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Abstract

This paper documents the initial effects of drought in Sheikan district in Northern Kordofan, Sudan. We describe the patterns of changing behavior that occurred in one village, concentrating especially on the failure of entitlements and the limited options of the men and women of the village. Survey data from surrounding villages confirms this assessment, and indicates the scarcity of opportunities for men who relied on wage labor for income. Common forms of employment such as collecting crop residues, making charcoal, cutting firewood or working as casual labor were unremunerative. Many of the most vulnerable relied on selling of their limited assets and borrowing to ensure subsistence. These strategies, while providing short-term food entitlements, undermine the long-term ability to withstand future droughts. We conclude that for the poorer members of the communities of Shiekan district, the rural economy was not resilient.

Introduction

A drought caused a total crop failure in most of northern Kordofan, Sudan in the fall of 1990. The main difference between this crisis and the 1984-5 famine has been the lack of a high influx of food relief and an even further disintegration of the national economy.[1] Villagers have therefore had to rely much more on the local economy.

In this paper we document the effects of the drought on the people of one small part of the affected area. There are two reasons for writing the paper. The first is simply the necessity of reporting on the circumstances of people affected by drought. The military rulers of Sudan have been engaged in an active policy of denying the necessity of a large-scale international relief effort. Several Sudanese government officials, and the President himself, have been quoted as saying there has been no hunger in the country. International publicity on the drought has been portrayed in Sudan as a conspiracy created by the West to discredit the military government.[2] Careful micro-studies might shed some light, necessarily in retrospect, as to what the situation really was.[3]

The complex semantic problem of the word 'famine' makes difficult any characterization of the crisis confronting the villagers. Indeed, the conflict between the military rulers and foreign organizations took the outward form of a conflict over the naming of the crisis: 'famine' or 'food-gap'. De Waal (1989) has criticized the characterization of famine as mass starvation causing widespread death. In reality people undergo different levels of suffering. Many endure hunger in order to prevent destitution, others become destitute, some become wealthier, and some die. Some famines kill; others do not. De Waal called for replacing the word 'famine' with more specific terms: dearth, severe dearth, 'famine that kills', and mass starvation.

The second impetus for the paper is to contribute to the growing literature on the dynamics and causes of famines. While this study is in some sense conjunctural, we agree with Watts (1987) on the need to locate these types of studies in the context of historical development and transformations in society.[4] De Waal (1989) has been perhaps the most provocative commentator on the effects of drought in Sudan. His analysis of the 1984-5 famine in Darfur revealed many of the complexities glossed over by earlier theorizing on entitlements, in particular the vitality of the responses of the people affected by the drought. De Waal focuses on the concept of resilience, arguing that the Darfur economy was resilient partly because it was isolated from the national economy. As evidence of this resilience, he adduces 'dramatic adaptations to ecological stress, such as the case of the Zaghawa' (p. 110).[5] The economy, he argues, 'created economic niches in wage-labour and low-status trades that poor people were able to exploit during the famine' (p. 110).[6] Overlooking these niches leads others to 'overstate the adverse impact of Sudan's national economic crisis on the living standards of the rural poor in Darfur' (p. 110).

In Sheikan district in December 1990 we witnessed a period of extreme dearth. Many villagers were experiencing a failure of food entitlements. Many families were hungry. The people in the area called the crisis *maja'a*, "famine". Although we left before the famine unfolded, we expected (and the villagers agreed) that unless there was an intervention of food aid, this would be a 'famine that kills'. Furthermore, in direct contrast to de Waal's picture of Darfur, the rural economy of this area of Kordofan province did not appear to be resilient. Villagers who generally worked as laborers were caught in a squeeze of falling wages and rising subsistence costs. Long-term war, economic decay, and widespread drought limited employment in towns, cities, and agricultural schemes. De Waal's picture is one of broad evolutionary processes as whole groups adapt over time.

While it is true that groups as a whole may survive, some groups are more vulnerable than others, and many individuals in the vulnerable groups do not survive. The crisis occurred when vilnerable groups had not recovered from their destitution of 1984-5. The idea of resilience or of indigenous coping strategies is short-term. The reality of the long term has been a depletion of assets which has made survival (economic and absolute) in each subsequent crisis more tenuous.

Our plan for the paper, after a brief introduction to the study area is to: (1) present a chronicle of the changes that occurred in one village; (2) discuss how women managed their initial responses; (3) report on the employment patterns and opportunities that were available to male household heads working as laborers using the results of surveys conducted in the area during the drought; (4) present data on animal wealth and sales, borrowing, and migration, mechanisms which in the short term may ensure food entitlements, but in the long term may lead to further destitution; and (5) relate this to other studies of the social and economic effects of drought undertaken in Sudan and in the Sahel focusing on the concepts of resilience and vulnerability.

The Study Area

The information we present comes from various studies undertaken in Sheikan district of Kordofan province (see Figure 1). Kordofan province in the west of Sudan has for long been a major productive sector of the Sudanese economy; export crops include gum arabic, sesame, and groundnuts, food crops include sorghum and millet, and livestock production includes sheep, cattle, camels and goats. Sheikan district lies just below the regional capital of El Obeid. It is named after the area where the Mahdi's forces defeated Colonel Hicks in 1883, in what was to be a decisive victory in the revolt against British and Egyptian rule. The population of the area, from the 1983 census, is listed as about 26,000 settled and 17,000 nomads.[7] The larger villages in the area, Kazgeil, El Tumeid, Jaibat and Alloba are the market and administrative centers.

The farming system of the area is typical of the Sahel. (In fact, perhaps half of the farmers in the area are not native to the area; there are large populations of Hausa, Bornu and Fulani from Nigeria, Burgo and Masalit from Chad, and Dajo and Berti from Darfur.) About half of the farmed area is devoted to the primary grain crops, sorghum and millet, while the other half is devoted to groundnuts, sesame, hibiscus and cowpea. Rainfall averages about 400 mm a year, but is extremely variable both within and between years. Most of the rainfall occurs in the months June-September. The soil varies between eolian sands (*goz* soils) and heavier clays (*mujlad* and *tin*) along the seasonal water courses.

Upland *goz* sandy soils are relatively evenly distributed; there are few households which do not own land, and land rental is common at very low rents of ten percent share. Land along seasonal streams, however, is closely controlled, and wealthier villagers have developed pump and hand-irrigated fruit gardens (mango, lemon and guava) and vegetable plots.

Contrary to most studies of peasant production systems, we do not feel it appropriate to stratify households by land ownership. As Table 1 shows, land ownership was distributed fairly evenly, on the basis of working household members. Also, while in 1984-5 a few poorer villagers sold land along the water-courses, there is no regular market for land, and no cases of upland fields being sold. Instead, assets such as livestock holdings and trading capital, and occupational categories such as participation in the agricultural labor market, are the keys to household stratification. We conducted a cropping systems survey of 115 households in October, and found that half of the male headed households who were not laborers had more than LS 2000 in livestock assets; only one household

headed by a laborer had that much animal wealth. The pattern for female-headed households is similar; those who work as laborers have very few livestock assets.

During the rainy season there is an active market for labor, especially for weeding. While the majority of households do not usually participate in the labor market, about one third of the households have male or female members who work as laborers. The households which employ laborers are usually those with large amounts of capital, either in livestock or in trading capital, or those who receive remittances from relatives abroad, most often in Libya. Very wealthy traders (by rural standards) live in the market villages; smaller traders sell in periodic markets and the market centers.

Large traders in the market centers control the trade in groundnuts, sesame and hibiscus which are marketed through government organized crop markets. The market for grain, however, is free, and villagers and merchants participate in open air markets. The bulk of grain supplied after the drought, though, came from only a few merchants (who own the lorries) who brought grain from El Obeid, and who bought grain from villagers.

Calendar of a Drought Year: A Village Perspective

In this section, we present a chronology of the drought and its effects from a village perspective. We lived in the village of Kalda for a period of 15 months (from October 1989 to December 1990) conducting economic and agronomic research. We knew every family, worked with them and watched the progression of their agriculture during the season. When the crops began to fail we were able to observe and to talk to families about their response strategies to the drought. We start our account in January 1990 and end it in December 1990, when we left the country. Thus the chronology focuses on the initial responses to the drought, and not at all on the outcomes of the following year, 1991, about which we have no information at the present time.[8]

January: The harvest of 1989 in Kalda was by all accounts poor. Only a few villagers had enough production to dig *matmura*, the traditional method of long term grain storage. The harvest apparently was poor throughout the country; the price of grain did not fall after harvest, as it normally would, but instead stayed at about LS 250 per sack.

May: Many of the poorer villagers had run out of stored grain. Many had also not been able to save seed. About half of the households were purchasing grain from the market to eat and to use as seed; and already the price for a sack of grain had tripled, to LS 750. There was considerable anxiety about the coming year.

July: Planting proceeded despite the very spotty early rains. Millet established very well in the beginning of July, but then a dry spell of two weeks in mid-July severely droughted much of it (see Table 1). The labor market for the first weeding was good; laborers received about LS 40 per day.

August: There were rains in the beginning of the month, raising people's hopes for a good season. Then a seventeen day dry spell killed much of the sesame, sorghum, and millet and severely stunted the remaining crops. For much of the month a common phrase was *Allah bijib al matar* or, "God will bring the rain". A group of Hausa women, who are normally secluded, walked through the village and the fields singing: "God bring the water/the millet is thirsty/God bring the water to drink".

Most villagers thought the late rains were a localized event, and conversations were filled with reports of how good the rains were in other villages. The grain price continued to rise and reached LS 1500 a sack, a 500% increase over the post-harvest price. The price for labor, meanwhile, dropped by about half, to LS 20 for a day, and there was very little work in weeding.

The first delivery of subsidized government grain was made available in El Obeid. The villagers were supposed to organize themselves and pay the government in advance for the grain and arrange to have it delivered to the village. The richer villagers were willing to front the money, a total of LS 20,000. The grain was sold for LS 13 a *mid* (a volume measure of about 3 kg., with 30 *mid* per sack), or LS 390 per sack, with allocation according to family size, irrespective of need. Each family member was to receive 3 *mid*. Many poorer villagers immediately sold half or more of their grain and used the money to pay for their allocation. Merchants from the neighboring market village gave money to a few local villagers in order to buy up the available supply. Afterwards there was considerable controversy between the villagers over the compensation paid to the richer villagers; the ones who fronted the money claimed 10% profit on their funds advanced, and the People's Committee[9] member who organized the transaction and spent a number of days in El Obeid claimed two sacks of grain in addition to his family allocation.

September: Farmers no longer expected the rains to be good. They noted that the rainy season was over; the *haraz* tree brought new leaves; the *kursan* bush turned green; and the *kiljo* bird flew south. The village held a large communal rain prayer. The young men were told not to play dominoes in the village. People now said *Allah fi* or *Allah karim*, or "God is with us" and "God is generous".

The farmers interpreted government decisions to confiscate large stocks of grain in the east and calls for rain prayers (*salat al-istisqa'*) as confirmation of a drought situation throughout the country. Conversations were filled with reports of how bad the rains were in other villages. In Kalda, small light rains kept the crops alive and people considered themselves lucky. They still had some hope. Some went out and planted; some realized the futility of further agricultural activity. One Hausa farmer was the first to abandon his fields; he left for Dilling (in the Nuba mountains) to work in the market making sandals.

A small amount of grain (forty 90 kg. sacks) was made available to Sheikan district as part of the government-distributed alms tax (*zakah*). In Kalda there was easy agreement on the criterion for distribution; widows, regardless of whether or not they were attached to prosperous households, were eligible, as were households headed by old men with no active male sons.

October: Most families had by this time reduced their consumption to two meals per day; some stopped using oil for cooking. Many collected the leaves of the baobab tree (*tebeldi*, or Adansonia digitata) and wild greens (*khudra*), to be used to make stews. The berries of the *kursan* bush (Boscia senegalensis), which are soaked for five days to leach out toxins, and then ground and eaten as a grain substitute, had appeared spottily and not yet ripened. Informants feared many bushes would not produce berries at all.

The village women who brewed sorghum beer (*merissa*) were no longer able to afford the grain inputs. People started to sell goats. Two laborers from northern Kordofan who had been living with wealthy households and who expected to participate in the harvest left the village; there was no work. The son of the sheikh, one of the poorest men in the village, went to the brush and made four sacks of charcoal, but could not sell them at the Friday market; there was no demand. Many young men, and some of the older heads of households, left the village during this time, looking for work

in the cities. Quite a few came back, with reports of few employment possibilities and low wages. There were also rumors of forced conscription, and forced laboring on government projects.

A delegation of 72 members of People's Committee members and local officials went to El Obeid to meet with the head administrative officer, the *dabit tanfidi*, and presented a letter requesting aid. The Kalda delegate said the *dabit* told them that Sheikan district did not need aid; that he had delegations from other rural councils outside of his office twenty-four hours a day, and that this was the first time he had seen people from Sheikan. After several hours of heated arguments he agreed to tour the region and consider it for aid.

November: In addition to collecting the crop residues off their fields, in order to sell later to nomads, many villagers spent the days collecting wild grasses, to save as feed for their donkeys.

Another grain allocation arrived, this time to the women's cooperative grain storage project sponsored by UNICEF and the Sudanese Ministry of Cooperatives. The ration was a very large one-fourth sack per person (about 24 kg.) and the grain was sold at LS 540 a sack. No other village in the area received the same level of assistance. Again the richer villagers fronted the money, and gave the poorer villagers three days to pay for the grain. One family received 28 *mid* and immediately sold 18 to a merchant LS 45 per *mid* in order to pay for their ration. During the months of October and November the price of grain fluctuated between LS 1200 and LS 1800. When villages in the area received government subsidized grain, the price offered by merchants in the market would fall as poor villagers sold part of their ration in order to get cash to pay for the ration.

One of the poorest villagers who had five relatives on his father's side, all merchants and well off, described them as *shab'anin*, "full and satisfied". They lived in a village only an hour's walk away. And yet he had not received any help from them, nor would he consider asking them for help. As his trading capital invested in a small stock of second-hand clothing dwindled he earned lower profits, and he and his family reduced their consumption and ate into their capital.

Another man in Kalda, relatively well off, wrote a letter to his brother who had migrated to Khartoum over twenty years before, and had worked as a police officer. Within two months he received LS 1000, and a promise of more help.

December: On Mondays and Fridays the poorest man in the village, who frequently went for a day or two without eating, would go to the market in Kazgeil and ask people for money if they could spare it. Four young unmarried men left to join the army in El Obeid. Government officials held a meeting in a nearby town to discuss with village leaders the establishment of public works programs to dig water reservoirs, *hafir*. Those who attended the meeting said there was no plan, no timetable, no organization. With the situation in the Gulf and the government's anti-western position, the villagers felt that relief aid would not be forthcoming anytime soon.

Despite the tremendous adversity, people retained their sense of humor; a joke that made the rounds of the village was that if the government's slogan was "Eat what we grow, wear what we make", then the villagers would, "Eat watermelon seeds and walk about naked, like we used to."

Women and Drought

The following paragraphs present some stories about how women and their families in Kalda were surviving (in November and December) the effects of total crop failure. They are illustrative

of the varied but limited options open to village women.[10]

Amna, Um Mona, Fatima, Khadija and Miriam brewed sorghum beer, *merissa*. Before the drought they would rotate days, with each of them making beer once or twice a week. When grain became expensive, they had to increase their prices and the men who usually drank could no longer afford to drink as frequently. The reduced income caused several women to use their capital for consumption, to the extent that they could no longer finance the making of *merissa*. The other women produced it less often, and with lower returns. The husbands of the *merissa* makers were all agricultural laborers whose opportunities to earn income were also greatly reduced.

Hawa, a young women of twenty-five, owned a tea and food stand near Kalda, on the main road going south from El Obeid. Like the other younger unmarried tea women from Kalda, she was from a poor family of the Burgo ethnic group (the only group that would permit young unmarried women to work in the tea shops); she lived with her parents, who had virtually no income, and her brother, who often worked as a laborer. Because she had extensive working capital she supported the entire family. Hawa participated in a revolving saving fund with the other tea women; every two months she took home LS 4800 in savings. Prices of tea and other supplies became more expensive during the drought, but she was able to cope as she had a high volume of sales, and could pass the price increases on to her customers.

Halima, a married woman, was also a tea women but had very little working capital. She was unable to keep up with the rising prices of supplies and was often unable to keep her tea shop open. Her husband, Abdel Rahman, had migrated to the Nile to look for work. She had no expectations that he would send her money, but said that it was better that he left because there was no opportunity for employment in the area and he would just be another mouth to feed. Halima had three children, and said they often went hungry.

Batoulla farmed with her husband. While she sold some of her goats during the drought, she was not worried about survival; her daughter was married to a well-off man in El-Obeid. She noted that one of the most important effects of the drought this year would be the complete exhaustion of her stocks of millet and sorghum seed. During the 1984 drought, she lost her seed. Every year since then she had carefully selected seed, improving the quality. This year she again lost her seed stock and would have to start the seed selection process over again.[11]

Bakhita and her children left for Wad Medani to look for help from relatives. She was six month's pregnant and she said her pregnancy was difficult because she was not eating well. Her husband's second wife, Ragia, had stopped making falafel (*ta'miya*) for the nearby lorry stop because the increase in the price of cowpeas had reduced her income, forcing her to use her working capital for consumption.

Discussion

There are several important themes arising from the chronology and stories of women of Kalda. Rising food prices and crop failure were the two basic elements of a classic crisis of entitlements (Sen, 1981). Limited local employment opportunities necessitated the selling of assets, borrowing, and migration for employment. We examine these in more detail in the following sections.

Just as male employment opportunities decreased, the most profitable enterprises for women also declined. Female food processing and selling activity suffered from the price increases in inputs;

every jump in prices reduced their real working capital, making their enterprises less and less viable. At the same time there was increased pressure to divert capital to household consumption. Many women were also involved in extremely low capital enterprises such as the making of fans, skullcaps, palm mats, and clay waterpots. This handicraft production yielded very low profits.

The changes in prices also reflect the effects of the deterioration of the national economy. Villagers often said that one of the main differences between this drought and the drought of 1984-85 was the current unavailibility of many rationed items. In 1984-85, sugar, tea, rice and lentils were available at prices low relative to grain. In 1990, many of these commodities were not available except at extremely high prices, comparable to the increase in grain prices.[12]

Many of the families were losing one of their most important productive assets, their adapted seed stock. The probable deterioration in the quality of seed stock has received little attention in the literature on droughts. While farmers may find seed from some source (recent reports in Kordofan are that CARE imported seed from Nigeria), the quality and suitability are often poor. Most farmers of Kalda reported having no seeds left; all had either been planted during the rainy season as initial plantings failed several times, or eaten.

Employment, Assets and Migration

The next three sections present some of the important aspects of the crisis that we have alluded to in the preceding sections, that is: (1) what exactly were the employment possibilities for male household heads who worked as laborers; (2) how much were households able to rely on their assets and social networks; and (3) what were the possibilities for migrating and obtaining work in other areas of Sudan.

In November, when the extent of the drought became apparent, we conducted a "rapid rural reconnaissance" survey of the resilience of the rural economy to drought. We had originally intended to sample 120 laborers, but were unable to finish due to the hostile political environment. We surveyed sixty-three laborers in six villages (hereafter '63 Laborers' sample).[13] We were interested in how one group of poor vulnerable families, those dependent on male wage employment, fared during a period of total crop failure. A quota sample was used; in each village we asked for ten men who regularly worked as agricultural laborers or as laborers during the off season; we commonly used the phrase "people who live from daily work", or "people who live from day to day". The survey was designed to elicit information on the availability and diversity of employment, animal sales and assets, help from family and non-family members, and borrowing.

Employment in the Kazgeil Area

We asked the 63 laborers to report their working patterns for a week. We grouped the varied activities they reported into six categories. Figure 2 shows the relative frequency of each activity in terms of the number of days out of a total of 416 days (7x63 minus 25 missing days) the activity was undertaken. In Figure 2 we classified the 63 laborers according to their predominant activity for the week; most worked four days or more on one activity, and only eight varied their activities so much as to not have clear classifications (these are the "mixed" category).

Cutting and collecting crop residues and grasses was the most important activity. The collection of these residues would likely be extremely profitable to those who could afford to hold them until later in the year. During the previous May and June the price of a *coleg*, bundles about

two hands-full in size, of sorghum had soared from LS 2 to LS 5-10 as animal-owners desperately sought supplies in the weeks before the rains. Many of the laborers, however, reported selling their crop residues early, either on a weekly basis or in large quantities. More concrete evidence of this came from data on crop residues from about half of the male headed households in Kalda. Many of the poorer farmers of Kalda were already selling in November: one sold 75 *coleg* for LS 200; one sold an entire horse cart for LS 200; a poor man who lived alone sold all of his millet and sorghum stalks for LS 195. The wealthier households, however, were not selling (sometimes they were buying) and had stored far larger quantities; one household had collected 8 sacks of groundnut residues and 238 *coleg* of sorghum stalks. They had not yet collected the millet stalks. A wealthy neighbor had collected 1000 *coleg* of sorghum.

While we do not have data on the collection of residues during a normal year, it was our impression that farmers cleared their fields to a much greater extent in 1990. This has several implications for the local environment. Wind erosion would increase, both because the soil was so dry from the lack of rainfall, and because the fields were cleared much earlier and much more thoroughly. Fryrear (1987, p. 117), for instance, reports that as little as "30% soil cover reduces soil erosion by 80%". The clearing would also affect soil fertility, as livestock belonging to pastoralists generally recycle the residues in the form of manure and urine. In this system, where fallow periods are very short, continuous cropping is very much the norm. As there is no fertilization of the soil, manure is an important source of soil nutrients. Finally, clearing early may adversely affect the water holding capacity of the soil, by reducing organic matter and by increasing soil crusting.

The second most common activity of the 63 laborers was daily wage labor. The category included such activities as brick making, well digging, and building. Wages varied by place and occupation. At the high end, men working at the brick-making yards (*qamin*) in El Obeid, Kazgeil and El Tumeid were paid by tne piece, and could earn around LS 50 per day. Builders employed in El Obeid or in Kazgeil on an FAO grain storehouse project were paid LS 30-50 per day. Two men who worked for ADUCO, a Dutch company surfacing the main road, received LS 40-50 per day. On the low end, work digging wells for watering animals paid only LS 15-25 per day. Cutting crop residues for other farmers paid about LS 20 per day. Real wages were extremely low because of the high price of grain; LS 50 could buy about three kg. of sorghum, and the more common LS 25 wage could buy only one and a half kg.

The third most frequent activity was not working. Many men reported being unable to find work, either on their own farms or for wages, at least some of the time. The majority of inactive days, however, were reported by thirteen men; they accounted for 64 out of 106 inactive days. Not all of these thirteen were chronically unemployed; three indicated that they regularly worked in the town of El Obeid either making bricks or in construction; two had spent the previous week chopping firewood; two were ill; one made ropes out of tree bark; and one worked as a tailor in the market.

Fourth was collecting firewood and making charcoal. During the reported week this was done by a only few men, who generally did the work intensively. Five men accounted for almost half of the 57 days spent in this kind of work. The returns were low; most claimed to be able to collect about two bundles (*rubta*, or *khisna*) or firewood each day, and these sold for LS 15. Several men reported earning only LS 20 per day. Making charcoal earned slightly more, but had the disadvantage of delayed payment. Sacks of charcoal sold for LS 25-35, and people reported making at most five sacks per week.

The low frequency of work in the brush, which the villagers call the *khala'*, or "open country", perhaps does not accurately reflect the importance or extent of reliance on the brush areas. In a separate question we asked whether the laborers had collected firewood or wood products or made charcoal in the previous month. More than a third of the men indicated they had, and most collected between LS 100-300 worth of wood products from the brush. Also, we asked the laborers what activity they spent most time on in the previous off-season (January to May). More than a third said that firewood and charcoal-making were their regular activity during the off-season. In 1990 these men were working in the brush areas as early as September, four months before they normally would.

Cutting firewood and making charcoal are likely to have severe degrading effects on the environment (Whitney, 1987, and Ibrahim, 1987). Mortimore (1989), however, has argued that researchers should not automatically conclude that "normal" patterns of land-use lead to deforestation; in his view regeneration is overlooked and important.[14] While there are no conclusive studies for this area, villagers in Sheikan say that the landscape of the area has altered drastically over the past three decades, and that with present land-use trends there is little opportunity for regeneration.

The fifth occupation was making handicrafts, such as carving wooden beds, knife handles or cooking implements, or making rope. Just a few men undertook these activities. The returns varied tremendously, but did not exceed LS 150 per week.

Assets, Social Networks, and Migration

When villagers cannot subsist on income earned from employment or agriculture, they must tap into other resources. Poor women involved in food processing draw on their capital and go out of business. Poor households with small holdings of livestock often sell their few remaining animals. Some villagers are able to call on others for help. Social networks between poorer and wealthier villagers created through kinship, marriage and friendship are often the basis for receiving loans and help. Very poor households are often left out of these networks. A final option, after failing to obtain secure employment, selling their livestock and attempting to borrow or receive gifts, is to migrate.

Animal Wealth and Sales

Ibrahim (1990) reports that in Darfur the terms of trade between livestock and grain fell by more than half during 1990. The same dramatic decline occurred in Sheikan, and was the cause of the failure of animal wealth to cushion the effects of the crop failure. In Kalda, for instance, a medium-sized goat sold for only nine kg. of grain in December 1990; small goats fetched only three kg. Interestingly, there was not a dramatic collapse in the price of livestock, one of the hallmarks of the 1984-85 famine. Instead, livestock prices declined slowly, and meat prices in Kazgeil and El Obeid did not change at all. The decline in the terms of trade was due, rather, to the dramatic increase in the price of grain.

In our sample of 63 laborers many households had no livestock to sell, never having built up stocks which were lost during the 1984-5 drought. The average value of livestock owned was LS 1991; enough to purchase about one and a half sacks of grain; equivalent to one and a half month's consumption for an average size family. But the distribution of livestock holding was skewed. There were twenty laborers who owned no livestock, and almost three fourths of the laborers owned less than LS 1,000. Of the 63 laborers, fifty owned no sheep and fifty four owned no cattle, goats by far being the the most prevalent. None owned camels. Furthermore, seven of the eleven large holders

were residents of Um Ud, a village known for its large holdings of cattle (see also Figure 3 discussed below).

Borrowing and Help from Relatives

Receiving help from kin and neighbors is often not distinguished from borrowing. Those helped invariably state that they will repay the amount received (and only the amount received- there was only one case of interest). There is no organized credit market for consumption loans, in the sense of well-recognized moneylenders and terms of borrowing.

For the 63 laborers, twenty-four households borrowed during the period after the rainy season failed. The amounts ranged from LS 100 to LS 3,500. Twenty loans were LS 1,000 or less. Borrowing and receiving help appeared to be associated with animal wealth in households with more assets tended to borrow more (though the small number of borrowers means the relationship is not significant). That borrowing was important is corroborated by evidence from the cropping systems survey conducted in October (and referred to in the introductory section). Out of the ninety-eight households in the survey, thirty-six had borrowed or received cash or grain from kin, merchants or other villages. About half of the loans were taken by laborers (nineteen households out of thirty-six), and very few were taken by households categorized as employer households. Fifteen of the loans were to households that had to borrow in order to purchase government subsidized grain. The amounts varied from LS 100 to LS 1000, and from a few kilos to several sacks of grain.

Figure 3 demonstrates the inter-relationship between livestock holdings, likestock sales and borrowing for the 63 laborers. We divided the livestock holders into four categories, based on amount of livestock owned. From the figure, we can see that those with large holdings had large sales. However, when sales and borrowing are viewed simultaneously, we see that not only did laborers who held and sold the most animals borrow little, but those who owned no animals and sold few animals borrow little. This trend confirms something which we felt was occuring in Kalda- the poorest and the most vulnerable participate the least in emergency borrowing.

We also examined the extent to which households received help from children living in other villages.[15] Most of these children were in their thirties and married. Nineteen of the 63 laborers reported having married children living in other villages, but only three reported having received assistance from them (ranging between LS 150-500). Thirteen of the 63 laborers reported that they had unmarried sons away from the village, and most of them received from LS 200-300 every month. These young men were mostly in their late teens, and worked in the main towns, Khartoum, Wad Medani and Gedaref. They had left their villages before the drought; that is, they were already established and in secure jobs. Their brothers who had stayed in the villages, and who sought to migrate after the drought, fared less well, as we see in the next section.

Migration

Despite the limited work opportunities in other parts of the country, and villagers clear recognition of this, many of the poorer men and young unmarried men were planning to migrate, or had migrated, from the village in December. Many of them had already returned at least once, with news of the limited employment opportunities. We present some anecdotal material that gives an idea of the uncertainty of this coping strategy.

A young man who had left Kalda in September for Port Sudan returned, in October, from El Obeid, saying he had been unable to accumulate any money to pay for the expenses to Port Sudan.

An older man, the head of a large household, left the village in the beginning of October and went to work in the El Obeid crop market, loading sacks of produce. The work was low-paying manual labor, paid by the piece. After three weeks he came back to the village because he was not earning enough to support his family in the village and cover his expenses in town. He said that the volume of crops brought to the market was sharply reduced, and consequently so were the daily earnings. Another young man went to El Obeid to work in the brickyards. He said the work was plentiful; anyone could get a job. The pay was by the piece- per 1,000 bricks, and the most someone could earn was LS 50 per day. He had his wife and three children to support in the village; grain alone cost about LS 35 per day. Then the owner of the brickyard ran out of inputs (i.e. he could not afford the cost of water) and closed the operation down; the young man returned to the village, intending to return later to El Obeid and try again. A group of younger men went to Habila, the large mechanized agricultural scheme in the Nuba mountains, but came back saying there were no employment opportunities because of drought and war.

Most of the 63 laborers would also probably leave their villages[16]; almost half had left in the 1990 dry season, working in Khartoum, Gedaref, and Gezira (twelve laborers) and southern Kordofan (17). They worked at low-paying jobs. In fact a number of women in Kalda claimed that when their husbands migrated they did not usually send any remittances, they just returned with small amounts of capital for the rainy season. Also, many of the middle-aged laborers do not have the same wages or employment opportunities as younger men.

Discussion

The main point we wish to convey in this discussion of the characteristics and activities of laborers is that their position in confronting the effects of a complete crop failure was extremely tenuous. Their livestock holdings were very low, and were rendered almost ineffective because of the changes in the terms of trade. Indeed, many villagers noted that the terms of trade had altered so much, and the likelihood of finding buyers at the village markets had fallen so low, as to make them prefer to hold onto livestock rather than selling.

The local economy for the villagers of Kalda was not resilient. From the point of view of the households dependant upon wage-labor or self-employment without capital, and in terms of their reduction in consumption, an already disastrous situation was only going to worsen. Although at the time of our surveys most laborers were still working bringing in their crop residues, the employment prospects for the coming year were bad.

There is another sense, too, in which the local economy is not resilient, and that it is the long-term effects of some of the actions households carry out in order to survive. We have seen in the course of the paper that certain actions degrade the resource base: making charcoal and firewood, losing genetically adapted seed stock, clearing cultivated land of crop residues. Other actions, such as selling livestock at low prices, hinder the ability of households to recover from destitution.

Conclusion

In the introduction we emphasized the work of de Waal, partly because his has been one of the few detailed analyses of famine in Sudan, and partly because he has stated clearly an approach that is gaining currency in the literature. Mortimore (1990), for example, sets out this view in the West African context. The argument, in gross summary, is that previous analyses of famine have been used as justifications for expensive interventionist, top-down programs. These sometimes undermine the autonomous activity of those who must confront and survive the crisis. They also draw resources

away from lower-profile interventions which might facilitate, rather than replace, autonomous survival strategies.

While we agree with the general thrust of the argument, the conclusion that top-down interventionist programs have negative side effects does not invalidate previous analyses of famines, presumably those which emphasize the failure of entitlements. While the analyses often portrayed people as passive victims, they did draw attention to the importance of understanding that a crisis situation could be occuring in the absence of a food availability decline; or, more relevantly, in the presence of a 'food gap'. In other words, analyses of the resilience of social systems confronted with drought should not overlook the cases where social systems are overwhelmed.

In this paper we have tried to show how little resilience there was in the local economy of Sheikan district; the options of people who normally worked as day laborers were sharply limited. Opportunities in the towns and other parts of the country were also limited. Because of the lack of food aid, villagers had to exploit resources such as crop residues and woodlands and sell livestock, strategies which in the long term undermine their abilities to withstand future droughts. Food aid and public works alone might not have altered the pattern of activities and the incidence of suffering, but most certainly would have mitigated them. Interventionist policies, whether conducted by national governments or foreign relief agencies, still have something to say for themselves.[17]

Notes

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1. On the latter, see Woodward, 1990, and the June 1991 issue of Disasters.

2. The government's slogan, Nakul min ma nazra wa nalbis min ma nasna, or "Eat from what we grow; wear what we make", illustrates the government's perception of over-dependence on Western government assistance and influence; in July 1991 the Sudanese information minister reportedly stated that, "We want to dismiss all these relief activities... because we realize that these people (aid agencies) interfere in our internal affairs... We don't want our people to depend on relief. Our experience shows that the people who depend upon relief become lazy. We want them back to work." (Arab News, July 13, 1991, p.3)

3. A complete assessment must await further collation of evidence other areas, and cover a longer time frame.

4. For recent studies that make important contributions to the understanding of the long term historical processes affecting rural areas in western Sudan see Tully (1988), Ewald (1990) and Kaptjiens (1985).

5. See also Tobert (1985).

6. One should not optimistically conclude that his evidence confirms a general proposition that economies will, in general, provide subsistence incomes to the participants; there have been, recently, several rigorous examinations in economic theory of how an economy can fail to "create" employment while simultaneously "creating" malnutrition (Dasgupta and Ray, 1986).

7. In this paper, we deal exclusively with settled populations. There are two pastoral populations in the area: the Baggara migrate with their cattle to Sheikan during the rainy season and the Shanabla who winter in Sheikan with their camels. Because of the war in the Nuba mountains, about 500 Baggara women and children stayed in Kazgeil during the dry season. When the rainy season turned into a drought they left to join their herds in the south; villagers said the Baggara faced the choice of hunger or war, and chose the former.

8. The Sudanese government has made travel difficult for journalists, but there were reports that as many as 200-300 persons were dying every day in Kordofan as a result of the famine. Obviously there is little basis for certainty in these reports. Letters from friends in El Obeid report that CARE has been distributing grain in northern Kordofan, including Sheikan.

9. At this time the military government was in the process of working out the allocation of power between "traditional" authorities held over from the Native Administration period (*omda* and *nazir*) and the People's Committees which were created (by appointment and election) after the coup in June 1989.

10. The names have been changed.

11. This was not a unique situation. Many of the villagers lost their seed stock. One man who was known to select seed and preserve varieties well-adapted to the local environment had no millet, groundnut or sesame seed left. He had only two mid of *kamazoki*, a local sorghum variety much favored by the farmers who obtained it from him; his children had already 'accidentally' eaten one mid which he had been saving.

12. In October of 1990, the government opened a duty free shop in El Obeid. Only those with legal foreign currency (mostly Sudanese recently returned from abroad) could shop there; the most popular items were flour, sugar, tea, and rice. This became one of the primary sources of black market goods, and in some cases the only source of these items.

13. Due to a sharp constraint on time and funds, we limited the survey to male laborers. While women's income and production for household consumption is important in many households, we would have had to sample many more households in order to obtain a large number of households where women's income was significant. Our emphasis on male laborers is due in part to the ease with which they can be interviewed; a large quota can be obtained relatively easily, they are often available during the early mornings and late afternoons, and they can be interviewed in relative privacy.

14. Mortimore (1990) further argues that the rural poor are able to manage and conserve their woodland resources; in this area of Kordofan, however, the brush is not privately owned, so there is a problem of "the commons", coordinated with difficulty between far-away villages and pastoralists. Also, it is the wealthy lorry owners who organize the charcoal trade; as their revenues from transporting crops fall, charcoal becomes one of the few sources of freight revenue. The increased competition might be expected to be beneficial to the laborers, but the lowered market prices for charcoal and firewood have a perverse effect; instead of reducing the supply they increase it, as households with no other sources of income must sell even more in order to secure subsistence.

15. Rosenzweig and Stark (1989) have suggested that a primary motive of marriages is to mitigate the effects of varying risks through diversification, that is, by decreasing the covariance of risks.

16. Due to time constraints, we were unable to obtain an accurate estimate of the laborers who had already migrated; our impression was that it was not a large proportion.

17. The reader may want to consult Dreze and Sen (1989) and the other volumes of the WIDER study for an extensive discussion of the issues raised in the conclusion.

Figure I: Map of Kordofan and Study Area

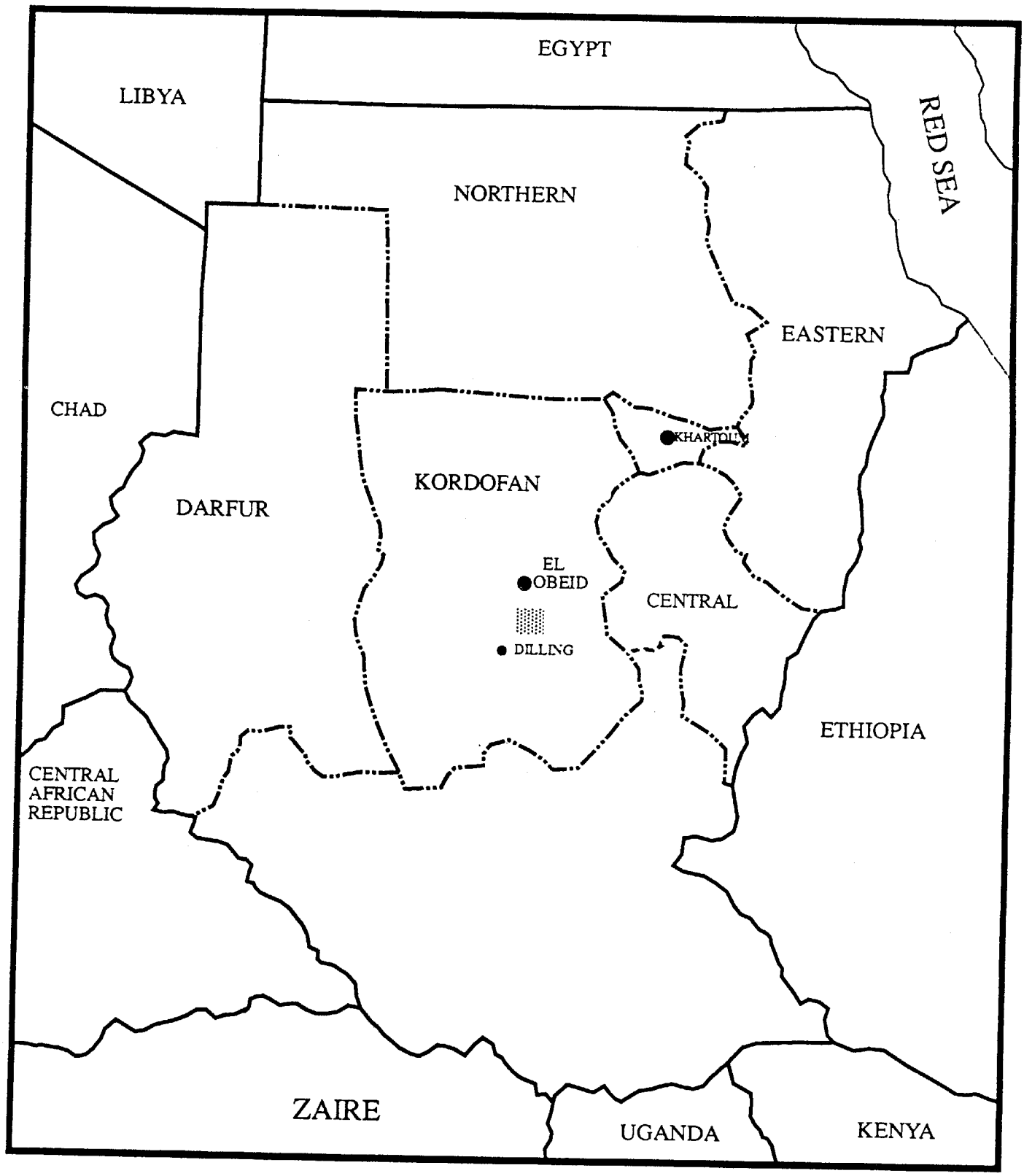


Table 1: Land, Animal Assets and Captial by Labour Market Participation

	Mean Area Owned	Mean Area Planted	Mean Area Owned Per Capita	Mean Area Planted Per Capita	Mean Value of Animal Assets	Mean Value of Trading Capital
Employers						
Male (n=32)	10.8	15.8	2.9	4.2	6525	2111
Female (n=5)	6.4	6.4	4.6	4.6	9680	0
Laborers						
Male (n=33)	5.6	9.7	2.2	3.4	614	0
Female (n=5)	2.1	3.2	1.5	2	40	0
Non-participants						
Male (n=30)	5.9	9.4	1.9	2.7	5643	10
Female (n=11)	3	3.5	3.2	2.3	909	0

* source: Cropping system survey undertaken by authors in October 1990
**area in mukhammas (1.7 acres); value in Sudanese pounds (12 LS/Dollar)
***per capita means per household member active in agriculture

Table 2: Rainfall in Kalda, 1990

DATE	RAINFALL (mm)
4-Jul	5
8-Jul	7
13-Jul	15
16-Jul	2
30-Jul	25
31-Jul	3
6-Aug	23
23-Aug	22
10-Sep	5
Total	107

Figure 2a: Activities of 63 Laborers by Days
(total days = 416)

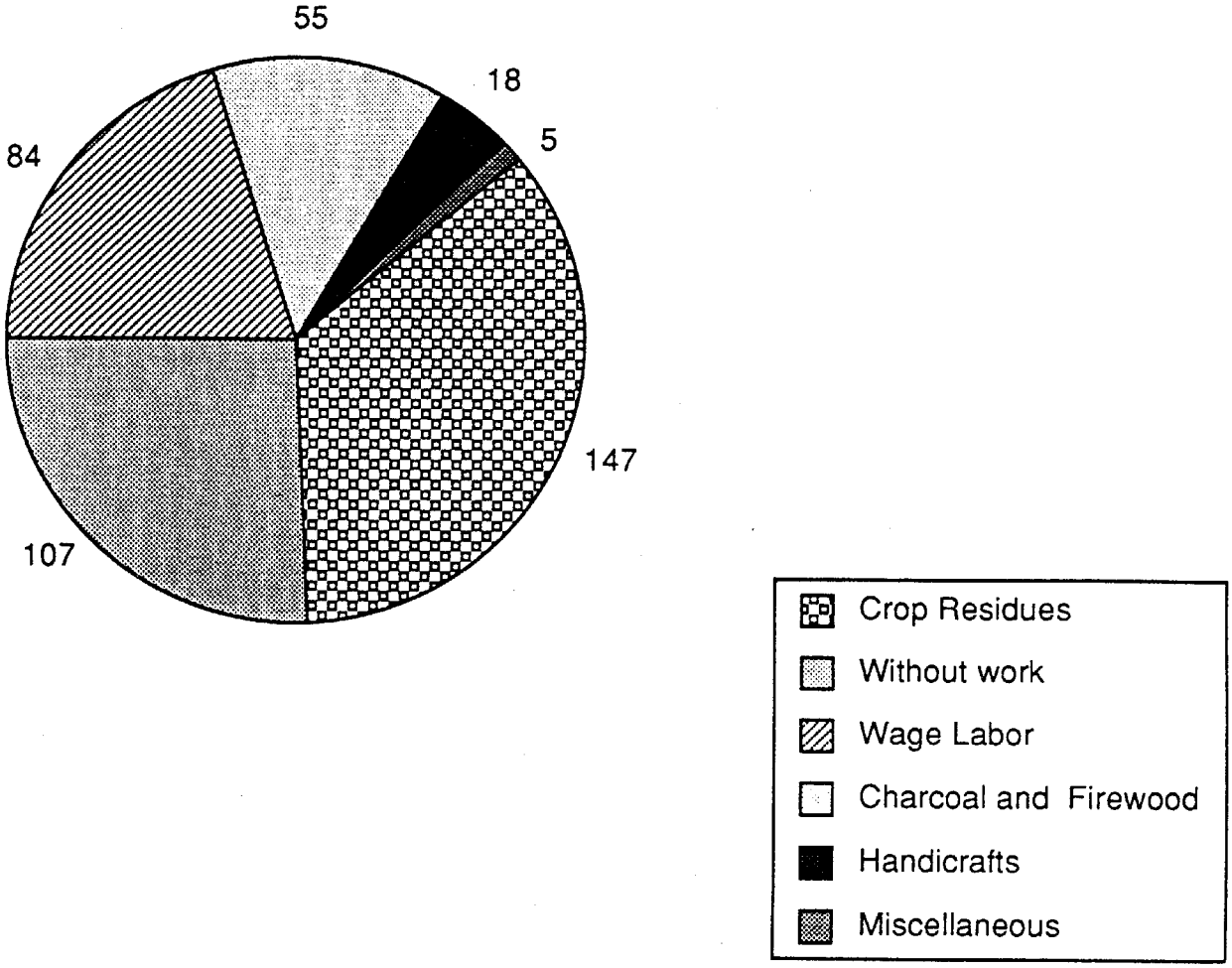
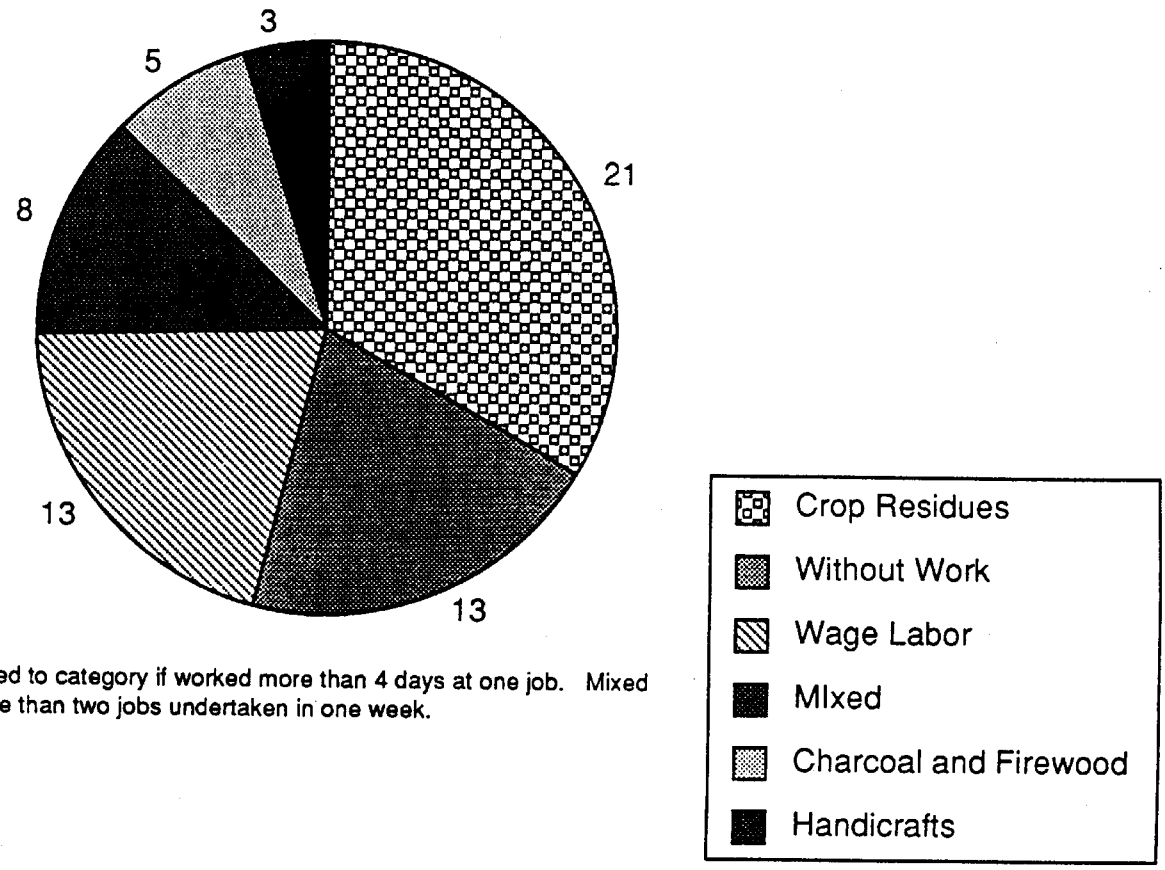
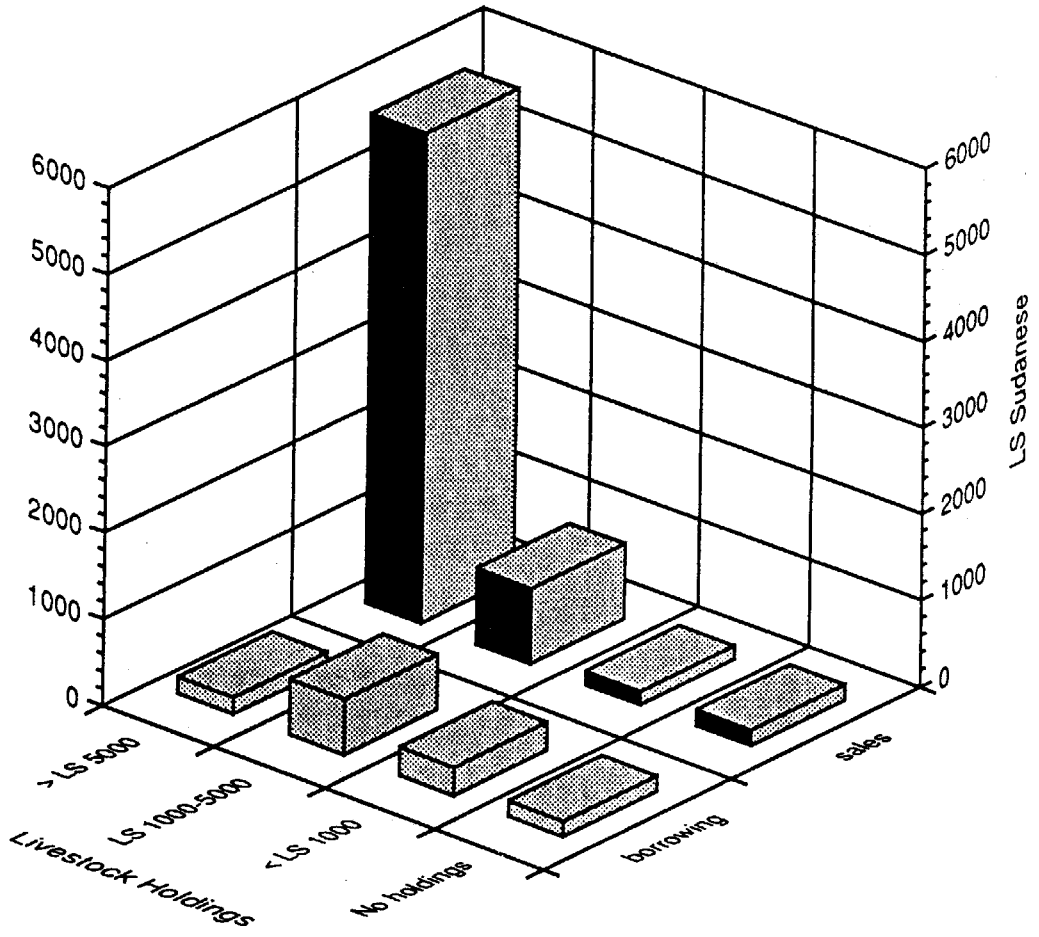


Figure 2b: Activities of 63 Laborers by Person



*Laborers were assigned to category if worked more than 4 days at one job. Mixed is when there were more than two jobs undertaken in one week.

Figure 3: Borrowing and Livestock Sales among Laborers with Different Livestock Holdings



- >LS 5000 (n=12)
  LS 1000-5000 (n=11)
  <LS 1000 (n=20)
  No holdings (n=20)

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