This is basically the same if an illness concept was strategically referred to: treatment seeking was nonetheless pragmatic. We found only manipulative action to be harmful for children, which occurred when maternal agency was strongly restricted and she exclusively focused on raising commitment from her relatives while not responding to the child's symptoms. Shame and social exclusion related to poverty were the main reasons keeping mothers from taking their children to the rural health centres. Instead, mothers referred to social causes of illness rooted in indigenous medicine, which were legitimated paradoxically by a local discourse about HIV/AIDS, gender and rural development thus enabling mothers to become active and mobilize commitment and resources. In some cases also wealthy women made strategic use of local concepts of illness to pursue their own aims, while still complying with treatment recommendations of the clinic.

The advantages local illness concepts offer to mothers should be acknowledged, as well as the underlying causes, such as poverty related stigma and gender based discrimination.



G.N., herbalist in Mbeza

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Article 5 Culture, changing livelihoods, and HIV/AIDS discourse: Reframing the institutionalization of fish-for-sex exchange in the Zambian Kafue Flats

**Culture, changing livelihoods, and HIV/AIDS discourse:
Reframing the institutionalisation of fish-for-sex exchange in the Zambian
Kafue Flats**

Sonja Merten¹ and Tobias Haller²

¹ Institute of Social and Preventive Medicine, University of Basel, Switzerland

² Department of Social Anthropology, University of Zurich, Switzerland

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Abstract

Discussions about the cultural dimensions of the spread of HIV/AIDS in Africa persist. Drawing on data on fish-for-sex deals between local Ila or Tonga women and immigrant fishermen in the Zambian Kafue Flats, we argue against the notion that traditional institutions governing extra-marital sexual relationships are responsible for the spread of HIV/AIDS. We argue that fish-for-sex exchanges are based not on tradition, but on the economic opportunities provided by the fish trade in conditions of poverty and changing livelihoods. Stigmatisation of women involved in fish-for-sex deals is, however, on the increase, since they are accused of spreading the disease in their community. Women's inability to follow the sexual prescriptions conveyed by HIV prevention programmes produces shame and moral distress, associated with the fear of social exclusion. In this situation, *lubambo*, a former customary regulation of extramarital sexual relations among the Ila, may provide women with legitimacy for sexual transactions. Additionally, customary marriage arrangements institutionally secure their access to fish.

Keywords: HIV/AIDS, transactional sex, fisheries, Zambia, customary sexual relations

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Introduction

Fishing communities have only recently been recognised as being at high risk of HIV infection, due to the mobility of fishermen and fish traders, the need for and availability of cash, and the congregation of numerous people at fishing harbours and other trading places (Kissling et al. 2005, Seeley and Allison 2005). In the Kafue Flats of Zambia, small-scale commercial fishing has gained importance due to economic and livelihood changes (Haller and Merten 2006). Commercial fishing is dominated by migratory and highly mobile fishermen. Seasonal fishing camps provide new markets and opportunities, attracting also men and women from the local Ila/Balundwe and Tonga agro-pastoralist communities. In part, the fish trade takes place as informally institutionalised sexual transactions between women from agro-pastoralist groups and immigrant fishermen. Although the role of poverty in transactional sex has long been acknowledged (Schoepf 1992), the emphasis on a cultural dimension as responsible for the high prevalence of sexually transmitted infections in the region persists (Allen 2006, Malungo 2001). Practices such as widow inheritance, compensatory adultery, and arranged extra-marital relationships for women (*lubambo*) have been documented in the area in the past (Smith and Dale [1920] 1968). Local health and development professionals regard such 'traditions' as being responsible for the frequency of sexual transactions and for much of the spread of HIV.

The aim of this paper is to examine the role of traditional practices in the informal institutionalisation of fish-for-sex deals in the Zambian Kafue Flats, and to consider whether and how these interact with public health messages related to HIV and AIDS. It is hypothesized that customary institutions governing extra-marital sexual relations (*lubambo*) are not the cultural basis of widespread fish-for-sex deals, but have re-emerged in a transformed way in response to livelihood changes and specific economic opportunities. In the context of plural norms, reference to formerly legitimate customary regulations may serve to protect women involved in fish-for-sex deals to some degree from social exclusion and reduce their personal distress. Additionally, such regulations institutionally secure female traders' access to fish.

We argue against a cultural interpretation as the primary reason for women's involvement in transactional sex, as it conceals ongoing impoverishment in the area and the lack of economic alternatives. It also neglects men's role in the fish-for-sex trade, thus sustaining gender inequality.

Ideology and the institutionalisation of fish-for-sex deals

To investigate how trading interactions between individuals are structured and institutionalised in a wider macro- and microeconomic context, we draw on the theory of New Institutionalism in economic anthropology (Ensminger 1992, Ensminger and Knight 1997). This approach incorporates a socio-economic and political framework and the analysis of ideology to investigate informally institutionalised sexual transactions. Ensminger argues that a change in regulations depends on the bargaining power of the actors, as influenced by external factors. Drawing on her arguments, we investigate who can set up rules, or informal institutions, for fish-for-sex exchange, and how these rules influence risk-taking with respect to HIV and AIDS. This includes the development of informal regulations for current fish-for-sex deals, and the transformation of *lubambo*, which previously regulated extra-marital relationships involving payments.

Knight and Ensminger (1998) do not try to explain social change purely in terms of economics. They include ideology, or worldview, in their framework, and point to its strategic use in particular situations. However, they do not discuss how ideology is historically produced and linked to power, or how it influences individual identity, subjectivity and practices. To investigate the significance of a particular ideology in setting up norms and moral values, and to discuss how individuals position themselves vis-à-vis normative moral values and truth messages related to sexual behaviour, which might contradict actions taken pragmatically, we draw on scholarship informed by Foucauldian theory (Petersen and Bunton 1997, Obrist 2004). Foucault (1986) has analysed how power in modern society interacts with individuals and manifests itself in everyday practices and self-regulation. In his later writings (Foucault 1986: 36-45), he distinguished between authoritative power and power embodied in everyday practices, guided by moral codes, whereby individuals constitute themselves in different ways as moral subjects.

Foucault highlighted the role of biomedicine as central to this constituting process. Medical experts distinguish between normal and pathological physical states, and increasingly expanded their expertise to cover social and psychological behaviour. They

identify health risks and provide behavioural guidelines for their avoidance, producing moral authority. Health promotion messages are usually in line with national policies and programmes, as experts do not operate independently of health policies. Behaviour-oriented prevention in particular relies on strong moral codes as it depends on the internalisation of key health messages by individuals. It is based on the readiness of individuals to accept the salience of scientific expertise and on confidence that reducing risk is beneficial. Beyond having a positive impact on health, adherence to ideologically strongly underpinned practices is associated with respectability, while failure to comply with public health messages may evoke stigma (Petersen and Bunton 1997, Obrist 2004).

In many sub-Saharan African countries the health sector is historically closely linked to Christian missions (Vaughan 1991). Health promotion programs, which are informed by ideas of modernity and development, are thus at the same time expected to conform to Christian morality. But as in the case of HIV prevention through the use of condoms, moral goals can be conflicting, leading to contradicting health promotion messages and curbing their effectiveness (Pfeiffer 2004).

The relative absence of reliable medical care in the colonial and post-colonial era also makes uncritical internalisation of key health messages unlikely (Vaughan 1991, see also Lock and Kaufert 1998), and alternative explanations may instead inform perceived causes, for example HIV and AIDS (Liddell et al. 2005, Gausset 2001). Given these conditions, it has been questioned whether biomedicine has actually become authoritative for everyday practices in Africa (Vaughan 1991). Following up this hypothesis in post-colonial Tanzania, a study on cleanliness and hygiene concluded that key health messages presented in post-colonial health education programmes had been internalised irrespective of individual adherence to key health messages (Obrist 2004). Individuals positioned themselves vis-à-vis a health and development discourse as moral subjects reflecting on their practices related to hygiene. However, as essential premises for putting public health programmes into practice were lacking, individuals were unable to meet expectations and took pragmatic action. Simultaneously, their inability to comply with health education messages engendered a feeling of shame if they were forced to admit their failure to meet expectations.

Taking up Obrist's argument, we hypothesize that female fish traders have internalised key messages of the HIV/AIDS discourse about risk behaviour as moral norms. However, economic constraints and a lack of alternative income-generating

opportunities promote sexual transactions despite the risk of HIV infection and moral sanctions. Institutions such as *lubambo*, the formalised extra-marital relationship, enable women to legitimise such sexual transactions in order to maintain respectability.

Research setting and methods

The data presented in this paper was obtained between 2002 and 2005, in Chiefdom Nalubamba (Mbeza), one of the six Ila chiefdoms in the Kafue Flats of Zambia, located approximately 200 km southwest of the capital Lusaka. Mbeza covers about 1,500 km² on the south bank of the Kafue River and numbers approximately 27,000 inhabitants, mainly Ila and Plateau Tonga agro-pastoralists who live in scattered hamlets in the woodlands bordering the floodplain. During the dry season, the floodplain is used as a grazing area for cattle. Several fishing villages and seasonal camps of migratory fishermen are also located in the floodplain, along the river and lagoons.

The agro-pastoralists' social organisation is based on a bilateral kinship structure, whereby married women move to their husband's location (virilocality), although there are exceptions. Hitherto, a bride-price of 4 to 8 cattle is expected from the husband, which is distributed between the wife's relatives and herself (usually 1 animal per entitled person). Approximately 25% of the agro-pastoralists' households are polygynous, comprising mainly wealthier families. In all types of households the average educational level of women is relatively high with 6.9 years, and 7.1 years for men (data from adults aged 20 years and above in 374 households).

The fieldwork, conducted over two six-month periods, included participant observation in an Ila settlement in the woodlands and in fishing villages aimed at gaining an insight into local livelihoods, power structures and politics. Six focus group interviews were conducted on the subject of fishing activities and related problems. Another six focus group interviews were carried out on the topic of HIV/AIDS. In addition, semi-structured interviews on fishing, trade, and related problems were conducted with 84 fishermen in two fishing camps. Fifty-seven fish traders (26 female, 31 male) were interviewed using a similar interview guideline. Sixteen fishermen and 26 female traders were asked about fish-for-sex deals by local fieldworkers, who, to ensure confidentiality, came from a different area. In addition, seven local female fish traders from the woodlands, who were willing to reveal their fish-for-sex activities, were interviewed in depth. Four women were living in the neighbourhood of the compound where we stayed during the fieldwork, so we were able to follow their activities and stay in continuous contact with them over the three years. We limit the focus of this

paper to fish-for-sex activities, in which women from the permanent local Ila/Balundwe and Plateau Tonga settlements were involved.

Results

The economic crisis, livelihood change, and substituting strategies

New Institutionalism (Ensminger 1992) allows us to link macro-economic and local changes to social norms and institutions. Changes such as these were crucial to the development of informal fisheries and trading structures in the Kafue Flats. Since the 1970s, when copper prices declined, the Zambian economy has come under increasing pressure. Many employees and workers in industrialised areas have lost their jobs in the formal sector. Small-scale farmers have also been affected. After 1964, the post-independence Zambian government subsidised agricultural production and prices for maize meal. When the state stopped buying maize at a fixed price in the early 1990s and withdrew other agricultural subsidies, maize production decreased (Mickels Kokwe 1998). Women, reliant on maize as a cash crop, were among those most affected. The economic crisis of the 1980s and 1990s was accompanied by a deterioration in veterinary disease control and added to livestock loss among the formerly wealthy agro-pastoralists in the Kafue Flats (Fielder 1973, Nambota 1994).

Meanwhile, demand for fish increased in the growing urban centres. The relative price of fish compared to other agricultural commodities rose disproportionately (twice as much as maize), fuelling a rush into an expanding fishing sector (Haller and Merten 2006).

The women of the Kafue Flats' agro-pastoralist groups used to fish in the tributaries near the permanent settlements for subsistence or local sale. When fish prices escalated, commercial fishing took over and began to jeopardize women's traditional but informal access to the tributaries. Women continued trading fish, but increasingly went to the large fishing camps on the river and the lagoons to buy fish from commercial fishermen, or to exchange sex for fish. Trade with the migratory fishermen was facilitated by a long history of interaction with the most important groups. This was particularly true of the Lozi fishermen: The Lozi used to raid the area for cattle and slaves, and later on bartered fish in exchange for milk with the agro-pastoralists. They came to be regarded as "cousins" of the Ila, facilitating the establishment of trading and marriage relationships. Most fishermen spoke the local language.



Traders at fish market, Chunga lagoon, 2004

Fish-for-sex exchange and the absence of alternatives

As we are trying to feed our families, we are involved in fish trading. So we go to the fishing camps and there we are sometimes involved in sexual activities. When we are involved in sexual activities we can get AIDS and then eventually we die. (Community health worker, focus group interview, Mbeza, 2004)

It was often said that local women ‘go to the flats with nothing and return with a lot of fish.’ Sexual transactions between local women and commercial fishermen in the floodplain were regarded as a necessity to meet livelihood needs, despite the threat of HIV infection. Fish-for-sex deals could be requested by a fisherman (the transaction is then called *miyambilo*) or based on mutual consent, but the women’s motivation was always economic. In fish-for-sex deals, material gains were the main motivation for the relationship, consistent with definitions of transactional sex (Caldwell et al. 1994, Arnfred 2004, Luke and Kurz 2002, Mzinga 2004).

For local female fish traders from the woodlands villages in the Kafue Flats, fish-for-sex exchanges were not necessarily the only option to generate income, but by far the most lucrative. Women turned to fish-for-sex exchanges when the opportunities were best. The following two examples highlight the opportunities such deals may have for female traders.

In the first example, an elderly widow from a woodlands village describes how she became involved with a fisherman. She was planning to barter maize flour for fish in a fishing camp in order to resell the dried fish in her village. Her family had a cattle camp near the fishing area and good relations with some of the fishermen, providing her with

an entry point to the fishing camp and allowing her to stay there to process the fish. During her stay, she was approached by a fisherman:

So when I reached there, I was advised by a certain man: 'If you want to buy more fish, if you want to get more fish, it's better to find a man who catches fish for you, and that man will be able to give you more fish. And with the money you have, it is better for you to keep it, you don't show it to him.' After that, I also agreed, and I found a man (this same man), who was willing to help me. He gave me a lot of fish, and when I came back here I managed to get three 90-kilogramme bags of maize. (Female fish trader in Mbeza, aged 55, 2004)

Using such a strategy, she gained 270 kg of maize at once, enough for more than six months of home consumption.

Another widow from a woodlands village, in her forties, had a relationship with a fisherman at the river, whom she visited about once every two months. She obtained fish for free as long as she stayed in his house, and was able to sell the fish he caught. During the rainy season between December and February, when the fisheries were officially closed and fishing was prohibited, women involved in petty trading were least likely to be caught by fisheries officers, and so were able to generate an income during the 'hungry months' before the maize harvest. The widow indicated that particularly at this time of year, women from town, but also from the woodland villages, were involved in sexual transactions (some were married and had to support families):

There are now [in December 2002, when fishing was prohibited] about 300 men still there [in the fishing camp]. Women from town also visit the camp. They brew beer and exchange it for fish, fresh fish and then they dry it. ...There are women who have boyfriends there so that they can get the fish. I saw about five women from Mbeza who I know are married. ... I came to the fishing camp to see if the fish was ready. I stayed for a day ... then I came back to Mbeza where I got a lift in the car of A [to Lusaka to sell the fish]. ...I am not going to give any money to the boyfriend [in the fishing camp]. Actually it was an agreement. I stay with the boyfriend and get [all] the fish. (Female fish trader in Mbeza, aged 42, 2002)

Like the first woman, this widow was able to make large profits on her own behalf from a single trip to town, gaining up to US\$ 100. This represents a little less than a nurses' monthly salary and exceeds profits from other income-generating activities.

Bargaining power structures interaction: who can set the rule?

Fish-for-sex deals were not always based on mutual consent. As long as there were few female traders, men competed with gifts to find a 'wife' for their household. In this situation, women had considerable bargaining power to define the nature of the relationship, but power relationships changed as more female traders arrived. Particularly when fish were scarce and competition between traders substantial,

fishermen's bargaining power with female traders increased, allowing them not only to define the rules of the transactions, but also to reduce their commitment to the female traders. The common request 'no deal, no fish' forced many women into sexual activities they did not want. Female traders either had to agree to fish-for-sex deals, or they had to wait, sometimes for days, to purchase fish. In addition, women became increasingly vulnerable to fraud: some female traders tried to book fish by paying in advance, but never received their merchandise.

Female traders made decisions under ambiguous conditions. They were well aware of their particular opportunities to increase profits in situations of scarcity, which contributed to the attractiveness of fish-for-sex exchanges. Yet women only got involved in sexual transactions without resentment if they could control the nature of the relationship and maintain their respectability. Women indicated their preference for a steady relationship, a "marriage" although without a bride price, if they were to be involved with a fisherman, and expected commitment from the man. Such arrangements also decreased the likelihood that a fisherman would deal with other women as well, which represented a major concern for female traders.

The [intruding] female traders disturb our marriages. ... And this can bring poverty to the camps, because the fish that [other traders] are given can reduce our income. The female traders are given free fish, despite the fact that we, the married women, own the nets. (Female trader from Likenga fishing camp, 2004)

Non-formalised marriages or relationships, which were sometimes called *lubambo* (formerly institutionalised extra-marital arrangements), provide the women with an institutional framework for fish-for-sex transactions, which is different from prostitution. This provides a basis for reducing transaction costs for the women engaged: time saving access to the catches of the fisherman, and a safe location to stay and process the fish, thus clearly better opportunities than other traders had. On the basis of such 'marriages' and the related transactional obligations, which economically set the framework for the material transfers, women claim parts of the catches as theirs. Such a strategy also provides an ideological basis for trying to prevent the 'husband' dealing with other female fish traders.

Regaining legitimacy through former institutions

The economic considerations of sexual transactions are accompanied by moral reflections and the weighing of health risks. In this second part of the paper, we focus on how female traders and fishermen, position themselves vis-à-vis prevailing norms as

moral selves in the context of HIV/AIDS discourse, and how they perceive their risk of becoming infected.

Sexual networking and transactional sex have shifted to the centre of discussions about the spread of HIV infection in Africa (Caldwell et al. 1994, Alary and Lowndes 2004). The focus of the public health discourse on urban female sex workers as a major source of infection has influenced local perceptions of HIV and AIDS (Gausset 2001). In the permanent villages of the Kafue Flats, this has increased pressure on female fish traders, who have become associated with 'prostitution' because they are suspected of fish-for-sex deals.

None of the women we interviewed referred to their activities as prostitution, but spoke instead of traditional or temporary marriage. The two widows we cited above referred to the customary institution of *lubambo*, which had formerly regulated extra-marital relationships of Ila women, and lent not only formalisation but legitimacy to the arrangement. *Lubambo* as a transformed institution offered women involved in transactional sex a framework in which, based on mutual consent, the material transaction was legitimised and regulated.

The reference to institutions like *lubambo* took place in spite of criticism expressed through the health and development discourse and Christian ideology (the latter being indirectly linked to ideas of development by defining the replacement of heathen customs as progress). The critique of traditionalism was moderated by the lack of a single doctrine embraced by the various Christian denominations (Luig 1997: 269). An alternative emerging cultural heritage discourse, drawing on ideas of traditionalism, nationalism and ethnicity, was promoted by political groups (Merten and Haller 2005). Within this context, traditional institutions such as *lubambo* were viable.

The transformation of lubambo

Social institutions are not inalterable cultural facts, but transform according to the context and changing power relations (Ensminger and Knight 1997). The institution of *lubambo* has undergone fundamental change in response to external influences. The changing meaning of *lubambo* over the past century mirrors the ongoing process of social and economic transformation, and changing gender relations. These are important to understand the current connotation of the term, oscillating as it does between 'marriage' and 'prostitution'.

According to Edwin Smith, a missionary, and Andrew Dale, the first administrator of the British South African Company in the district, who arrived among the Ila in 1902, it

was possible for a married woman to have an official lover (*mambakwe*), who was presented to the whole community in a ceremony. *Lubambo*, as the arrangement was called, not only legitimised and institutionalised extra-marital sexual relations, but also involved a formalised transaction of gifts, implying a commitment to maintaining the relationship. These gifts were part of a social security network. Until today, a *mambakwe* can supply a woman with commodities her husband cannot provide in times of scarcity (Merten and Haller 2005). Smith and Dale (1968 [1920]) described *lubambo* as follows:

[*Lubambo*] is a recognized institution ... It differs from an ordinary system of paramours, in that there is a public ceremony, so that everybody knows of it, even the woman's husband. He cannot throw stones at his wife because he does the same. Husbands naturally exhibit great complacency in regard to this custom. To their minds it is the best policy, for they benefit by it. (Smith and Dale 1968 [1920], volume 1: 66-67)

Brelsford, a colonial administrator during the 1930s, considered *lubambo* to be a source of income for the husband, who offered his wife to another man.

The word [*lubambo*] itself means literally 'an arranged thing', ... the arrangement of the relationship lies between the lover and the husband of the woman, and it is not *lubambo* until husband and lover have met and discussed the affair. ... After the first gift of a head of cattle, the husband may desire more, and he still may not be satisfied if he considers that his wife is making more visits to the lover than is proportionate to the payment.' (Brelsford, undated, Namwala District Notebooks)

Brelsford interpreted the exchange of gifts not as formalising an arrangement like Smith and Dale did, but as payment. This may in part mirror the effect on social relations of monetisation and integration into a market economy during the early colonial years.

During this period, the authority of the elders evidently began to be challenged by the younger generation due to their increasing economic autonomy. Marriage had hitherto figured as the cornerstone of local social organisation, as the elders controlled the cattle needed for bride price payments (Ensminger 1992). In this context, 'female promiscuity', implying a lack of control over marriage arrangements by elders, was observed with some concern: it was considered indicative of social instability and feared by local and colonial rulers alike as detrimental to local power structures and political stability (Chanock 1998 [1985]: 149; 159, see also Vaughan 1991: 130-139). This is illustrated by a comment from Chittenden, who was the colonial administrator in the 1950s. He lamented women's growing economic strength, which he perceived to be the consequence of modified 'traditional prostitution':

The advent of the plough, which started to become fairly common in the late twenties and early thirties, started an agricultural revolution that was not without its impact socially on the tribe. It was recorded in the middle thirties in an annual report that the change to the plough had become so common that the women, on whom previously the main work of tilling fell, had now on account of the plough, so much leisure that they were able not only, as was traditional, to prostitute themselves on their husbands' behalf but now on their own behalves as well, and that they were now even becoming property owners.' (Chittenden, April 1958, Namwala District Notebooks).

However, what Chittenden observed was actually the simultaneous occurrence of female economic autonomy and impoverishment, which he failed to differentiate. Women's loss of control over agricultural production was the more likely cause of the sexual transactions observed: The emerging maize market and the advent of the plough motivated men to take over maize production and claim ownership of their wives' fields. This was possible in part due to the virilocal sedentary pattern, which strengthened men's position with regard to land ownership. The economic status of women was also said to be deteriorating during the colonial era in other parts of Africa (Allman 2001). The number of impoverished unmarried women increased along with the emerging urban and industrial centres, labour migration and resettlements. Such a development could also explain the increase in sexual transactions observed in the Kafue Flats.

On the other hand, changes in the legal system during colonial times had increased women's bargaining power with respect to property ownership and compensation payments. In the later colonial period, Cutshall (1980), a social anthropologist, reported that women frequently figured as successful plaintiffs on their own behalf in cases regarding property ownership.

Female fish traders, stigma and shame

Historical notes from early colonial times suggest that female sexuality was by no means 'permissive' in traditional society, even if lubambo enabled women to some extent to engage in desired extra-marital relationships. But a woman could never do as she wished without the consent of her husband. Only within these boundaries, were female extra-marital relationships, involving gifts and payments, socially sanctioned and morally legitimate.

Lubambo in its early sense was arranged and formalised, and not promiscuous. Sex-work, in contrast, is a phenomenon closely linked to labour migration, urbanisation, and impoverishment, and is strongly stigmatised. Sexual transactions such as fish-for-sex

deals may today fluctuate between these two extremes. When women talk of lubambo in the context of fish-for-sex exchange, this does not involve an arrangement between a husband and a mambakwe. It merely implies that the sexual transaction appears to be within the bounds of a legitimate relationship. However, it depended on the context whether the concept of lubambo reduced women's stigmatisation. Women carefully avoid admitting involvement in fish-for-sex exchange, or in a lubambo arrangement, in front of a health professional, or a church member, for example who might consider her a prostitute and associate customary marriage regulations with primitiveness.

In the context of HIV and AIDS, women's sexual behaviour has remained the central concern (Lugalla et al. 2004). In the Kafue Flats, female traders are popularly represented as the source of HIV infection. Women described sexual transactions as illicit if they could not assign their relationships legitimacy. Particularly in a context informed by ideas of modernity and Christianity, personal distress can be considerable. A female fish trader from the woodlands, divorced for over 10 years ago and a member of the Seventh Day Adventists Church, spoke of the social stigma and shame that derived from fish trading:

The reason why I stopped going there [to the fishing camp] was because people they created a lot of stories about me. ... They were saying that I have a man. So when it came to my mind, it pained me a lot. So that's why I stopped. (Female fish trader living in Mbeza. 2004. She temporarily stopped trading fish, but resumed her business later on.)

In contrast, women who identified with a 'traditional' lifestyle, which was indirectly legitimised by the cultural heritage discourse of local leaders, made strategic use of the customary concepts of lubambo to legitimize sexual transactions towards themselves and the community. Particularly problematic with respect to HIV, however was the tendency to reject condom use in steadier partnerships, relying on a mutual promise of faithfulness of partners (see also Mahraj and Cleland 2005).

Men and fish-for-sex deals: Ineffective HIV/AIDS prevention?

Criticism of male involvement in sexual transactions was uncommon and usually linked to the risk of an HIV infection, and not to immoral behaviour. Never would a man face stigmatisation because of a sexual relationship with a female trader, even if in the local socio-political environment, male involvement in sexual transactions is not uncontested. In the Kafue Flats fishing camps, some established commercial fishermen are strongly critical of fish-for-sex deals.

While economic interests and livelihood needs, in view of the given opportunities, outweighed the risk of contracting HIV for women, men had no need to take such risks. Their non-compliance with HIV prevention messages was seen as an example of recklessness:

The fishermen know that there is HIV/AIDS, and what they do is [the following:] because most of the traders who come to the fishing camps look healthy, so they cannot know that they have that disease, that's why they engage themselves in sexual activities with them. It is after they have done their act, when they are sick, that they realise, that person whom I did the act is sick. (Commercial fisherman in Likenga fishing camp, 2004)

It has to be borne in mind that opportunities to invest the available cash are limited, particularly for young and inexperienced fishermen and workers. Their ability to spend money on alcohol and women is a way to position themselves socially in accordance with their earnings and to gain reputation (which is less relevant for well-established commercial fishermen).

The visibility of people living with AIDS has been related to risk perception in the relevant literature (Bowser 2002). This may partly explain why risk perception was low in the fishing camps with their highly mobile population, where sick people are the exception as they often return to their home villages. Also, the fishermen's high-risk profession may make other dangers seem more immediate than HIV infection (Kissling et al. 2005).

But structural constraints also have to be considered. The nearest clinic, where treatment of sexually transmitted infections, counselling on HIV and free condom supply were available, was over 20 km away. Condoms were rarely available in the camps at the time of the study, even though demand existed, and protection was therefore ineffective. Uncertainties like these spurred demand for alternative means of protection and nurtured supernatural explanations for the acquisition of the disease (cf. Gausset 2001).

Nonetheless, the fishermen's risk perception was also informed by public health messages: female traders from rural areas were considered less likely to be infected with HIV compared with women from urban centres. Engaging in an institutionalised marriage or lubambo arrangement, and the provision of large amounts of fish, were believed to increase the faithfulness of a female partner. Such attempts to prevent HIV/AIDS, which mainly consisted in the control of sexual partners, indicated that key HIV prevention messages and moral norms have been internalised by the fishermen, even if they clearly underestimate their risk of becoming infected.

Conclusions

In the above discussion of fish-for-sex deals in Kafue Flats, we have shown how in a Foucauldian sense, the internalisation of competing norms can be understood as a basis for individual actions, which are however embedded in a living context and a framework of changing livelihoods. Ensminger (1992) adds much to our understanding of immediate aims and individual action in a specific context dependent on external variables, economic settings, and the bargaining power of actors.

Throughout this paper, we have presented evidence to counter the assumption that customary institutions regulating sexual transactions, such as *lubambo*, are primarily responsible for the occurrence of fish-for-sex deals. We have outlined the role of economic opportunities due to external changes in relative prices (greater increase for fish compared with other agricultural products), and of livelihood changes, which create a need for income-generating alternatives. We conclude that the general economic crisis and local livelihood changes were the primary reasons why women engaged in transactional sex, while the fishermen profited from women's economic dependency.

There is a generally high level of knowledge about HIV related risk and prevention among the Zambian population (Central Statistical Office 2003, Slonim-Nevo and Mukuka 2005), and the female traders were aware of the possibility of acquiring HIV through fish-for-sex deals. Nevertheless women faced problems in protecting themselves (see also Bond and Dover 1997). Behavioural HIV/AIDS prevention messages have been internalised and shaped local moral norms: faithfulness between partners was regarded as the 'right behaviour', illicit sex as dangerous. However, female fish traders often lacked the bargaining power to refuse a sexual relationship especially when competition between traders increased, either because of blackmail ('no deal, no fish'), or because they could not afford to turn down a very favourable offer from a fisherman. The expected profits due to the high relative price of fish, in view of livelihood needs, may outweigh the fear of infection or social stigma. In this context, female traders made reference to customary marriage arrangements, which represented an alternative moral code to the health and development discourse.

Arrangements with fishermen were often called 'marriage' within the fishing camps, and female traders pragmatically referred to *lubambo*, assigning a certain degree of legitimacy and safety to sexual transactions. Despite the radical transformation of the meaning of the term, *lubambo* has maintained the idea of legitimacy of sexual transactions in particular local settings, where traditional values were re-emerging as a

result of local political dynamics. Lubambo provided an institutionalised framework for sexual transactions which was different from prostitution, allowing women in a poor socio-economic setting to retain their self-esteem vis-à-vis the dominant health and development discourse by redefining transactional sex as a legitimate traditional practice. However, this was only feasible in a situation of plural norms. It pragmatically served to maintain female traders' respectability to some extent in a 'traditional' local setting, while they experienced more personal distress and stigmatisation in a more modern social context or as church members. The persistence of customary marriage arrangements also has an economic side: it institutionally provides a framework for material transactions, which secures a female trader's access to fish, thereby increasing her opportunities.

Fishermen were generally in the stronger position, socially as well as economically – they controlled the fish, which provided them with more bargaining power. This allowed them to play down their role in the transmission of HIV and define the rules for sexual transactions (see also Lugalla et al. 2004).

There are several implications for HIV prevention. First, it should be considered that criticism of customary 'temporal' marriages may disempower women who use transformed customary regulations strategically to insist on commitment from their 'husbands'. Second, it is crucial to concentrate preventive efforts on men, as they are in the economic position to control their relationships with female traders. Third, income-generating alternatives for women, although important, cannot be a substitute for the high profits from fish trading. Options for fishermen to invest their earnings instead of giving away the fish to female traders may be more likely to reduce fish-for-sex deals. Finally, although condom use has been shown to be a successful strategy in Zambia's urban areas, and among sex-workers elsewhere (Fylkesnes et al. 2001, Ghys et al. 2002, Alary et al. 1999), condoms were not available in the fishing camps, although some beneficial effect could probably be expected. Structural barriers in access to health care facilities for highly mobile populations and in remote areas should be considered. Public health key messages can only be turned into action if a basic infrastructure is provided (see also Obrist 2004).

One limitation of our study is the fact that we did not have any data on current infection rates. Neither could we quantify sexual transactions, or the different forms of relationships. However, these occurrences largely depend on a rapidly changing framework. The intention of this paper was rather to explore how economic and

livelihood change, changing social institutions, and different ideologies shape health-related action, a process which is not restricted to the Kafue Flats area. In this respect, qualitative information can add to the understanding of individual strategies, and contribute to better-focussed health interventions in similar settings.

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Part V Discussion and conclusion

DISCUSSION AND CONCLUSIONS

This thesis combines articles investigating a) factors associated with food insecurity and undernutrition in the Kafue Flats of Zambia, and b) local ways of dealing with these problems. The study aimed to contribute to a better understanding of local action, which is often contradictory to health and development messages conveyed by governmental and non-governmental actors. In its theoretical discussions it therefore lays particular attention on local institutions (norms, rules, regulations), the power-relations shaping these institutions, and the opportunities they offer for local men and women who try to meet everyday livelihood needs and to cope with food crises and related health problems.

Methodological issues

For this study a mixed-methods approach was chosen. Many mixed-methods studies in public health research combine qualitative and quantitative data, but collect only little ethnographic information. For the present thesis it seemed important to conduct long-term participant observation in a rural setting in order to gain insights in real-time negotiations of access to resources, capturing the local power-dynamics between and within households. The fact that participant observation took place repeatedly over several years allows situating decision-making processes in a particular context and place it in a longer-term framework. This enables to strengthen the internal validity of the analysis of the qualitative data collected through interviews, rapid assessment procedures such as pile sorting, and focus group discussions.

The collection of the qualitative data was nonetheless facing a variety of problems. Given the fact that food security issues are related to questions around land ownership and access rights, the issue was sensitive and for some time being in the area as a white person was not safe. Additionally, many places were difficult to reach, which posed a problem especially when people had to gather for a group discussion. This sometimes challenged a purposive selection of persons for focus group interviews. The fact that we were closely collaborating with local people as field assistants was beneficial in the sense that they knew the local social setting very well and managed also to establish contact with marginalized persons. But it also entailed the danger that their work for the research team increased the social distance towards the interviewees, and that their personal involvement was sometimes a reason not to trust the objectives of the study as ‘non-profit’. We had to realize that our acceptance in the field, particularly in such a conflictive environment, depended largely on the trustworthiness and the commitment of the local research team who repeatedly succeeded in re-establishing a notion of trust.

Due to the difficult logistics participation in a focus group interview could imply the loss of a full working day for the interviewees. We therefore decided to compensate the participants with food we offered during the meeting, and in some cases with money for transport (mainly for the meeting with traditional practitioners, who came from various villages).

Logistics also provided the largest difficulty to collect the quantitative data. If a person was absent or had to leave and data was incomplete, it was enormously time consuming to find this person at another time. But overall, we estimated that we missed only about 12% of all households.

A more practical problem were logistics. For the collection of the survey data we needed much more time than initially planned, partly also because the questionnaires were very comprehensive. As a consequence open questions that had to be answered in written form were answered rather briefly, and the statements were very short, so that it allowed only a content analysis. It was the same reason why we couldn't analyze some sub-questions collected with the survey instrument because we had too many missings, which were clustering in particular villages. Another, very practical obstacle was the fact that in the Ila-speaking communities there were several possibilities to use a particular name at one occasion, and another one at another occasion. Women who married were re-named by their husband (first names), and using their 'maiden' name was one way to express discontent with the current situation. Given the fact that also the dates of birth were often inaccurate, it was sometimes difficult to link the follow-up questionnaires even in presence of a person. Due to these problems the repeated measurements were partly incomplete (unbalanced data), which we needed to account for in the analysis (using multi-level analysis).

Another limitation of this study is the relatively few information collected systematically on social support networks. Only for the sub-study on health-seeking behavior in case of diarrhoea of children mothers were asked who supported them most during the illness, and on whom they relied usually. For the analysis of the anthropometric data we had however only collected information on decision-making within the household as regards resource allocation, about conflicts with regards to material resources between wives and household head, and about material contributions from persons outside the household. When the survey was started the food crisis had developed to the extent that people had already stopped sharing food: those households that were able to cook something did so as clandestine as possible, eating inside the house to avoid neighbors or relatives coming and asking for a share. The only sharing we could observe was that people tried to obtain part of the relief food from a family member (usually an elder person) obtained (Merten & Haller, 2009). Generally, social support

networks underwent continuous change and were strongly a function of the economic status of the household: the poorer, the more likely to be socially excluded (Paper 4): An association of the size of the social network of a person with poverty and poverty-related diseases in societies with such large vertical inequalities might as well express a reverse causality. Although poor people in Africa were included in the society with a special (and eventually transient) status (e.g. as 'slave', or dependant), as maintained by Illiffe (Illiffe, 1987), this has changed, and the poorest are increasingly facing social exclusion, although they are the ones most in need of support (Cliggett, 2006; Cliggett, Colson, Hay, Scudder, & Unruh, 2007).

As regards social relations a large body of literature dealt specifically with questions of cooperation in polygynous households and its alleged impact on childcare. In the Kafue Flats co-wives rarely cooperated more with each other than with close friends, sisters, other relatives, or neighbors, as regards child care: the social support networks didn't seem to differ much between polygynously married women and others (attributable to the importance of the matriline which strengthened the bond of a mother and her children with her own kinship). Only the distribution of the tasks in the household and the sharing of fieldwork considerably differed.

Ethical considerations

The fact that we stayed in the village during a food crisis evoked ethical questions around our presence, the extent we could assist some of the people, and about compensation of the interviewees. Regarding the latter we decided pragmatically to provide 1-2 kg of maize meal to a family when it became clear during an interview that a household was lacking food. In regular times and if a household was wealthy we did not compensate the interviewed persons in kind or with money, but in fact, most of the households that participated were given some food at one point or another. This did however not influence participation: persons refusing to participate did so out of political reasons, because they feared that we belonged to a group of white investors who would ultimately want to take their land. Although this rumor stopped very soon in the village where we lived, this was not the case in the distant villages, which were difficult to reach and which were actively involved in the land conflict.

In the households where the interviews took place we offered information as regards child nutrition and care, and if necessary assisted in transporting sick children or also adults to the clinic or hospital.

Discussion of results

The following section discusses the contribution of the previous chapters to the question how rural people in the Kafue Flats cope with food security and malnutrition. More specifically, the strategies local men and women use are discussed as they compare to health education messages and development paradigms and policies.

A livelihood perspective

Access to natural resources is central for rural livelihoods (FAO, 2002; Jayne, Yamano, Weber, Tschirley, Benfica, Chapoto et al., 2003; Maxwell & Wiebe, 1999) and thus a premise for food security and health. But property rights are often insecure: Women and men maneuver in a setting of plural norms and legislations, which often skews access to resources towards the powerful (Paper 1). For example in the case of land rights leasehold titles introduced by the statutory law were claimed by local political leaders to reassure their large shares of (formerly communal) land, while the claims of women and poor people continued to be dealt with by the local authorities. Although local authorities were also committed to their communities there were no formal ways to counter favoritism, and basically no one was taking over the role to second the interests of the powerless and poor.

The insecure property rights cause continuous negotiations and conflicts about questions of entitlements and access, especially since pressure on natural resources increases as a consequence of the deteriorating national economy, which has pushed out many people of the formal job market: After its promising take-off in the mid-1960s, one decade later Zambia's economy started a continuous economic decline initiated by collapsing copper prices on the global market. Although some economic indicators have stabilized since the millennium turn, the increasing droughts and rising food prices have continued to push large parts of the population in poverty. In view of a weak state people remained with local means of power to pursue their interests, such as building up social ties to important and wealthy people, and sometimes attempts to manipulate the reputation of a decision-maker by spreading rumors of foul play through magic. In the Kafue Flats, the violent conflict about plans for an irrigation project in a pasture area which is still managed as common property and where local access rights are rhetorically opposed to national poverty reduction strategies gives an account of the conflicts insecure property rights can evoke (Haller, 2007). Such conflicts played between political groups, between households, but maybe at least as important within families: gender relations appeared as deeply instable and insecure, and constant re-negotiations of degrees of

autonomy and control between husband and wife, among wives, and partly also between the generations, were the rule in many families.

One expression of a livelihoods-related gender conflict was the public concern of female fish traders' activities. Women became active in the very profitable fish trade in the rural area, and were sometimes getting involved in fish-for-sex exchange. This could take place in the context of a traditional (formerly polyandrous) marriage (lubambo, see Smith & Dale, 1968) or be pure blackmailing by fishermen who profited from the fact that a woman was 'stranded'. It was however the women who were however considered responsible for the spread of HIV/AIDS in the local communities. Attempts of local people to exclude women from fish-trade must be seen also in another context: male traders tried to secure their access to the fish, because when fish was scarce and prices highest, women had a clear advantage over them (paper 5).



Commercial fishermen, Chuunga lagoon, 2004

A gender perspective

While local power-relations define entitlements to natural resources such as land, water, or the fisheries, also intra-household resource allocation is determined by gender inequality (Tolhurst, Amekudzi, Nyonator, Squire, & Theobald, 2008). Men control most of the natural resources:

land, pasture, and partly the fisheries. Headmen or household heads have the powers to allocate usufruct rights to other men and to women. Although the statutory law foresees e.g. the inheritance of land by women, this is rarely practiced, also because the land rights are contradictorily regulated: while it is de jure possible to obtain a leasehold title for land, only powerful and wealthy persons have made use of this possibility. De facto land is still managed by the local authorities, which still assume that women obtain land through their husbands or fathers (Paper 1). Only in case of conflicts women's rights are discussed, and according to the local people women have in fact been given rights to land more often than some years back. Nonetheless it is as well a fact that female-headed households are not favored in the community: single women are seen as a threat as they are assumed to have sexual contacts also with married men 'to meet their needs' (material and sexual). In this role women serve as scapegoats for the spread of HIV/AIDS in the community (see also paper 5). This view mirrors the power male dominance could still employ, although also male sexual behavior is exposed to critique. On the other hand women are assumed to have equal sexual needs as men, which as a view appears systematically excluded in Western and Christian-based thinking, including some feminist perspectives. However there are other underlying conflicts associated with these 'single' women: they sometimes occupy important positions in local trade, and are thus seen by many men who occasionally involve in trading goods (fish, chicken, pigs, cattle, clothes) as fierce competitors (Paper 5).

Women's marital status is also an important area of research as regards child health. There is a large body of literature on nuptiality and its relationship with socioeconomic outcomes (for an overview see Bledsoe & Pison, 1994; Koktvedgaard_ Zeitzen, 2008) and for child nutrition and health. Of particular interest was the association of polygyny with child health, results were however inconsistent (Amankwaa, Eberstein, & Schmertmann, 2001; Brabin, 1984; Gibson & Mace, 2006; Gyimah, 2005; Madhavan, 2001; Strassmann, 1997; Ukwuani, Cornwell, & Suchindran, 2002). Madhavan in her comprehensive study on polygyny in Mali included measures on competition and cooperation between co-wives in her assessment of the role polygyny has for child survival. But her results remain difficult to generalize as they partly contradict her findings from the qualitative study, and differ between the two ethnoprofessional groups that were compared (Madhavan, 2001). In most of these studies less attention was paid to livelihood issues and questions of access to resources, which may however differ greatly between different types of households. Also little information is available on the level of support obtained by the husband.

Paper 2 and 3 investigate the link between livelihoods, social organization and type of marriage. We could show that extended pastoralist households, independent of the marriage structure, were more resilient during the food crises. Children living in these households showed greater height for age and were least likely to be undernourished. Children living in polygynous households, which were mainly found among the extended households, showed no significant difference from their peers. In contrast, children from nuclear households, which didn't own cattle, showed comparatively lower nutritional scores. The findings suggest that especially young nuclear families present a vulnerable group during food crises (paper 2). Looking at self-rated health of women and children, there was however a difference between polygynous and other households to the disadvantage of polygyny. This difference cannot be explained with any of the socioeconomic variables and may reflect suboptimal patterns of care and/or maternal distress (see also Al-Krenawi, Graham, & Izzeldin, 2001; Jankowiak, Sudakov, & Wilreker, 2005). We also found that women from polygynous households were less likely to consult with the formal health sector, and that they were more likely to call upon social illness causes which explicitly involved the responsibility of the husband to explain a deteriorating nutritional status of their children. We argue that this finding either reflects a problematic relationship within the household leading to the inability of a woman to access resources, to or greater distress of women in polygynous households in general. Other reasons may be maternal absences from the household (although this wasn't the case according to our data), or shame with having a sick child that was associated with improper childcare and may delay treatment seeking in a polygynous household where a visit to the clinic was difficult to hide from the co-wives (paper 3). Husbands in contrast were often only informed when the problem became more serious, also because women didn't want to be blamed for failure to look properly to the child.

If we look at the findings from the qualitative study, we found, as most other studies on the issue did, that women were generally split in seeing more problems in polygynous households as compared to others. However there was great insecurity of the way gender relations constitute themselves in general. Institutional change has provided women with more formal rights, and many development projects targeted exclusively women. Relationships between women and men were loaded with insecurity: many better-educated women decided not to get married at all, because they didn't want to work for their husbands, but for their own behalf. They experienced only little difference of their burden to care for their children, but much more autonomy how to do so. There were two alternatives to remaining alone that skilled women named: having a partnership model marriage with a husband (which, considering the

very separate spheres of women and men, was still exceptional), or marrying an already married man, where a woman could continue to pursue her own income generating activities (paper 3).

Issues about health seeking

In the sections above we have explored the influence of livelihood strategies and local, gendered, power relations on food security and perceived child health. We remain with the question what mothers do if their children fail to thrive. In order to investigate their patterns of health seeking we concentrated on a common symptom, which is often linked with wasting: diarrhoea episodes. As mentioned before, we found that women from polygynous households were less likely to consult with the formal health sector immediately. This was also the case for acute diarrhoea episodes of young children, which we investigated as a symptom frequently associated with a wasted child. The results showed that if repeated episodes of diarrhoea occur, or children didn't gain weight and failed to thrive, women sometimes referred to local illness concepts, although they were well informed about biomedical concepts of diarrhoea and malnutrition. We identified various reasons for making 'African' illnesses responsible: Having a wasted, weakly or sick child was shameful for a mother as it appeared that she was not able to care for her child. Mothers were usually left also with the primary material responsibility for a child. In this situation one explanation of diarrhoea was particularly common: *masoto*, the pollution of the breastmilk through adultery of a man or a woman or through a preterm pregnancy. It was a new development that men were considered responsible for *masoto*. Once the diagnosis was made, the consultation of a traditional practitioner was required, and men usually participated in the healing procedure. The pressure made by the man's kin and his involvement in the formalized healing allowed women obtaining more commitment from the husband's side than would have been possible for simple lack of food, and facilitated the mobilization of additional material resources for the child (paper 4). A diagnosis of *masoto* could as well serve as legitimacy towards co-wives why a child was privileged as regards intra-household resource allocation. Despite a 'traditional' illness diagnosis the vast majority of children with 'traditional' illnesses consulted with the formal health sector and followed their prescriptions.

Another motivation to seek care with the local herbalists and healers was their spatial closeness and also the lack of trust in the efficacy of the formal health sector. In the 1980s, Zambia had one of the highest densities of hospital beds on the continent (Hjortsberg & Seshamani 2002). Much has changed since, and women were well aware that the health sector was not able to include all undernourished children in a feeding program. In this situation

women turned pragmatically to ‘traditional’ illness concepts, which enabled them to mobilize social and material resources for their children, and which often contributed to a clarification of the parental responsibilities.

Institutional change in the Kafue Flats: from the past to the future

In the last section I would like to bring in an institutional perspective pointing at the importance – but also at the limitations – of investigating social norms and regulations that shape local people’s everyday actions in order to allow an outlook for change.

Access to resources and the strategies men and women applied to enforce this access was a central question of this study. I have argued that action often takes place in a context, where plural rules and norms exist, allowing for negotiation how rules are to be interpreted or changed. However winners are often those with greater power (Bastiaensen, 2005).

From a theoretical point of view (and where social scientists and economists usually agree), institutions (norms, rules, regulations) are thought to be replacing negotiations to facilitate everyday life because, as economists put it, transaction costs are reduced (Berger & Luckmann, 1966; Ostrom, 1990). If negotiations take place nonetheless actors will probably try to change institutions to their benefit. Unless the state protects the interests of the weaker, inequalities will increase in such a process. In the case of the Kafue Flats this became particularly evident for the fisheries, where local agro-pastoralists (usually the less affluent were fishing) were marginalized, and women’s techniques and places were taken over by men. Similar processes are happening as regards inheritance rules, however due to the fact that the state and other organizations were considerably more active women’s bargaining power has increased, and the ‘traditional’ authorities increasingly interpreted some of the locally relevant institutions to the favour of women. Every single loss or gain of access to resources makes its contribution to increasing or decreasing livelihood and food security, shaping individual agency, which in turn is necessary to negotiate somewhere else.

Legal pluralism is a reality in many local African contexts, and of course, more evidently, a plurality of value systems is ubiquitous (Arce & Long, 2000; Chanock, 1998; Ferguson, 1999; Meinzen-Dick & Pradhan, 2002). Building up alliances virtually with powerful representatives of a values system by rhetorical reference to a dominant discourse or narrative can increase the legitimacy of a set of rules or norms, as well as the bargaining power of an individual or group, and action would then be more likely initiated in the expected direction (Knight & Ensminger, 1998). Again, this process can be observed in various settings, be it referring to the spiritual world to claim ancestral natural resources (forests, land, water), or making reference to an HIV/AIDS discourse to enforce conjugal bonds.

Legal, or generally institutional pluralism is still less complex than negotiating every single step of the process, but involves already considerably higher efforts than when the institutional framework is more univocal. In turn, having a reliable institutional framework does by no means imply that this framework is based on equity: e.g. property rights and gender norms inherently define access and exclusion criteria based on patterns of domination, power and control. But the switching between different types of explanations, and the following of different sets of rules, bears a strategic component: a person will consciously or unconsciously choose the set of rules that is familiar, acceptable and legitimate, can be enforced, will be followed by the other side, and relates to an expected (not the best) outcome (Ostrom, 2005). It is easy to imagine that in a situation where uniform institutions are lacking – such as in the case of property rights, marriage rules, or gendered norms regulating childcare – these institutions are not of the same ‘value’ in every situation. In other words, because it is effective to politicize institutional frameworks in order to increase one’s bargaining power reference to underlying belief and regulatory systems should not be merely regarded as ideological or cultural, but also as strategic.

Apparently, the multiple, partly fragmented and incommensurable, partly merging, worldviews, are influenced by external and historical developments. Ferguson (2006) has emphasized the need to understand that modernization has initiated changes triggered through external forces, which could, however, not be maintained against the background of global economic inequality. People living in less developed areas have to adapt to the situation, making the most of the bits of modernity which are available together with the local resources and achievements of local culture. In order to understand local patterns of action – and locally maintained institutional frameworks – the broad outlines of these developments are important. We remain with the question how these processes interact with the medical systems that exist in an area. On the one hand there are direct impacts of poverty-related effects on health and treatment seeking. But on the other hand, the fact that people are living in an environment where several conceptualizations of the world may prove effective in different situations people are accustomed to act pragmatically, and to base their action upon everyday experiences and on following persons they trust rather than taking often virtual ‘knowledge’-based decisions with uncertain outcomes. I would also argue that morality, which is related to health and poverty issues, underlies a similar process, so that whether a certain action is perceived as shameful, or whether people experience discrimination, depends strongly on the context: also rural African societies are complex and of considerable heterogeneity. This is an

area, which has not yet been given much attention in research for example as regards barriers to treatment seeking, such as stigma and discrimination.

Factors determining food security during a crisis and treatment options for malnourished children

<i>The consequences of institutional change caused by economic crisis for the less powerful</i>	<i>Bargaining power</i>	<i>Legitimacy</i>	<i>Institutional change required to address poverty, food insecurity and undernutrition</i>
Pressure on resources increases during a famine, jeopardizing local regulations of access to pasture or to fish, a major substituting strategy for vulnerable households	Powerful commercial users physically push out others in absence of state control; threats of witchcraft increase bargaining power of both sides	Spiritual ownership/ common property regime vs. citizenship/ open access	Subsidiary property rights regime, unique set of institutions, monitoring and sanctioning (gender-sensitive)
General economic crisis hampers the resilience of small families which have a smaller workforce, less cattle and limited social networks	Impoverished people lose bargaining power through a weakening of their social networks	Kinship obligations vs. neoliberal ideas of development implying economic success through 'hard work'	Development of formal social security structures Strengthening local markets to reduce transaction costs for trade in order to include less mobile people, requiring lower investments Inclusion of small households in disaster relief programs
Cash-crop production has skewed land away from women to men. In addition women's income is more affected by droughts or high prices for agrarian inputs as they have limited access to livestock. In the absence of formal social security and alternative income generating activities women must access resources increasingly through men.	Women have little bargaining power to negotiate property rights for their own behalf. They have little bargaining power to defend monogamy in a situation where polygynous agro-pastoralists' households prove resilient	Cultural heritage vs. Christianity, gender and development, and HIV/AIDS discourse	Better access to natural resources for women based on the local tenure system Shared responsibility for children (formalization of men's material commitment) Development of feasible rules to share property in case of divorce based on the local tenure system
General economic crisis and weak health infrastructure offer few options to treat/care for undernourished children	Women use traditional illness concepts strategically allowing the mobilisation of relatives and the responsibility of the father	"Pollution" concept involving diverse persons, vs. individual responsibility of the mother as conveyed by the health sector	Shared responsibility for children also on the material level (formal regulation of men's material commitment)
Women's access to subsistence fishing is jeopardized during a crisis; sexual transactions to purchase fish	Sexual transactions can be enforced according to men's bargaining power	Reference to "traditional" marriage arrangements legitimizing women's involvement in sexual transactions, reducing stigma	Securing terms of trade for women Penalties for sexual abuse

Conclusions

In the present thesis an emphasis was laid on the role of the institutional framework shaping individual access to resources and action taken, and its impact on food security and child nutrition. There is one commonality in the papers: people maneuver between plural institutions (rules, norms, regulations), which are often negotiable, sometimes contradictory as in the case of statutory and customary land rights, or relate to different value systems as in the case of marriage institutions (Table 25). In many cases, ‘traditional’ institutions offer better-adapted options in a local setting characterized by a weak infrastructure and state for many people, particularly when attempts to strengthen the rights of weaker groups by formal legislation are locally not enforced. One example is the preference of polygyny over divorce even if mothers and children undergo considerable distress.

In sum, action will depend on the ability of an individual to make use of different options, which the plural institutional environment offers to them, depending on their power and on ideologies available for legitimizing action. But weaker groups may face limited options and exclusion from access to resources. This facilitates pragmatic action based on sub-optimal options, which needs to be legitimized, whereby people often draw upon locally established ways of action, shaped by local social norms. Hence an analysis of existing institutions (rules, norms, regulations) allows a better understanding of individual action in a given context, and therefore provides a more realistic basis for policy. This may be the development of subsidiary mechanisms to control natural resources without excluding weaker local groups or persons, or to prevent that inheritance rules are twisted towards more powerful men. Processes of ongoing institutional change on the local level should therefore be monitored and existing regulations favouring the weaker should be enforced (Table 25) in order to be able to second the weakest within society and protect them from poverty with all its negative implications.

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PART VI APPENDICES

APPENDICES