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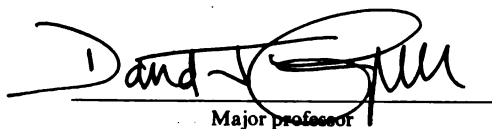
presented by

John Grolle

has been accepted towards fulfillment
of the requirements for

Ph.D. Geography

degree in


Major professor

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FAMINE, MIGRATION, RESETTLEMENT, AND
RECOVERY: CASE STUDIES FROM
NORTHWESTERN NIGERIA

Volume I

By

John Grolle

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Geography

1995

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ABSTRACT

FAMINE, MIGRATION, RESETTLEMENT, AND RECOVERY: CASE STUDIES FROM NORTHWESTERN NIGERIA

By

John Grolle

Mass migrations from agricultural villages in the West African Sahel have occurred during famines. One highly influential model of famine impacts holds that intense deprivation forces many farmers inexorably along a response continuum that culminates in the liquidation of all productive assets, including land, and permanent out-migration. This process purportedly results in the impoverishment and displacement of a large proportion of the Sahel's farming population. The present study tests the validity of the continuum model by posing two basic questions: 1) After a famine ends, do farmers that migrated in distress return to their villages of origin? 2) Should they not return, then what becomes of them?

The research that addresses these questions is centered upon three interrelated theoretical concerns: 1) the retreat and advance of human settlement in response to arid and wetter climatic phases; 2) the dynamics of famine, and the

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potential for farming households to avoid or recover from famine impacts by migrating; 3) the ratchet effect, allegedly the greatest obstacle to recovery from famine. This study also has major implications for famine early warning and mitigation programs, and for development policy and praxis in West Africa.

Fieldwork was undertaken in villages in the semiarid Sahel of Nigeria, and in settlements in the sub-humid Sudan zone populated by famine refugees. Interviews with groups and individuals were the primary sources of data.

The continuum model is deterministic and seriously flawed. Migration during famine is not the culmination of an inevitable and irreversible slide into penury. Many former famine refugees have returned to their Sahelian villages of origin and reclaimed their farms. Former refugees who have settled permanently in the Sudan zone have achieved impressive levels of prosperity without the assistance of governments or international aid organizations. Most of these households have attained self-sufficiency in staple foods while maintaining access to farmland in the Sahel.

Major challenges for contemporary famine early warning systems include: 1) the "triggering" causes of famine are more complex than previously thought, and could easily escape detection by high-tech methods; 2) households often migrate early on during a crisis.

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ACKNOWLEDGEMENTS

Several hundred people made this study possible. I am immeasurably indebted to Illela-area rural producers for their tolerance, cooperation, and extraordinary kindness. Although invaluable insights were imparted by scores of individuals, Mallam Hamidou Gari, Mallam Mamman Gateri, and Sarkin Noma A deserve special thanks. Alhaji Magaji Barau Dansadau's thoroughly remarkable knowledge of Dansadau District greatly facilitated fieldwork. To the heads of refugee families in Dansadau District villages, I owe an exceedingly profound debt of gratitude. I appreciate the support of modern and traditional governmental authorities in both study areas.

Mallam Bagudu Natilli Kalgo constantly proved himself to be indispensable as a field assistant. His assertion that refugees resettle and recover from famine was the crucial impetus for continuing fieldwork in Dansadau District. On four occasions when Mallam Bagudu was unable to join me in the field, Mallam Adamu Al-Hassan filled in most ably and with great alacrity.

At Usman Danfodio University, Sokoto, Dr. Mohammed Iliya was a source of perpetual and invaluable advice, support, and encouragement. My association with Dr. Iliya

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and his colleagues in the geography department greatly enhanced my interpretive capacity and knowledge of the research environment. I also thank Dr. Peter Abdu for his counsel and interest in my work. Dr. Haruna Birniwa of the Department of Nigerian Languages offered important advice on the Sokoto dialect of the Hausa language. I am most grateful to Dr. Joseph Ijere and the University of Maiduguri for critical institutional support.

Dr. David Campbell, my advisor at Michigan State University, guided this work to completion. His enthusiastic criticisms at key junctures resulted in major improvements. I thank Dr. John Hunter for his unparalleled enthusiasm for research in rural Africa, and for his instruction in medical geography. Dr. Asefa Mehretu's location theory courses, and more recently, his work on domestic water and fuel supplies, have significantly influenced my perceptions of rural poverty and famine. Dr. Jay Harman's seminar on research design in geography was superb. I also have benefited immensely from his review of my research proposals and from his instruction in climatology.

Title VI Foreign Language and Area Studies fellowships, Graduate Office fellowships, and research and teaching assistantships made my work at Michigan State possible. The fieldwork was funded by a Fulbright-Hays fellowship and by awards from Michigan State's African Studies Center,

Graduate School
Programs.

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Graduate School, and office of International Studies and Programs.

I am very grateful to Mr. Keith Shaw and Dr. Barbara Shortridge for preparing the maps and other figures. For editorial support I thank Tina Blue and Dr. Curtis Sorenson.

I have been enriched by my Master's advisor, Dr. David Helgren, and his tutorials on Quaternary Studies and other aspects of physical geography. Dr. Byron Emery, my first mentor in geography at the University of Toledo, suggested that I join the Peace Corps. I will be forever grateful for his advice.

The people who taught me Hausa deserve a very special acknowledgement: Mallam Solomon Kama, Malama Zoera Isacca, and Dr. Frank Wright at Michigan State University; and in Niamey, Mallam Abdou Loushe, Mallam Yazi Dogo, Dr. John Hutchison, Dr. Jennifer Yanco, Dr. Hassana Alidou, and Dr. Ousseina Alidou. Throughout this and other endeavors Ousseina has provided trenchant criticism tempered by almost ceaseless encouragement. She is a source of boundless inspiration and joy. Ousseina, na gode Allah sosai da sosai saboda shi ya sa muka hadu! Allah ya ba mu lafiya da alheri a cikin duka aiki da fata da muke. Amin.

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Acco

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Arzi

Azi

AWPP

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Bori

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Burt

Buza

Buzu

Cin

Daji

Daki

Damba

Damo

LIST OF HAUSA LANGUAGE
AND OTHER TERMS

- Acca: "hungry rice," a small cereal-like grass
- Adarawa: Hausa-speaking people from the Adar (Niger) region
- Arawa: an agricultural people who speak Hausa and Zarma-Songhai and inhabit the Dogon Dutci (Niger) region and extreme northwestern Nigeria
- Arziki: wealth, assets
- Au: buying grain, often by the measure
- AWPP: Accelerated Wheat Production Programme
- Bammi: palm wine
- Bargaji: a variety of fadama soil
- Barna: destruction (often of crops by livestock)
- Bazara: the hot, dry season (c. March-c. May)
- Boringo: hard, rocky soil
- Buka: a hut
- Burgu: giant bush rat
- Burtali: a livestock right-of-way
- Buzaye: plural of Buzu
- Buzu: formerly "vassals" of Tuareg pastoralists
- Cin Rani: dry season migration
- Daji: uncultivated land; any land outside of a settlement
- Daki: a room
- Damba: a relatively dark, clayey soil
- Damo: iguana lizard

Dan

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Dog

Dor

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Fal

Fara

Fata

FCFA

Fili

Fula

Fura

Gand

Garin

Gayya

Gero:

Gida:

Gidan

Damuna: the rainy season (c. June-c. September)

Dan Tauri: a member of a traditional martial fraternity

Dari: the cold season (c. November-c. February)

Debagi: hard rocky soil

Dilancin Bisashe: local livestock trade

Dogarai: the body guards of traditional rulers

Doruwa: the locust bean tree, or its seeds/pods

Fadama: low-lying, clayey, moisture-retentive soils often suitable for dry season farming

Fako: hard, rocky soil

Falle: the practice of borrowing one bundle of grain during the rainy season, to be repaid with two bundles at the harvest

Fara: locust or grasshoppers

Fatauci: long-distance trade

FCFA: Franc Communauté Financière Africaine; during the period of fieldwork one French franc was the equivalent of 50 FCFA (one U.S. dollar bought approximately 280 FCFA)

Fili: an open space

Fulani: a pastoral/agro-pastoral people inhabiting the western and central Sahara, Sahel, and Sudan ecological zones

Fura: millet porridge

Gandu: a family farming unit; a large farm cultivated by this unit

Garin Rogo: cassava flour

Gayya: communal work party

Gero: millet

Gida: compound

Gidan Zamani: a compound constructed of cement or cement-clay mixture, often having metal sheeting as its roof

Gobirawa: Hausa-speaking people from the Gobir region

Godiya: thanks

Goro: cola nuts, tribute

Gwaiba: guava

Haraji: the head tax

Harawa: cowpea hay

Hatsi: millet

Hijira: religiously sanctioned migration in search of refuge

Hunturu: Harmattan wind (northeast trade wind)

Hurmi: livestock grazing reserve

IFPRI: International Food Policy Research Institute

Intaya: "hungry rice," an small cereal-like grass

Jangali: the livestock tax

Jan Gargari: a bright red soil

Janjare: a variety of red sorghum

Jan Talakawa: extremely poor people

Jari: profit

Jigawa: sandy upland soil

Jimbiri: the pod containing unripe cowpeas

Kadanya: shea butter tree or its fruit

Kara: sorghum or millet stalks

Karkara: a village's farming area

Kayan Miya: sauce ingredients

Kobo: one hundred kobo equal one Naira (₦)

Konnawa: Hausa-speaking people from the Birnin Konni region

Kuda Tsando: the tse-tse fly, the vector of trypanosomiasis
(a disease that afflicts both humans and livestock)

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Kudu: south

Kuka: the baobab tree or its leaves

Kulle: Islamic wife seclusion

Kurmi: southwestern Nigeria, coastal West Africa

Kwano: an enamel bowl; a c. 2.5 kilogram measure of grain;
metal sheeting

Kwarkwada: an alleyway

Laka: clay or mud

Lissafi: arithmetic, counting, reckoning

Lisso: fine sandy upland soil

Lungu: an alleyway, recess

Magariba: sunset, sunset prayers

Mai Gida: a family or compound head, a patron

Mai-Mai: the second weeding

Mai Shela: the "town crier"

Maiwa: late millet

Malamin Sarki: a traditional ruler's scribe and
administrative assistant

Malka: period from middle to end of rainy season; torrential
rainfall

Masakaita: "middle class" people

Masara: corn

Mashekari: pastoralists' base camp

Masu Arziki: wealthy people

Masu Dan Hali: wealthy people

Murzuna: a kind of caterpillar or grub

Naira/~~N~~: the principle unit of Nigerian currency; one U.S.
dollar bought ~~N4~~ in early 1988 and ~~N8~~ in late 1990

Purdah: Islamic wife seclusion

Rafi: a small stream; an irrigated plot
 Rai-Rai: sand; sandy upland soil
 Rani: the dry season (c. November-c. May)
 Rufewa: a clay granary
 Ruga: pastoralists' base camp
 Rumfa: a shed
 Sabra: fallow farms
 Samari: men in their teens or early twenties
 Sarauta: traditional authority
 Sarki: a traditional ruler
 Sarkin Aske: the head of the barbers' guild
 Sarkin Fawa: the head of the butchers' guild
 Sarkin Noma: the "king of farming," a traditional office
 Sassabe: preparing land for cultivation
 Shigifa: a small rectangular building
 Shigowa: entry, immigration
 Tabki: a lake
 Talakawa: peasants, commoners
 Tarmani: fire ants
 Taruruwa: driver ants
 Tsawo: a three-ply rope often used to tie bundles of grain
 Tuareg: a pastoral people inhabiting the central Sahara,
 Sahel, and Sudan ecological zones
 Tudu: hill; uplands; rainy season farmland
 Tumu: roasted millet from the earliest ripening heads
 Turbe: the first weeding
 Tuwo: a "paste" made of millet, sorghum, or corn, and served
 with a sauce

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Udawa: Buzu agropastoralists/pastoralists

Unguwa: a neighborhood, ward

Wake: cowpeas

Yunwa: hunger, famine

'Yan Kasa: people indigenous to a particular area

'Yan Tebur: petty traders

'Yar Unguwa: a spinach-like snack food

Zakkat: the Islamic tithe

Zana: a large coarse mat

Zarma/Zabermawa: an agricultural people who speak Zarma-Songhai and inhabit western Niger

Zaure: the entrance room of a compound

Zomo: rabbit

CHAPTER ONE: INTRODUCTION

Mass migrations from agricultural regions of West Africa's semiarid lands occurred during the drought-induced famines of the early 1970s and mid-1980s. Famine-related migrations by farmers are considered to be of two general types: temporary labor migration, usually practiced by adult males, and distress migration, which often involves entire families. One highly prominent model holds that a relationship exists between the two types, whereby intense deprivation forces households inexorably along a response continuum that begins with temporary movements by selected individuals and culminates in the liquidation of all family assets and permanent out-migration (Watts, 1983). As hypothesized in this model, the prospects of households returning to their villages of origin and reestablishing pre-famine levels of productivity are poor. Drought and famine therefore result in the pauperization and permanent redistribution of large segments of the farming populations of West Africa's drylands. Although other models of famine impacts have been advanced, the continuum model has had by far the greatest influence on recent theoretical studies and on the conceptual and operational foundations of famine early warning and mitigation programs.

The present study tests the validity of this model by posing two principal questions:

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- 1) After a famine ends, do farmers that migrated in distress return to their villages of origin?
- 2) Should they not return, then what becomes of them?

The research that addresses these questions is centered upon three interrelated theoretical perspectives.

1) The impacts of climatic variations on humankind. Archaeological evidence and written records indicate that over the past several millennia droughts have forced people to evacuate semiarid lands. Abandoned settlements were then reestablished during subsequent phases of climatic amelioration. Evidence that this process continues in contemporary semiarid West Africa would question the validity of the continuum model.

2) The denouement of famine. The research seeks to document the existence and examine the nature of a famine recovery phase. The revelation that people recover from famine would effectively challenge the denouement posited in the Watts (1983) model – the impoverishment and permanent displacement of a large proportion of West Africa's dryland farmers.

3) The ratchet effect. Periodic famines purportedly cause the transfer of assets, particularly land, from poorer farmers to the relatively rich. This ratchet effect therefore is viewed as the main obstacle to return migration and recovery from famine. But the possibility exists that

farming households are able to dismantle the ratchet by migrating.

This study also has major practical implications for famine early warning and mitigation programs. The continuum model, with its portrayal of famine-related distress migration as the culmination of a process of destitution, has had a significant influence on such programs. But perhaps distress migration is undertaken early on in a crisis period in a deliberate attempt to preserve productive assets. Perhaps also some migrating households have secured new and even better assets at their destinations. This finding would be significant for rural development policy and praxis because often the best development initiatives are those designed to facilitate indigenous coping strategies.

Climate Impacts and Return Migration

The role of climate in human affairs is extremely complex and often controversial. Bryson (1988) contended that many, if not most, of the major cultural developments of the past 10,000 years were related to climatic variations and their impact on people's economic base, and to migration. Many other historical studies of climate impacts have elucidated only very weak links between climate and several socioeconomic variables (Wigley et al., 1985). Attempts to analyze the present-day impacts of climate on humankind emphasize the building of sophisticated models and manipulations of secondary numerical data. Yet one of the

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leading proponents of this approach has acknowledged that all such models have substantial conceptual and methodological inadequacies (Downing, 1988).

Despite the recondite character of the links between climate and humankind, it should be possible to determine whether a prominent human response to past phases of climatic amelioration – return migration to the southern margin of the Sahara Desert – has continued in the twentieth century and particularly during the post-colonial period.

Throughout the past two million years of earth history the Sahara, according to Huzayyin (1956, in Wood and Knight, 1975), has functioned much like a sponge, squeezing out populations during arid climatic variations, and absorbing them during favorable periods. Mortimore (1988) echoed this observation in remarking that since "earliest times," human occupation of the southern Saharan borderlands has been characterized by two coexisting tendencies. One has been a pervasive southward movement into the sub-humid savannas, the other a steadfastness in maintaining or reestablishing communities farther north. Archaeological research supports these propositions. The frequency distribution of radiocarbon dates on charcoal, a good proxy indicator of human occupancy, reveals that over the past 12,000 years populations have advanced into and retreated from the Sahara in response to alternating centuries-long moist and arid phases (Gehy and Jakel, 1974). Extensive and detailed archaeological investigations at Dhar Tichitt, south-central

Mauritania, have discovered strong evidence for this process during the period c. 1,800 B.C. – c. 400 B.C. (Stemmler, 1980).

In the past several centuries shorter cycles of advance and retreat can be inferred from written records and oral histories. From the 16th through the 18th centuries, Tubu pastoralists withdrew during dry intervals to the relatively moist plateaus and valleys of the Tibesti highlands, from which they dispersed once rainfall increased and pastures improved. In eastern Niger, similar migration cycles embracing the Air and Termit massifs, the Fachi oasis, and the desert of Tenere, also apparently took place (Maley, 1973). Lovejoy and Baier (1975) described how cycles of advance and retreat proceeded between the savannas and the Sahara's southern margins. Their major focus was the Tuareg, a pastoral people for whom mobility, economic diversification, and a rigid system of social stratification were the keys to coping with climatic variation. During droughts, the Tuareg and their Buzu vassal farmers withdrew from semiarid lands, taking refuge in subservient agricultural communities that had been established previously in the savanna zone. When climate improved, Tuareg pastoralism, trade, and agriculture expanded again toward the Sahara, but the savanna communities were invariably maintained in anticipation of future droughts. During benign climatic phases, farmers outside the immediate orbit of Tuareg hegemony also migrated north to establish

agricultural settlements. According to Mortimore (1988), the advance and retreat of farmers in response to droughts and wetter phases has yet to be satisfactorily examined. Delehanty (1988), however, determined that northward agricultural colonization in south-central Niger during the mid-twentieth century was attributable in part to favorable climatic conditions.

Does northward return migration occur today in semiarid West Africa as a consequence of favorable climatic variations? Or has there occurred a kind of historical rupture, in that farmers who migrate during periods of drought and dearth rarely, if ever, return to their villages of origin once agroclimatic conditions improve? Have the ratchet effect and other recent socioeconomic changes intervened to alter or eliminate this ancient link between societies and climate? Return migration by refugees would be among the most significant observable impacts of a positive climatic variation. Return migration would indicate that the cyclical process of desert-edge regeneration has continued despite the far-reaching socioeconomic changes wrought by the colonial intervention.

Famine

This study investigates the possibility that migration during famine is not necessarily the culmination of a process of pauperization, but is instead a strategy for preserving productive assets or for acquiring new ones. The focus on asset preservation is relevant to Africans'

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perception of famine. In contrast to Western definitions, which invariably include starvation unto death, Africans view famine as a process that begins when they are forced to resort to survival strategies that compromise their future economic viability. Destitution, not death, is their principal cognitive focus. If people liquidate productive assets, but conditions improve sufficiently so that death is averted, a famine has nonetheless occurred (Walker, 1989; de Waal, 1989).

Identifying the cause of famine is much more controversial than defining it. Nearly all analysts agree, however, that famine is both predisposed and catalyzed. A broad spectrum of ideological and disciplinary orientations accounts for the numerous competing explanations of the predisposing, or ultimate causes of famine. Most prominent is the interpretation of dependency theorists, who identify the colonialist trident of taxation, monetization, and compulsory cash crop production (Watts, 1983). Another prominent explanation cites "market failures," and the resulting inability of poorer people to purchase food (Sen, 1981). Others hold that the predisposing cause of famine is the persistent reliance on subsistence production and a lack of economic diversification in rural areas (Mortimore, 1989; Mesfin, 1984). In semiarid West Africa the catalytic causes are thought to be clearly identifiable as drought, locust attacks, and, less frequently, livestock epizootics and the depredations of birds and rodents. This study will show

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that catalytic causes are somewhat more complex than previously demonstrated, and by focusing on the progression of famine and its denouement, will cast doubt on dependency explanations of famine causality.

The central theme of Blaikie and Brookfield's (1987) "regional political ecology," the conjuncture, is another approach considered in examining the causes of famine. As explained by DeVries (1985), the Annales school of French historians argues for a tripartite conceptualization of time: the event, the conjuncture, and the structure. Structural time may be measured in centuries; it incorporates institutions, ideologies, and other slowly evolving features of the human career. Corresponding to the more traditional view of history is the event, the time scale of which ranges from a day to a year. Conjunctures are combinations of processes, both anthropogenic and physical, that conjoin or covary to bring about change in the medium term. Climatic variation, epidemiology, demography, and technological development, as well as various other social and economic processes, may all figure prominently in a conjuncture that results in famine.

Regional political ecology has much in common with Butzer's (1982) approach to human ecology, with its major themes of space, scale, complexity, interaction, and equilibrium state. Similar to the conjuncture is his concept of the "concatenation," which incorporates elements of these themes. Famine may be brought about by a chance

negative concatenation of poor leadership, social pathology, external political pressure, and environmental perturbations. Positive concatenations may lead to demographic growth, economic development, and territorial expansion.

Watts (1983) found the ideas of the Annales school and the conjuncture to be especially appropriate for his exegesis of drought and famine in Northern Nigeria. I contend, though, that the structure – the centuries-long process of capitalist penetration – receives in his analysis more emphasis than the conjuncture. The underscoring of structure accounts for the determinism that Richards (1990) and others perceive in Watts's research. His model of the "temporal sequence and organization of responses to food shortage," which culminates in "permanent out-migration" (Watts, 1983:436), epitomizes this determinism.

How famine progresses through time is exemplified by the sequences in which people resort to different coping strategies. Corbett (1988) reviewed several empirical studies of coping strategies, including Watts's (1983), and from them deduced a general three-stage model that begins with insurance mechanisms (changes in agronomic practices, sale of small livestock, reduction of food consumption, collection of wild foods, interhousehold transfers and loans, increased petty commodity production, labor migration, sale of non-productive assets), proceeds to disposal of productive assets (sale of livestock, sale of

agricultural tools, sale or mortgaging of land, credit from merchants or moneylenders, reduction of food consumption), and ends with destitution and distress migration. Distress migration has been shown to be an important means by which famine spreads across space (Cutler, 1984; Kumar, 1990), and for this and other reasons has previously been characterized in most analyses as an entirely negative consequence of famine.

As indicated by Corbett's model, destitution is for many the inevitable outcome of famine, and distress migration its signal symptom. In contrast, Wood and Knight (1975) hypothesized that distress migration might actually be a "strategic withdrawal," and Jodha (1975) suggested that a final stage in the temporal progression of famine might entail return migration, recovery, replanting, and reconstitution of reserves. Burton et al. (1978) considered migration to "new lands" to be an effective strategy for "modifying" famine conditions. This research demonstrates, at least in the context of case studies, that out-migration during famines is not inevitably a step toward pauperization. The data show that out-migration is not always permanent, that migrants maintain access to farmland, and that some migrants have achieved impressive levels of prosperity at their destinations.

The Ratchet Effect

The ratchet effect is a concept that presupposes the differential impacts of famine on different socioeconomic groups and the irreversibility of Corbett's stage two and stage three coping strategies. For those who accept the validity of the ratchet effect, the "sell cheap, buy back dear" character of famine/post famine transactions means that households that sell productive assets have little hope of regaining them. According to this concept, famine enhances extant patterns of inequality because it is the rich who buy and the poor who sell.

This study contends that migration during famine is a means of escaping the purported ratchet effect. Watts (1983:464) stated that during the early 1970s famine "many thousands in Nigeria were quite literally forced to abandon their homes." But instead of "liquidating their Lilliputian assets," perhaps some of these farmers, through strategic withdrawal, were able to maintain them. Perhaps others, through permanent out-migration, secured new and even better assets in "new lands."

Watts's (1983) data on famine impacts in one Northern Nigerian village appear to demonstrate convincingly the ratchet effect. Of household heads who in 1973-74 resorted to labor migration, borrowed grain or money, sold domestic assets, pawned farmland, and sold farmland, a disproportionate number were from the lowest of three socioeconomic strata. The households that migrated were

also from this poorest group. On the other hand, household heads of the wealthiest stratum hired labor, sold grain, lent grain or money, and purchased assets, including land.

In attempting to generalize these findings, Watts referenced Jodha's (1975) research in semiarid Rajasthan, India. Jodha showed for a sample of 15 poor farming households how six drought-induced famines from 1939 to 1964 caused the progressive disposal of land and livestock and forced increased participation in wage laboring. He also showed in monetary terms the magnitude of the sell cheap - buy back dear dilemma; from a year of dearth to a subsequent normal year, prices of commonly sold assets increased 50 to 300 percent. As a consequence, only a small fraction of depleted assets were recovered during this normal year. The most convincing evidence for the ratchet effect are records and interview data from three villages that document drought-caused transfers of land from the poor to the relatively wealthy over a ten-year period. Despite the relevance of this aspect of the Rajasthan study to Watts's model, other information in that study suggests that out-migration by families may be an important strategy for maintaining productive assets, especially livestock. Such migrations are practiced mostly by small landholders, are of several months duration, and cover distances as great as 500 kilometers. The efficacy of migration as a famine coping strategy depends on opportunities for employment or sharecropping and the condition of pastures in the

destination areas. During the post-drought year, Jodha did not collect data on families that had migrated, so the extent to which migration enabled them to maintain their productive assets and recover from famine is not demonstrated.

Mortimore (1989:192) argued that in Northern Nigeria the ratchet effect has yet to be convincingly demonstrated "from the longitudinal micro-studies of interpersonal transactions that alone would settle the question whether mechanisms for economic recovery, which do exist, are ever effective enough to balance it in the medium term." These mechanisms for recovery are embedded in what Mortimore calls "resilience," the bases of which are access to farmland, spatial diversification of economic effort, and mobility. This mobility is seasonal migration, or circulation. But perhaps the form of migration depicted as distress migration in the models of the temporal progression of famine might actually be another facet of resilience.

The Dissertation in Outline

The next chapter begins with a general description of Hausaland, an ethno-linguistic region occupying much of the central Sahel and Sudan ecological zones of West Africa. Then the physical and human geography of the two Hausaland localities where I conducted field research – the Sahel study area, at c. 13°45' N latitude, and the Sudan study area, at c. 11°15' N latitude – are described in detail. In the remainder of chapter two I discuss data reliability vs.

representativeness, the central problem of social science field research; the approaches other researchers have developed to contend with this problem; and the field methods that I developed and employed.

Chapter three is a review of the literature on famine and famine-related migration. The issues considered are: 1) the differences between the Western and African definitions of famine; 2) the ultimate and catalytic causes of famine; 3) spatial variations in vulnerability to famine; 4) the progression of famine through time; 5) famine-related migration as a means by which famine zones expand; 6) famine-related migration as a means by which disease and death spread across space.

The topics of return migration and recovery from famine have never been addressed. Consequently the time scale over which these processes might unfold is not known. I therefore had to develop in chapter four a twentieth century chronology of famine and environmental change for northwestern Nigeria and the Sahel study area. This chronology results from a synthesis of: 1) information provided by groups of elders in several villages and hamlets; 2) the available monthly and daily rainfall series; 3) information from archival documents. Chapter four also elucidates spatial variations in the incidence of and vulnerability to famine, and demonstrates that the catalytic causes of famine are more complex than previously thought.

Chapter five examines livelihood systems in the Sahel study area. Farming, integrated with livestock rearing, is the preponderant food production system. Most farmers are not able to provision their families from their own production for an entire year. The chronic lack of food self-sufficiency and, as is demonstrated for the years 1987-89, the considerable interannual variation in levels of food self-sufficiency, require that families earn incomes from non-farm economic activities. These constant forms of coping are the bases for famine coping strategies, including migration.

Chapter six answers the two principal research questions in the Sahel study area. The emphases are famine-related permanent out-migration and return migration by refugees. Data on immigration to study area villages during famines are also presented. These three types of migration events are analyzed for each famine in the twentieth century chronology. Migration data for the 1983-85 famine are augmented with data on coping strategies, asset liquidation, and other famine impacts. Supplementary data for famines that occurred prior to the 1980s include reports of recourse to wild or famine foods.

Chapter seven answers the two principal research questions in the Sudan study area. After a brief discussion of livelihood systems, the area's settlement history is examined with an emphasis on the longstanding links between the Sudan and Sahel. Research in communities populated

entirely or in part by refugees addressed the issue of recovery from famine. Data on refugees' return migration from the Sudan study area are presented.

The final chapter summarizes the results of field research and concludes that the continuum model is inaccurate and deterministic. I then discuss the significance of this study for famine early warning systems and for rural development policy in West Africa.

Summary

Fieldwork was focused by the two principal research questions regarding return migration and the status of refugees who remain permanently at their destinations. The discovery that return migration has occurred, and that other famine refugees have successfully rebuilt their lives in new lands, would challenge the validity of the ratchet effect and refute the prevalent view of distress migration as the end-point in a process of destitution. Return migration would also indicate that the cyclical process of desert-edge regeneration continues as a result of short-term climatic ameliorations.

That refugees are capable of achieving prosperity without the assistance of governments and international aid organizations has major implications for agricultural development initiatives in West Africa. A better understanding of famine-related migration is also critical for effective famine early warning systems.

CHAPTER TWO: FIELD RESEARCH: SITES AND METHODS

This chapter discusses Hausaland and the two areas within this large territory of West Africa where I undertook field research. The physical and human geography of the semiarid Sahel and sub-humid Sudan study areas are described in detail. Because the Sahel study area has a long history of famine and population mobility, research there focused primarily on famine impacts and especially out-migration. In the Sudan study area, fieldwork sought answers to the question concerning the status of people who have migrated permanently from Sahelian villages during famines. Virtually no information about the Sudan study area was available from published sources.

A discussion of data reliability vs. representativeness, the most difficult methodological problem in social science research, is followed by a review of selected researchers' approaches for contending with it. The tentativeness of the interview and the resulting data is discussed, as well as the sensitiveness of famine impacts and especially famine-related migration. Frequent informal interviews, formal interviews with both groups and individuals, and interviews with local experts were the main research methods employed in this study. In both study areas research was conducted in several settlements.

Hausaland

The general locus of field research is Hausaland, an ethno-linguistic region encompassing south-central Niger and most of northwestern and north-central Nigeria (Figure 2.1). The home of perhaps 40 million Hausa-speaking people, the landscape is nearly everywhere a gently undulating plain broken only occasionally by inselbergs. According to Hill (1972) rural Hausaland is unique in West Africa, for nowhere else on the sub-continent do such vast tracts of permanently cultivated, manured farmland exist.

While its population possesses a remarkable degree of linguistic, religious, and cultural homogeneity, Hausaland is a region of considerable climatic and environmental diversity. Northernmost Hausaland extends beyond 15°N latitude into the southern Sahara; the southern boundary is somewhat arbitrarily put at about 10½°N in a well vegetated sub-humid ecological zone. Excepting areas under orographic influence, the rainfall gradient is among the steepest in the world. Along a 500 kilometer south to north transect, average annual rainfall deteriorates rapidly from approximately 1200mm to less than 250mm, the theoretical lower limit for rainfed agriculture. The inter-annual variability of rainfall along this transect is also remarkable, from 20 percent in the far south to over 50 percent in extreme northern Hausaland.

Several systems for delimiting the ecological zones of West Africa have been offered. To simplify, one might state

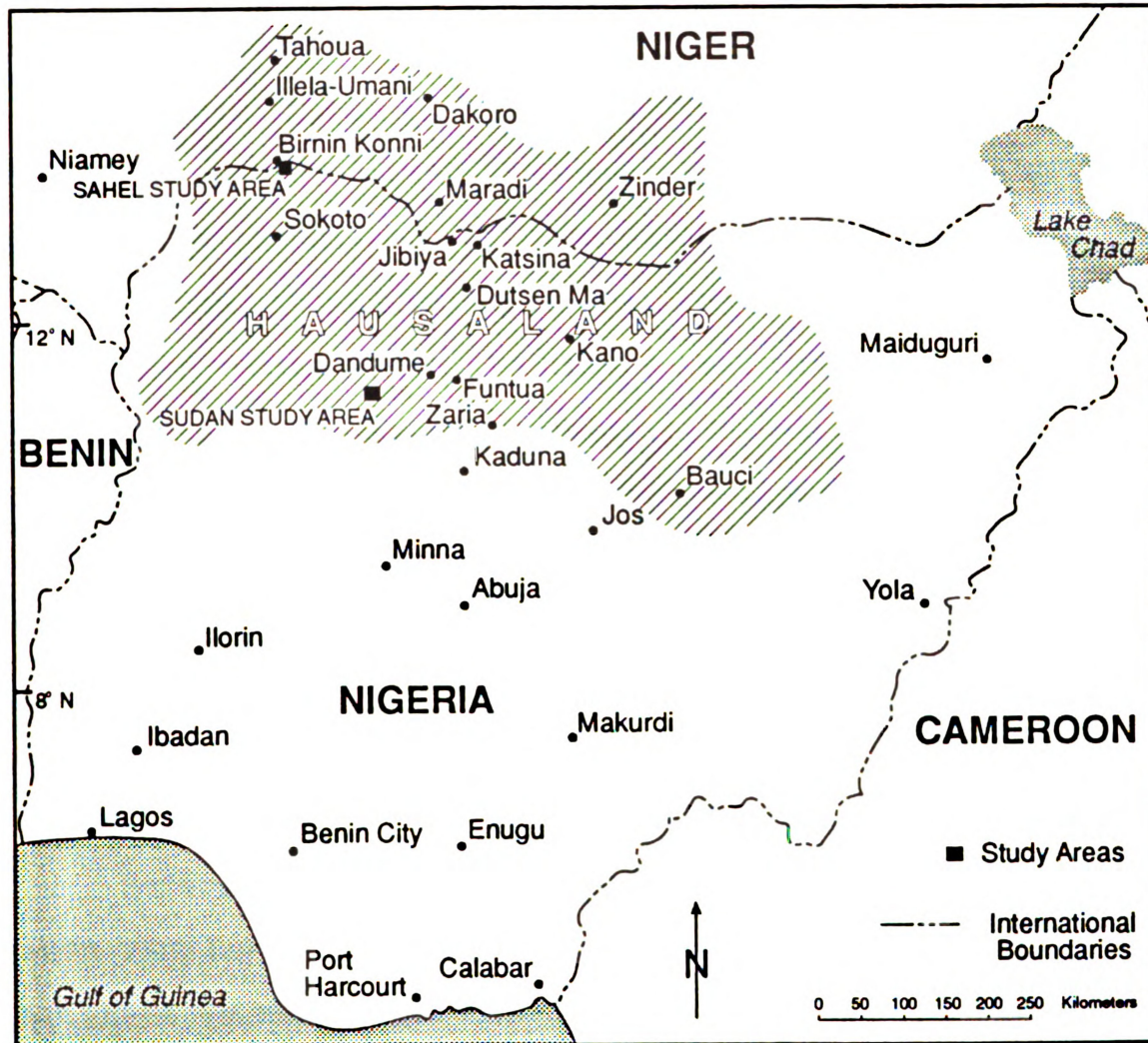


Figure 2.1: Nigeria, Hausaland, and the Two Study Areas

that the southern half of Hausaland is situated in the sub-humid Sudan zone, the northern half in the semiarid Sahel, and the northern and southern margins penetrate, respectively, the Sahelo-Saharan and Soudano-Guinean ecological zones.

This ecological diversity, and the substantial climatic variation characterizing the agriculturally marginal north, suggest that Hausaland would be an appropriate region for investigating this study's two principal research questions: 1) After a famine ends, do farmers that migrated in distress return to their villages of origin? 2) Should they not return, then what becomes of them? Within Hausaland should be found both the origins and the destinations of famine migrants. If return migration does indeed take place, it should be detected in the Sahel; farming families that do not return would most likely be found in the Sudan.

My decision to work in Hausaland was also a pragmatic one. Before embarking on field research I had studied the Hausa language formally for three years. I was also fortunate to have visited Hausaland previously on three brief occasions, so I had more background to build upon there than in most other regions of Africa. Practical considerations limited the research to rural areas in Nigerian Hausaland, yet many of the resulting data pertain to Niger.

Sahel Study Area

According to many maps published during the 1970s, the Sahel zone existed in Nigeria only in far northeastern Borno State. Farther west, in Hausaland, the Sahel was depicted as lying entirely within Niger. Most recent assessments indicate that Sahelian conditions extend much farther south into the northern tier of Nigerian states, viz., Sokoto, Katsina, Kano, and Borno (personal communications, faculty of the Arid Zone Study Center, University of Maiduguri, 1988; see e.g. Olaniran and Sumner, 1989).

The Sahel study area comprises several villages in Illela Local Government Area (LGA), Sokoto State (Figure 2.2). As one of the northernmost localities in Nigeria, at c. 13° 45'N latitude it is situated farther north than Niamey and Maradi, and farther north than those regions that collectively contain a majority of Niger's population. All of the study villages are located within 15 kilometers of the international border. Before 1989 Illela LGA was a part of Gwadabawa LGA; Gwadabawa town, the headquarters of the District Head (Uban Kasa), Sarkin Gobir of Gwadabawa, remains the seat of traditional authority. A tarred road connects Birnin Konni, Illela, Gwadabawa, and Sokoto.

The Sahel study area might be considered to be on the periphery of the Sokoto Close Settled Zone (CSZ) or, according to Abdu (1987), within a northern extension of this zone. Population densities are significantly higher than in other regions of northern Sokoto State, but do not

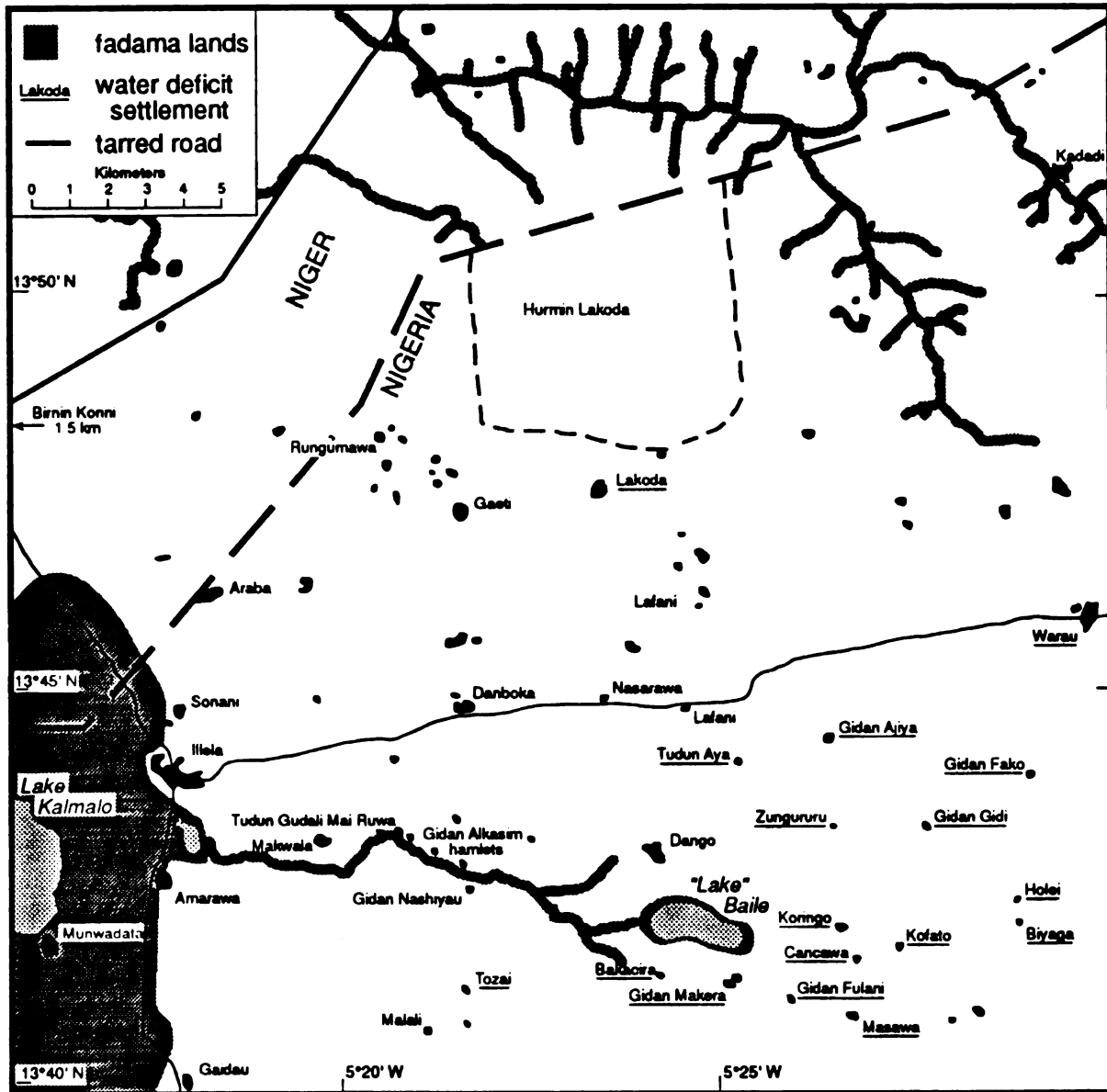


Figure 2.2: The Sahel Study Area

attain the levels observed in the core of the CSZ surrounding Sokoto city. Land shortage has been reported as a major problem since the 1950s (Prothero, 1957), and Udo (1971) included parts of Gwadabawa and Illela LGAs in one of Nigeria's nine areas of chronic food deficit. The colonial tax burden, and the inability of a large proportion of farmers to produce enough food to feed their families, have contributed to widespread participation in dry season migration (Swindell, 1984).

The available publications indicate that at least four famines have occurred in the Illela area since 1950. A mid-1950s famine was reportedly followed by a localized crisis in 1959. The famine of 1966 was also supposedly local in scope (Abdu, 1975; Watts, 1983). According to Van Apeldoorn (1978), harvests in both 1973 and 1974 were near-total failures.

In addition to the region's Sahelian setting, its rather long history of population mobility, and its relatively recent experiences of famine, there is another reason for selecting for study villages in Illela LGA. In 1975, Peter Abdu conducted research for his undergraduate thesis on "drought-caused migration" in villages near Illela town. He reported that 12 of 13 villages had experienced mass emigration during the early 1970s crisis, and in three villages established that out-migration by entire families had occurred. It therefore seemed that Illela LGA would be an excellent locale for attempting to determine whether

refugees from drought and famine return to their villages of origin during subsequent phases of climatic amelioration.

Natural Features

The relief is typical of the gently rolling plains of Hausaland. The average altitude is about 230m above sea level (ASL). The highest inselbergs are near Lafani (380m ASL), Dango (370m ASL), and Tozai (350m ASL). Numerous smaller inselbergs dot the landscape.

Soils. In the uplands, or tudu, soils have formed atop fixed Pleistocene dunes. When traversing these tudu areas on foot, one usually experiences a sensation similar to walking on a sandy beach. Farmers distinguish at least three upland soil types. Sandy rai-rai soils, known elsewhere in Hausaland as jigawa, predominate. Of secondary importance are the sandy lisso soils, whose particles are finer than rai-rai. According to informants, lisso "does not like" abundant rainfall, and under some circumstances yields may actually be higher in droughty years. Debagi and fako are terms generally applied to hard, rocky soils. Although fako has been translated as barren land or wasteland, good yields are frequently realized with favorable rainfall. For some farmers, fako and debagi are synonymous. Others consider debagi to be less rocky, and therefore more productive, than fako. Boringo is another local term for rocky soils. Fako and debagi are far more common in the eastern, higher parts of the study area. In the lowlands, fadama are darker, clayey, moisture retentive

soils often suitable for both dry and wet season cultivation. Fadama are generally restricted to lake perimeters and riverine areas, but may also occur in depressions, and in and near ephemeral or dry stream and lake beds. Copious rainfall causes crop failure most readily on bargaji, a lighter-colored variety of fadama soil.

Hydrology. Two lakes, Kalmalo and Baile, are the study area's most important hydrological features. Both lakes are highly significant to the basic maintenance of households and in local economies. Fadama lands, extending from Lake Kalmalo's eastern and southern shores, cover an area of approximately 15 square kilometers. A species of small, black catfish and one talapia species constitute an impressive fishery in this lake, the depth of which varies seasonally from two to three meters. Although the fadama lands adjacent to the very shallow (< 1 meter) Lake Baile are relatively small, it is a crucial source of domestic water for Dango, one of the largest villages in the study area, and, at least during the dry season, for about a dozen other settlements. Other study area settlements bereft of a perennial water source rely on wells in neighboring communities (Figure 2.2). The water course depicted in the south-central sector of Figure 2.2 was a rafi, or small stream. Water has not flowed in this valley, or occupied the tiny lake bed at its western terminus, since 1983. A swath of fadama lands centered on the streambed is on

average about 60 meters wide. The hydro-pedological situation is reportedly similar along the water courses portrayed in the northeastern portion of Figure 2.2.

Vegetation. Probably more than 90 percent of the Sahel study area is farmland. The approximate extent of a hurmi, or livestock grazing reserve, is depicted in the north-central sector of Figure 2.2. Cultivation on this parcel, known locally as Hurmin Lakoda, has been prohibited by local authorities since before the colonial intervention. The other major uncultivated parcel, known as Gandun Gwamnanti or Dajin Gwamnanti (government reserve), is situated to the southwest of Lake Kalmalo and is not included in Figure 2.2. Burtali, or livestock right-of-ways, lead from most study area settlements to Hurmin Lakoda and Gandun Gwamnanti. In the uplands, small arable uncultivated zones are sometimes found along the boundaries between the karkara (farming areas) of neighboring villages.

Natural vegetation in the study area is typical of the southern Sahel. Copses of trees are confined to Gandun Gwamnanti and stream valleys, where the most important fruit tree is the gwaiba (guava). Elsewhere trees usually stand alone. Shrubs and grasses occur in the margins of karkara, along farm boundaries, in and near irrigation ditches on the Lake Kalmalo fadama, and in the few other uncultivated zones, including those on the outskirts of villages.

(Appendix 1 presents species of vegetation in the study

area, and their reported and potential uses to the local population.)

Fauna. The number of fauna species and their populations are rather low in the study area. Antelope and giraffe have not been sighted since the 1960s. Perhaps only the avifauna are sufficiently diverse to hold the interest of wildlife enthusiasts. Burgu (giant bush rat), zomo (rabbit), and damo (iguana lizard) make only occasional contributions to diets. In the western portion of the study area, apparently only one man seriously pursues hunting and trapping as an income-generating activity.

Climate. Figure 2.3 summarizes the study area's basic climatic parameters. Rainfall data for the years 1933-91 were recorded at the Birnin Konni meteorological station, just across the international border in Niger. The temperature data are from Niamey, which is at nearly the same altitude (200 meters) and latitude (13°29'N) as Illela. (Appendix 2 presents a range of terms for Sahelian atmospheric phenomena, and imparts an appreciation for the ways in which Hausa-speaking people discuss weather and climate.)

On average, all but 50mm of the mean annual 530mm of rainfall occurs during damuna (June-September), the critical season for food production. Several characteristics of Sahelian rainfall would surprise an observer accustomed only to mid-latitude climates. More than 90 percent of rain events are nocturnal. Emanating almost always from the

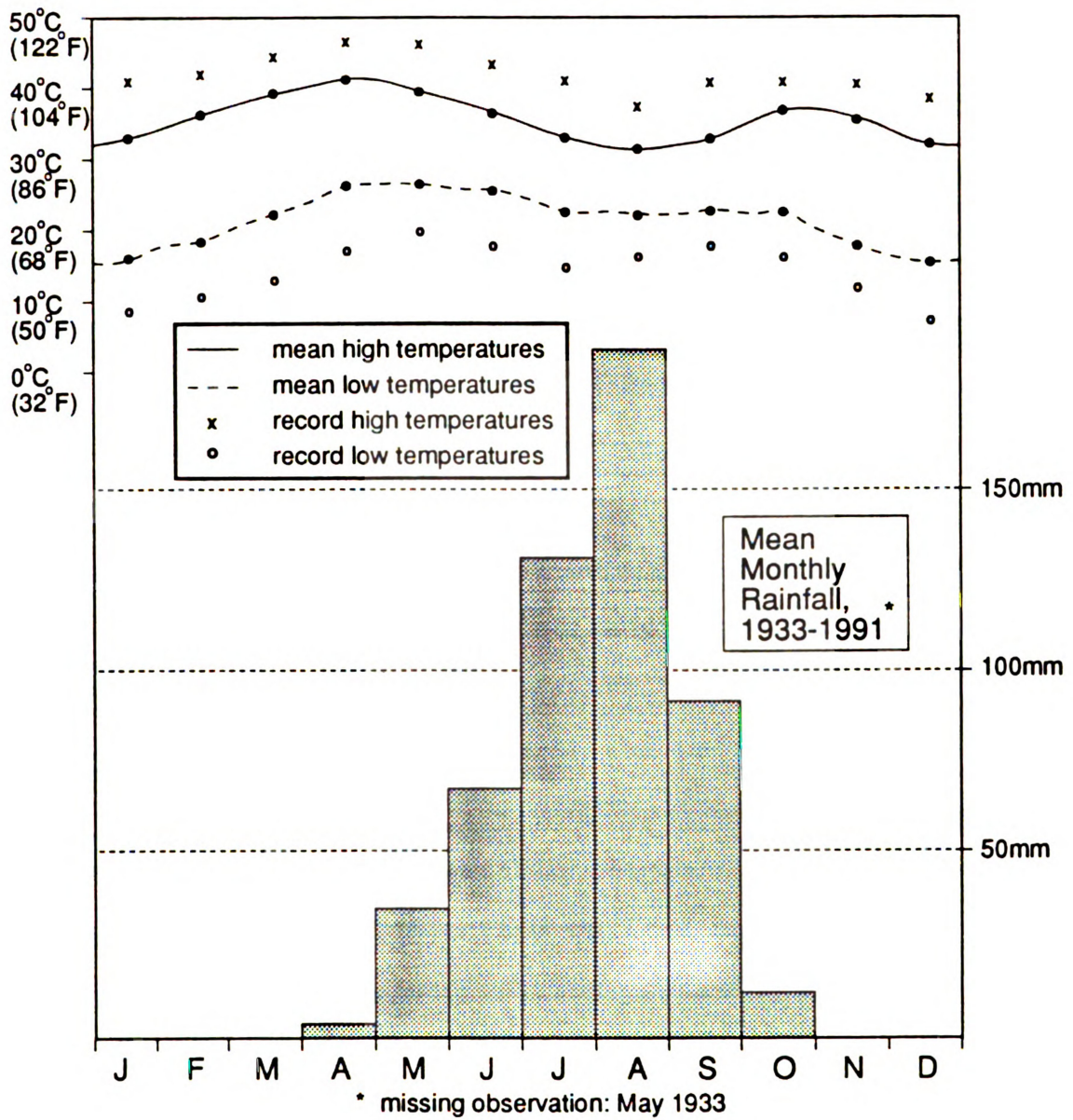


Figure 2.3: Rainfall and Temperature in the Sahel Study Area
Sources: Hulme (1992); Sivakumar (1986)

east, a large majority of rain events are preceded by incandescent displays of lightning, thunder, and very strong, even violent winds. The ensuing rainfall is often intense and generally lasts for less than two or three hours. The gentle, widespread, all-day or all-night rainfall so common in temperate regions is rare in the Sahel. Extreme spatial variation in the incidence and amount of rainfall is another distinctive characteristic. Often, one locality receives torrential rainfall while other settlements only a few kilometers away receive little or no precipitation.

By the malka phase (August-September) of an adequate rainy season, the Saharan borderlands have been transformed into an astonishingly verdant landscape. The panorama from atop an inselberg inspires awe at the productivity of the erstwhile ergs. Yet with its cloying humidity and heat, damuna is the most uncomfortable season. One sweats almost constantly; even a brief errand on foot in the evening generates rivulets of perspiration; sweating during sleep is normal. Flies are profuse and annoying during the daylight hours (although most people accept this good-naturedly as a tentative sign of an above-average harvest). At night, frogs croak in large puddles, mosquitoes pullulate among the dense crop growth, and fire ants (tarmani) sometimes invade people's sleeping quarters.

October is a month of transition. Rain is not uncommon during the first week or ten days of the month. During some

intervals the southwest monsoon is perceptible, while at other times a weak hunturu, the northeast wind from the Sahara desert, hints of the upcoming cold and desiccation. Perhaps the concomitant diurnal variations in atmospheric pressure, coupled with high temperatures (October is the second annual period of temperature maxima), contribute to the headaches, earaches, and general ill-humor that often affect many individuals.

Rani, the dry season (c. November – c. May), is divided into two nearly equal periods. For most people, dari, the cold season (c. November – c. February), is the most comfortable and enjoyable. Low relative humidities are certainly partly responsible for a surge of energy and a sense of well-being. Hazo, a mist or drizzle, occurs infrequently and is generally the only form of precipitation during the cold season. Insect populations markedly diminish. Blankets are imperative during the chilly nights. The earth progressively dries, natural vegetation withers, and crop stubble peppers the upland farms. The hunturu is sometimes strong enough to produce audible effects at night. As the cold season progresses, this wind becomes increasingly laden with fine Saharan dust, which produces a thin veneer on most surfaces. Dust coats faces and invests the hair, so that younger men, at first sight, may be mistaken for hoary elders. Spreading clothes to dry out-of-doors is consummately counter-productive. By mid-December it is easy to understand how European colonial officers

without knowledge or experience of rainy season conditions could have mistaken the Sahel for an ever-encroaching Sahara desert.

Bazara (c. March – c. May) is the annual period of temperature maxima. Low relative humidities in March and April, and the near-total absence of insects, make these months bearable. Sleeping under the stars is frequently very enjoyable. But the parched landscape appears most forbidding. Winds in March and in early April are from the east; afterwards, the southwestern monsoonal flow gradually becomes established. Although three rain events are typical in May, bazara frequently continues into June before another rainy season truly begins.

Human Features

Illela is the largest, and in terms of its population and economy, the most diverse settlement in the Sahel study area. A very vibrant Sunday market is the town's most prominent attribute. The marketshed includes Niamey, Tahoua, Sokoto, and areas to the east in both Niger and Northern Nigeria. Like most major markets in the Sahel, Illela's offers an extensive range of goods and services. The Illela market has an air about it similar to what one might imagine of a Medieval European carnival, or perhaps expect of a contemporary American county fair.

Illela probably encompasses more than one thousand habitations. These range in quality from the large two-story cement block house constructed by one of the

wealthiest men in northern Sokoto State, to the sorghum-stalk huts, located just across the road, that serve as shelter for several families of fair-skinned Tuaregs. A large majority of habitations are typical Sahelian compounds made of clay bricks. Most of their male inhabitants would cite farming as their primary occupation.

Illela's Ibo community was constructing a large church during the years 1988-90. Mosques are numerous and vary widely in their size and material composition. A health clinic exists, but patients are usually required to procure medicine from one of the town's pharmacies. Illela also has a courtroom, a police station, primary schools, a government girls' secondary school, and the offices of the customs and immigration services. The Sokoto State electric power grid includes Illela, but service is limited to a few hours one or two days per week. The motor park on the south side of town is the hub of the study area's transportation system. From here one can catch a taxi (usually a Peugeot station wagon, a micro-bus, or a one-quarter ton pick-up truck) bound for Sokoto, Gada (the first large town to the east of the study area), or Birnin Konni, Niger. Motorcycle taxis convey passengers to some of the study area villages not situated on paved roads.

Warau and Kadadi are, respectively, the study area's second and third largest settlements. Both have government schools, a few shops, and small markets. Warau has a health clinic. But in comparison to Illela, these settlements are,

in the opinion of most informants, no more than expansive villages.

Compact villages of approximately 30 to 300 compounds are the most pervasive form of human settlement in the Sahel study area and throughout northern Hausaland. Several of the larger villages in the area have small ancillary settlements of sedentary or semi-sedentary Fulani or Buzu people. Hamlets comprising fewer than 30 compounds are not quite as numerous as the villages. One or two compounds, standing in relative isolation, are occasionally encountered as well as the base camps (mashekari or ruga) of other Fulani agro-pastoralists. An analysis of the Sahel study area's settlement history must take into account the violence of French colonial conquest, the differential tax burdens in colonial Niger and Nigeria, flight from French forced labor, the movements of pastoral peoples, and twentieth century famines.

The Sahelian Study Villages

Amarawa

A preponderance of Amarawa's 220 habitations are traditional clay brick compounds. Inside the compounds' walls are shigifa, typically small rectangular buildings with walls and roofs of clay. Kwano, or metal sheeting, serves as roofing material for perhaps 10 percent of these structures. Only about one-fourth of the compounds have a zaure, an entrance room in which the household's men receive visitors. Five compounds in Amarawa are considered gidan

zamani ("modern" compounds) because their walls and rooms are made of cement or a cement-clay mixture. The walls of approximately 20 compounds are made mostly, or entirely, of kara (sorghum stalks) or zana (a large coarse mat woven from the grass gamba). Some shigifa without enclosing walls are inhabited by widowed or divorced women. Several teenage boys who prefer to live some distance from their families have constructed shigifa known as dakin samari. Clay granaries, or rufewa, are the most numerous structures in the village. More than one half of the rufewa are situated outside the walls of compounds.

Amarawa is well endowed in domestic water sources. One hundred meters is the greatest distance anyone must negotiate to retrieve water, and a few compounds even have wells inside their walls.

Rumfa, which are sheds made of guinea corn stalks and/or grass mats, have several functions. Two of Amarawa's tailors set up their sewing machines under these structures, and a well built shed shields the one functioning grain-grinding machine from the elements. A large, centrally located rumfa serves as a gathering place for younger men. The village's rather informal motor park has a rumfa for storing a barrel of gasoline. Here during the early morning and late afternoon hours four or five young men gather to work on their motorcycles. For the sum of one Naira they will usually provide taxi service to Illela.

Four motorable roads of compacted soil run through Amarawa. The main road, trending north-south, nearly bisects the village. The three other roads, two of which form the boundaries of Amarawa's unguwa (wards), have an east-west orientation. Narrow alleyways (kwarkwada and lunu) wend their way among the compounds of the three unguwa, lending a labyrinthine quality to some sections of the village.

For purposes of tax collection, censuses, and elections, unguwa are the smallest demographic units in Northern Nigeria. Amarawa's smallest ward, situated at the northern end of the village, is known as unguwar dogarai (the ward of the village head's "bodyguards"). At the opposite end is unguwar tudu ("the neighborhood of the hill"), which is recognized as the village's newest section. Unguwar tudu and unguwar dogarai each has a ward head, an older man who occasionally is called upon to settle disputes but whose primary responsibility is to collect annual taxes. (Haraji, the head tax, was ostensibly ₦20 for every male 18 years of age or older; jangali, the livestock tax, was ₦2 per head of cattle and 50 kobo for each sheep or goat). Tax collection in the largest, central unguwa was handled by the village head.

Situated near the northern and southern margins of Amarawa, fili, or open spaces, are centers of social interaction and village commerce. The most prominent commercial activity is the prepared foods trade. Children

normally conduct this trade on behalf of their mothers, who usually remain inside the compounds. Rice and cowpeas, boiled chick-peas, kosai (fried cakes made of cowpea flour), and sweet sesame seed balls are usually available in the morning. The most common evening fare is tuwo (paste) made of red sorghum, served with a baobab leaf- or okra-based sauce. Small fried fish are almost always available, as is freshly grilled goat meat and kilishi, a kind of beef jerkey. Perhaps the most important staple food, fura, a millet and milk porridge, is rarely sold in Amarawa. The availability of most other prepared foods in these micro-markets is strongly seasonal. Carrots are sold in March; corn is roasted to order in July; boiled cassava, taro, and sweet potatoes are available during most of the rainy season; roasted locusts may be purchased after the harvest. Guavas, oranges, mangoes, and sugar cane can also be had in season. Snacks such as roasted peanuts and 'yar unguwa (clumps of boiled, seasoned tafasa) are often sold by young girls who circulate in and near the fili. A few older men sell cola nuts and small measures of grain and cowpeas. Each fili has two or three petty traders ('yan tebur) who display miscellaneous items on small tables. Their stock usually includes cigarettes and matches, hard candies, sugar cubes, assorted cookies and crackers, salt, Maggi cubes, bar soap, small quantities of powdered laundry detergent, batteries, and mosquito coils. One young man prepares and sells mugs of coffee or tea from a table.

From about seven until eight A.M., and again for about an hour before magariba (sunset) prayers, as many as one hundred men and children gather at these fili. Children play, sing, and sell the prepared food. The men joke, discuss local affairs, their farmwork, or other economic activities. Many of these men, and a few of the children, buy their meals and eat, seated in groups, on the margins of the open spaces.

Village commerce is not limited to the two fili. Fruit, fish, cola nuts, and sometimes firewood are sold in front of a few compounds, usually by older men and children. Items not normally offered for sale out-of-doors, such as kerosine, onions, and other condiments, can be obtained by sending a child to purchase them from within one of the compounds. Commerce conducted from within or in front of compounds or at the micro-markets represents only a small proportion of the available income-generating activities. Other sources of income will be discussed in chapter five.

Tudun Gudali Mai Ruwa

The settlements known collectively as Tudun Gudali Mai Ruwa are portrayed in Figure 2.4. The name denotes attributes of the settlements' site. The nuclear village and the tiny hamlet to its northwest have been built atop a hillock (tudu). Eleven or twelve years ago water (ruwa) was flowing (gudali) in the small stream (rafi). The streambed and some of the adjacent fadama lands afford opportunities

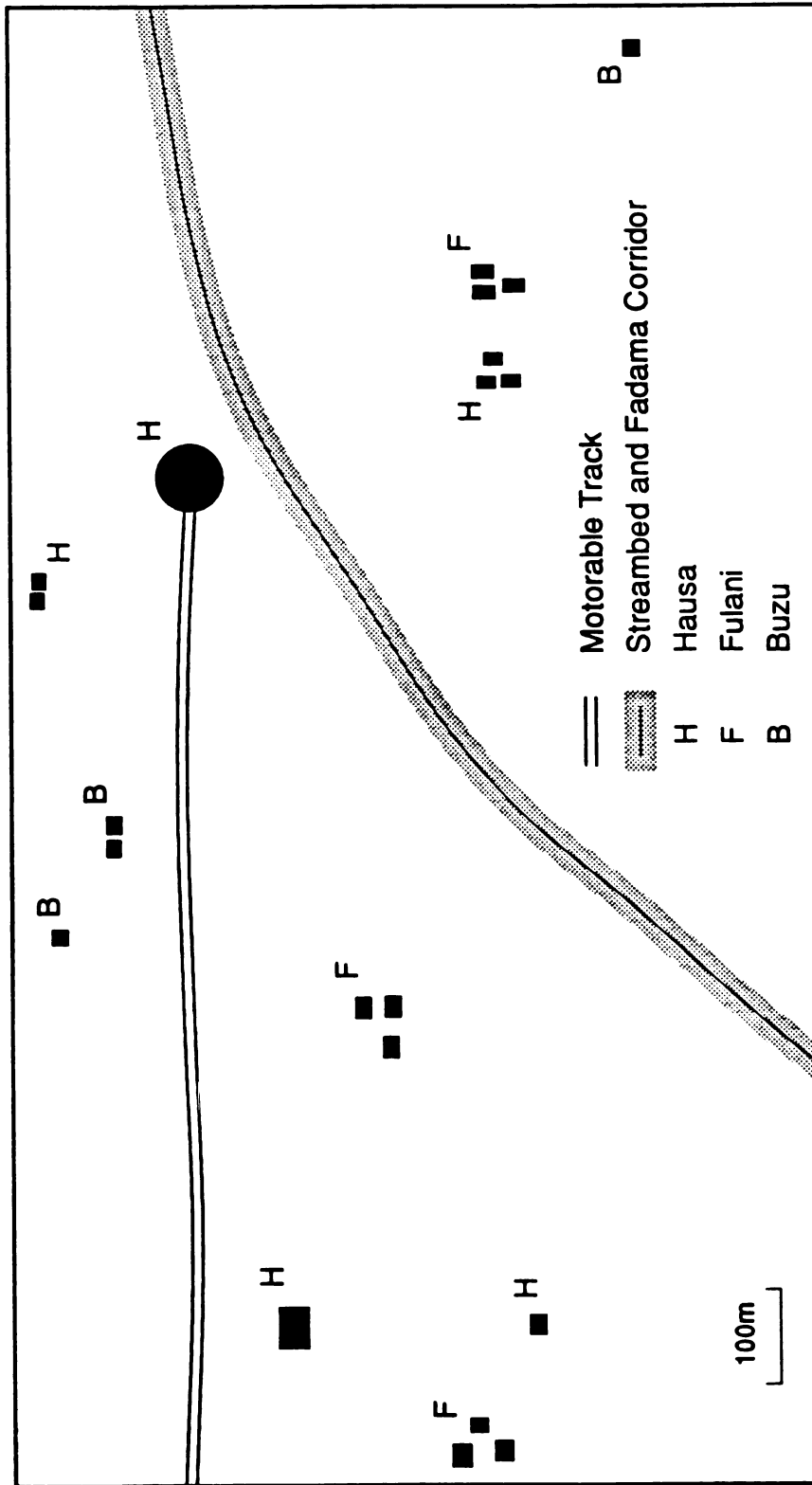


Figure 2.4: Tudun Gudali Mai Ruwa

for dry season farming. Water for domestic uses is perennially available.

The habitations in the nuclear village are approximately 40 in number. Their material composition is considerably less varied than Amarawa's habitations. Neither gidan zamani (cement compounds) nor buka (stalk huts) exist. Two widow's habitations are clay brick shigifa (rooms) without enclosures. All of the other habitations are compounds with shigifa and surrounding walls. Three or four compounds have metal-roofed shigifa; a similar number have rather large sections of their walls patched with mats (zana) or stalks (kara). The numerous granaries are situated inside the walls of compounds.

A large open space (fili) is located near the center of this settlement. Two sorghum stalk sheds (rumfa) on the periphery of the fili provide shelter from the hunturu wind or the midday sun during bazara. Under these structures men often gather to converse while manufacturing tsawo, a three-ply rope. An excellent well with a one meter high cement collar is located at the center of the fili. Nearby the only immediately observable commerce in the village is practiced by one or two meat sellers and one or two petty traders with small tables. Other forms of commerce, including the cooked foods trade, are conducted from within the compounds. Meals usually are not eaten in the open. The main fili is a place for meeting, sitting, and socializing. From here two short alleyways (kwarkwada) lead

among the compounds on the north side of the village. At the end of one of these is a very small fili where a few men gather, making use of unhewn logs as benches.

A marginally motorable road connects Tudun Gudali Mai Ruwa's nuclear settlement to Makwala, the closest village to the west, where on Sundays people often can board a small pick-up truck bound for the Illela market. An unusually large high-walled compound is situated to the south of this road. The other Tudun Gudali Mai Ruwa settlements shown in Figure 2.4 are reached most easily by footpaths. The two Hausa hamlets to the northwest and southeast of the main village both comprise three compounds with solid clay brick walls and shigifa. The three Buzu (Bugaje) compounds to the west, and the one compound situated to the southeast of the nuclear settlement, have clay brick shigifa but are enclosed only partially by sorghum stalks (kara). The Fulani settlements are referred to locally as mashekari or ruga. Although both of these terms connote impermanence, the Tudun Gudali Mai Ruwa Fulani all have well constructed clay brick shigifa. The Fulani shigifa in the southeast settlement are surrounded by clay brick walls, as are some in the southwest quadrant of Figure 2.4. The remainder either have walls of sorghum stalks or are without walls. The single Hausa habitation to the south is a clay brick shigifa partially enclosed with stalks.

Gidan Alkasim and Affiliated Hamlets

The hamlets depicted in Figure 2.5 may be considered a "village area." Gidan Alkasim's headman is, at least nominally, the traditional authority for all four hamlets, and has the responsibility of collecting taxes. The six compounds that constitute Gidan Alkasim have clay brick walls enclosing clay brick shigifa and granaries. Three capacious granaries are situated on the outskirts of the hamlet. Most people in the Sahel study area refer to Gidan Alkasim as Zangon Buzaye because its inhabitants are ethnically Buzu (Bugaje).

The people who live in the northwestern hamlet, Zangon Tsakuwa ("the encampment on gravelly ground"), also identify themselves as Buzu. This settlement comprises about ten compounds, arranged in two parallel rows, with walls, shigifa, and granaries constructed entirely of clay brick. The 15 compounds of the southwestern hamlet, known simply as Zangon Yamma ("the western encampment"), are arranged similarly and have the same material composition. A majority of Zangon Yamma's people are ethnically Hausa; the others may consider themselves Buzu. The eastern hamlet is called Katanga ("compound wall"), or, less frequently, Debagi ("rocky soil"). Its walled compounds, approximately seven in number, are solidly built of clay brick. Three of these are quite large and have entrance rooms (zaure). The people are all Hausa. Sarkin Noma A, Katanga's elderly yet vigorous patriarch, spends most of his days either working

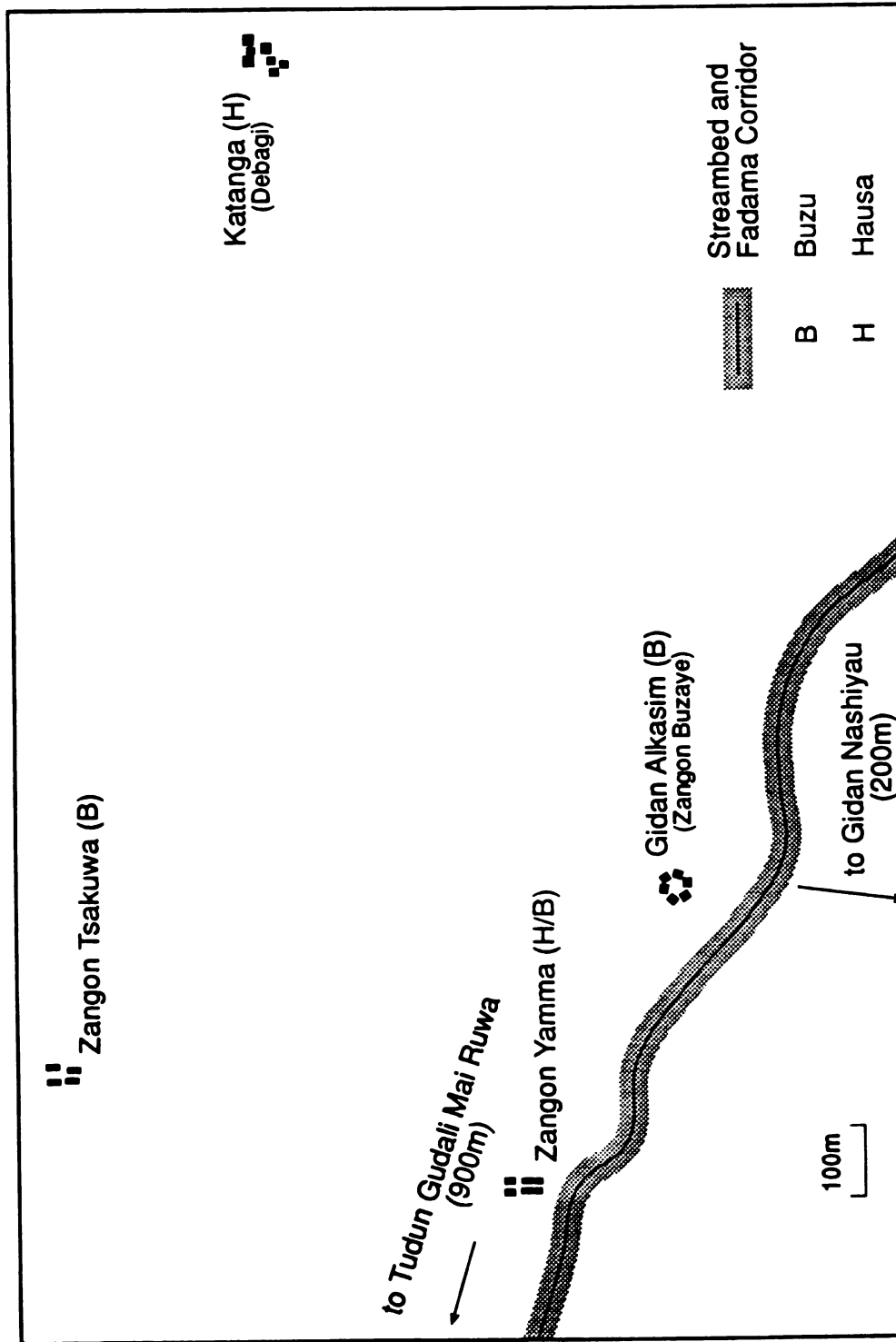


Figure 2.5: Gidan Alkasim and Affiliated Hamlets

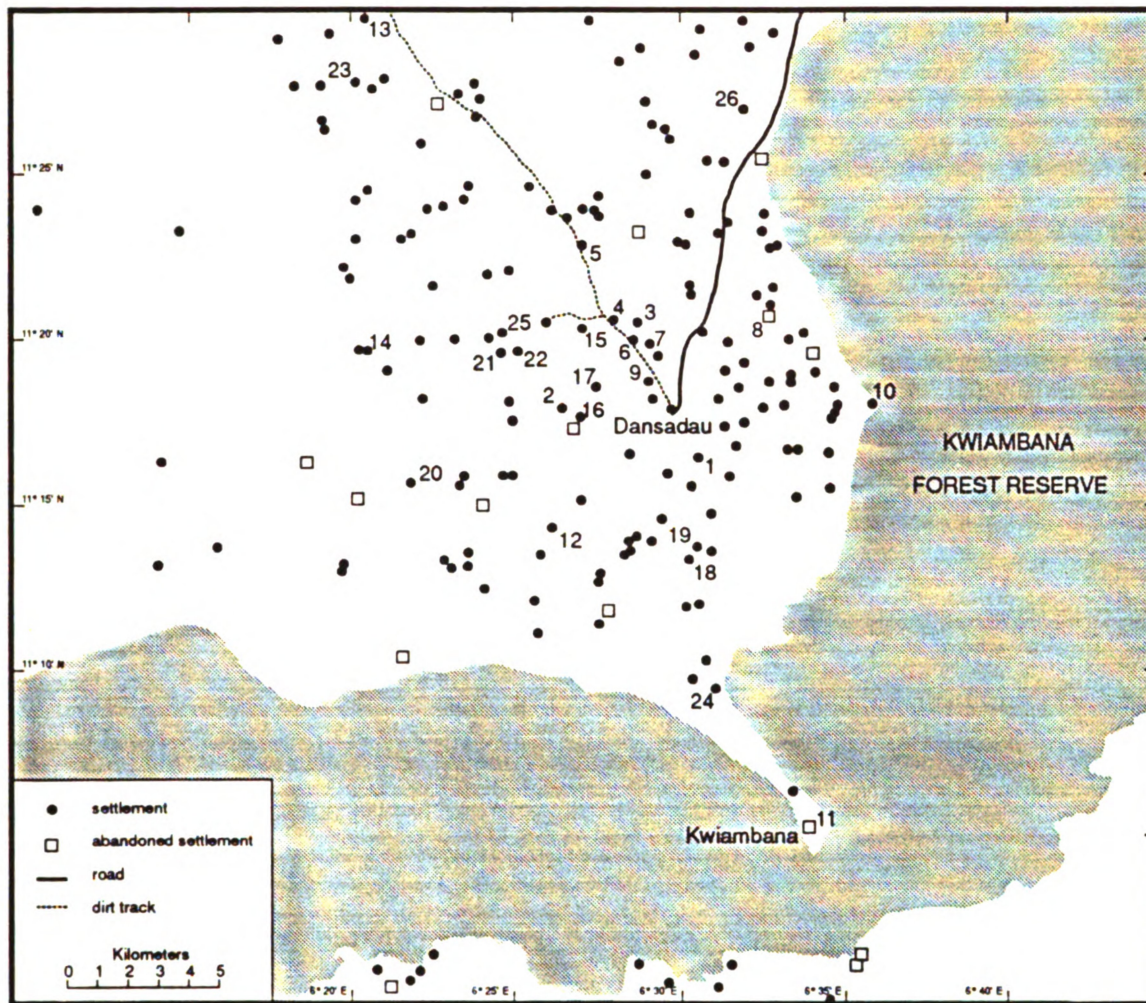
on his farms or camped out, with a calabash of fura, in a sorghum stalk enclosure some 300 meters to the west of the hamlet.

All of the hamlets have small, centrally located fili where men rest and socialize. No commercial activity is readily observable, apart from the occasional meat seller. People usually do not eat in the open. Each hamlet has a small clay brick mosque and good wells. Dry season farming is practiced on parcels in and near the stream bed. A dirt track, used by vehicles to convey people to the Illela market on Sundays, passes near Gidan Nashiyau.

Sudan Study Area

The Sudan study area consists of villages in Dansadau District of Akna LGA, Sokoto State (Figure 2.6). Situated at about 11°15'N latitude, the district is among the more sparsely settled areas of Hausaland. In the southwest Dansadau District abuts Niger State, and in the south and southeast, Kaduna State. Something of an inter-ethnic boundary also exists not far to the south of the study area, where the homelands of the Gwari and Kamuka peoples begin. Based on several criteria Dansadau District is located in the northern "Middle Belt" (Gleave and White, 1969).

In the context of Northern Nigeria, Dansadau is a remote district. Before completion in December 1990 of the all-weather road linking Dansadau to Gusau, access during the rainy season was usually difficult, occasionally



- | | | |
|-------------------------------|-----------------------------|----------------------|
| 1. Maganawa | 10. Karauci | 19. Gobirawa |
| 2. Mai Tukuniya (Gobirawa) | 11. Kwiambana (abandoned) | 20. Baban Doka |
| 3. Han Han | 12. Dan Gurgu | 21. 'Yan Sawaiyu |
| 4. Unguwar Mai Jan Kai | 13. Naduka | 22. Nasarawa (II) |
| 5. Mai Goge | 14. Ruwan Tofa | 23. Randa |
| 6. Nasarawa ('yan kasa) | 15. Tunga | 24. Madada |
| 7. Nasarawa (Rugan Fulani) | 16. Mai Tukuniya Baban Gona | 25. Kufan Dan Bar Mu |
| 8. Unguwar Gwandu (abandoned) | 17. Mai Tukuniya Dan Goge | 26. Marabou |
| 9. Unguwar Barau | 18. Dandala | |

Figure 2.6: Sudan Study Area

somewhat hazardous, and at times impossible. Taxis and other vehicles operated in relays between swollen watercourses, where vigorous young men garnered impressive incomes by conveying passengers and goods across on their heads and shoulders. They are doubtless the only people not entirely pleased with the new road and bridges.

The choice of Dansadau District as the Sudan study area was influenced to a great extent by my research assistant. Mallam Bagudu has an astonishing, almost visceral knowledge of rural Sokoto State. His intuition suggested the strong possibility that answers to my second research question could be found in Dansadau's villages. Information from people in the Sahel study area also contributed to my decision.

Apart from intuition and reports from a few people in Illela LGA, the selection of Dansadau District was otherwise uninformed. This was especially true of the area's recent settlement history. Neither Mallam Bagudu nor I had ever visited this part of Sokoto State, and our colleagues at Usman Danfodio University were not aware of any research that had been conducted there. References in the literature to Dansadau District are few. Usman (1978) and Adamu (1978) briefly discuss the precolonial history of Kwiambana, once a large and important city founded before 1300 A.D. but now almost completely abandoned. The Zamfara valley, to the north of Dansadau District, has been mentioned as a

destination for many seasonal migrants from northern Sokoto State (Prothero, 1957).

Natural Features

The average attitude of this gently undulating land is approximately 510 meters above sea level. Inselbergs having 30 to 60 meters of relative relief are the most distinctive physiographic phenomena.

Soils. Here too a general dichotomy exists between lowland and upland soils. Lowland soils that would be suitable for dry season agriculture are referred to as laka, the Hausa word for clay or mud. A few bogs occur in depressions and near streams. The upland soils are comparatively hard. Jigawa has the highest sand content and the lightest color. Crops do relatively well on this soil even in years with below average rainfall. Damba, a darker, clayey soil, is the most productive soil for sorghum when rainfall is abundant. On the bright red soil jan gargari, high yields of sorghum and millet can also be produced during a good rainy season. Hard rocky soils, such as fako and debagi, are rare.

Hydrology. Numerous streams and four small rivers flow through the study area. Log bridges afford the only means of crossing many of these watercourses during the rainy season. Small ponds are the only other hydrological features. Only a few settlements do not have a perennial source of domestic water.

Vegetation. The Kwiambana Forest Reserve covers about half of the Sudan study area. Outside the reserve, an estimated 25 percent of the land is under cultivation. Large tracts are relatively densely wooded. Acacia, neem, and baobab are the most conspicuous tree species. Guava are the most numerous fruit trees. Other trees of economic and nutritional importance are the shea butter tree (kadanya; Bulyrosperum Parkii) and the wine-yielding palm (itacen bammi; Raphia vinifera). Meadowlands offer grazing for livestock.

Fauna. Wild animal populations, including lions and hippopotami, are reportedly high enough to prevent people from farming in some areas along the margins of the forest reserve. In 1989 a rampaging hippopotamus caused major crop damage, and monkeys are persistent pests. For some men hunting and trapping are important economic activities.

Climate. The people of the Sudan study area also distinguish three seasons: damuna (the rainy season), dari (the cold season, with hunturu, the northeast Harmattan wind), and bazara (the hot dry season preceding the rains). Figure 2.7 presents mean monthly rainfall in Gusau for the years 1942-84. Located approximately 110 km north of the study area, Gusau is the closest station for which a consistent multi-year rainfall record was obtainable. The mean annual total of 962 mm is more than 400 mm greater than in the Sahel study area. The rainy season begins sooner, often at the end of April, and 25 mm is the average for

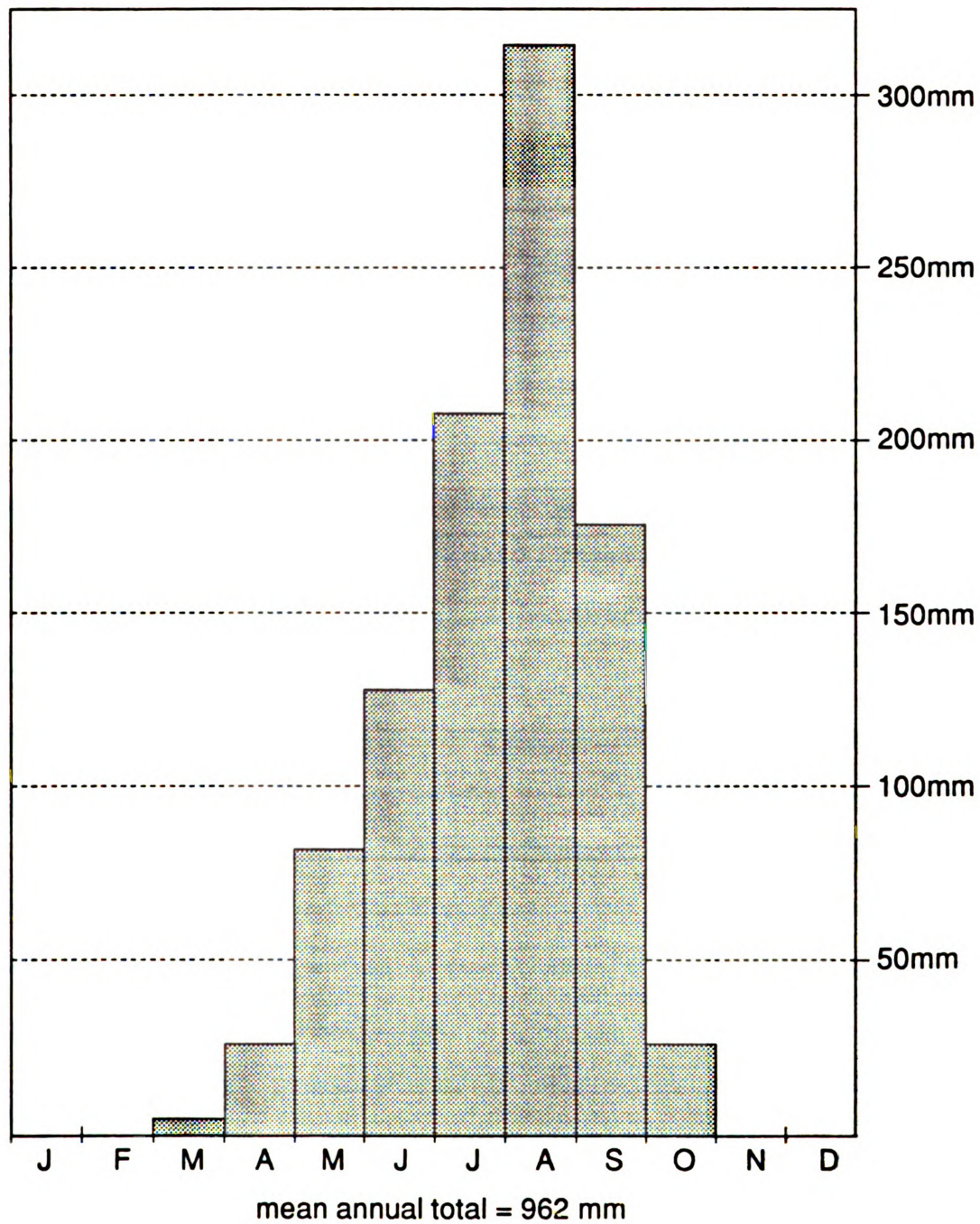


Figure 2.7: Gusau Mean Monthly Rainfall, 1942-1984
Source: Ahmadu Bello University Department of Geography (ND)

October. Both dari and bazara are consequently shorter. Although no other meteorological data were obtainable, bazara and damuna are decidedly cooler and more humid, and the Harmattan season warmer and its winds weaker, than in the Sahel.

Human Features

Figure 2.6 is based on two topographic maps published in 1970 by the Federal Survey of Nigeria. During the period 1970-90, considerable changes in the area's settlement geography have taken place. More new settlements have been established, and probably more have been abandoned, than are depicted. Most of the new settlements are populated by migrants from areas farther north; most, but not all of the abandoned settlements were once inhabited by 'yan kasa, the people indigenous to the area.

Dansadau village, the largest settlement in the Sudan study area, comprises approximately 400 compounds, most of which have clay brick walls surrounding rooms made of clay bricks. The palace of Sarkin Kudu, the district's traditional ruler, is the largest structure in Dansadau. There also exist a courtroom, a police station, a small hospital, a large primary school and a secondary school, a compound for lodging guests, and an office staffed by Malamin Sarki, the traditional ruler's scribe and administrative assistant.

Several motorable roads of compressed soil traverse the village. Along the main thoroughfare, two women cook and

sell food, butchers grill and sell meat, and petty traders display their wares on tables. Various snack foods are available, including peanuts, fruits, and cooked cassava and taro. Fish are conspicuously absent. People do not normally eat meals in the open.

Dansadau's market is held on Fridays. Although it is only a small fraction of the size of Illela's Sunday market, the range of goods available is nearly the same. The livestock section is especially small. A motorpark per se does not exist. In the mornings taxis bound for Gusau and Birnin Gwari (a large town located 40 kilometers to the southeast) wait near the market. Except on Fridays, it may take an hour or more for one to fill and be on its way.

The other settlements in Dansadau District are small compared to the nuclear villages of the Sahel study area. During the rainy season settlements consisting of three or four relatively dispersed compounds are nearly invisible amid the dense growth of crops and natural vegetation. A few other settlements are more compact, and may contain as many as 100 compounds. A minority of habitations are constructed entirely of clay brick; most have clay brick rooms enclosed by sorghum stalks. Semi-permanent Fulani hamlets, or ruqa, now are numerous.

Research Methods

The central methodological problem of social science field research can be summarized as data reliability vs. the representativeness of case study findings. The researcher must perforce focus his/her efforts on specific communities, but generalizations from these data about processes affecting wider regions and populations will always be called into question. On the other hand, if the spatial scope of fieldwork embraces a large region and numerous villages, the researcher may well end up with a copious amount of largely unreliable survey data. This is because many, if not most topics of interest to social scientists are very sensitive. Household and community demographics, assets and cash incomes, farm productivity and some types of migration are all very often intensely private matters. Questions regarding these topics may engender exaggerated, obfuscatory, or equivocal responses. Furthermore, rural folk are often suspicious and sometimes even fearful of an outsider, especially one whose presence in their community depends on the permission of modern and traditional governmental authorities. Be they linguistic or otherwise, the researcher's own shortcomings, his/her status as an outsider, and the sensitivity of many areas of inquiry are major reasons for the tentativeness and unreliability of many field data.

For a variety of reasons migration in Hausa society, the focus of this study, is one of these very sensitive

subjects. Migration is so complex, and informants sometimes so reticent or embarrassed, that accurate data may be extraordinarily difficult to obtain. Owing partly to these methodological obstacles Hill (1972), rather than presenting any major conclusions, chose to impart her insights on migration by offering a set of eight hypotheses. Watts (1983) identified credit, grain sales, and migration as very sensitive research topics, and in Katsina town encountered famine refugees' extreme reluctance to discuss their experiences. According to him, "The sensitiveness of matters pertaining to 'origins' in Hausa society is such that it is often impossible to collect data on refugee families" (Watts, 1979:373). An additional and more recent obstacle is people's fear of deportation. In 1982 and 1983, and again in 1985, the Nigerian government expelled tens of thousands of foreigners, many of whom had been attracted by the expanded economic opportunities of the oil boom years. The Western press, centered in Lagos, focused on the plight of Ghanaian deportees, but many other West Africans were also affected, including those from Chad, Mali, and Niger.

The difficulty of gathering data on migration and famine is confirmed by my own experience. In Amarawa, both ward heads insisted that famine-related migration had never occurred. Several other prominent elders, and approximately half of the informants interviewed individually, also held this view. Group interview participants in Tudun Gudali Mai Ruwa acknowledged only that their settlements had been

destinations for famine refugees, and elders in the Gidan Alkasim hamlets cited just two incidents of household distress migration during famines.

There is no panacea for the problem of data reliability, nor is there a comprehensive solution to the issue of representativeness. The best approach seems to be one that relies on patience, a substantial commitment of time, strong language skills, and the services of an outstanding field assistant. Mallam Bagudu and I confronted the data reliability/representativeness contradiction by proceeding slowly and circumspectly while broadening our horizons beyond "the village study."

Methodology Options

Much has been said about the tentativeness of the interview and the resulting data. Nevertheless the interview remains, and must remain, the principle source of data for social scientists. Compounds, granaries, health clinics, and schools can be counted; who lives in the compounds, who owns the granaries, who attends the clinics and schools must be learned by asking people. Farmland can be measured and yields estimated; only interviews might ascertain who receives the produce and the tenurial arrangement under which a farmer cultivates a particular parcel. Anthropometric measures can be taken, but the resulting data say little about the underlying causes of undernutrition.

Because of the central significance of the interview in most social science research, Briggs (1986) has called for a critical and contextual evaluation of the interview as a communication event. He asserts that a great deal of misapprehension stems from researchers' inability to understand that the interview is an unusual form of communication, at odds with the ways in which people normally exchange information. In both formal and informal interviews researchers impose alien communicative norms on their informants. To attempt to deal with this problem researchers must strive to identify people's resources for conveying information and the extent to which interviewing strategies might conform or be adapted to them. This is a formidable task. Briggs offers no single solution, but the incongruousness of the interview in relation to people's normal modes of interacting should always be kept in mind.

Recognition of monumental methodological difficulties – a sort of synergistic interplay of sensitiveness, suspicion, cultural and linguistic perplexities, and the tentativeness of the interview – has been important in influencing many researchers to undertake single village case studies. Watts (1983) prefaces the presentation of his field data with a catalogue of caveats, or "Hausa hazards." His decision to work in one village was informed in part by these methodological concerns for data reliability. Land tenure and land transactions are so sensitive and complex that Ross (1987) and his wife needed 18 months to investigate

thoroughly these issues in a hamlet of approximately 500 people. Demographic data from one village in Nigerien Hausaland were gathered only slowly and with the promise of anonymity by the Faulkinghams, a husband and wife team (published in Faulkingham and Thorbahn, 1975). Hill's (1972) seminal Hausa ethnography is also a village study. Many additional examples of fieldwork undertaken in a single settlement could be cited. Almost without exception these researchers have expressed concern about the appropriateness of a village as a unit of study and the general issue of representativeness.

Several researchers have struck what to me seems a tenable compromise for contending with the data reliability vs. representativeness problem. The essence of their approach is a series of formal interviews, including group interviews, and frequent informal discussions with a limited number of people in several villages. Extensive surveys consisting of very brief interviews in these and other villages may enable researchers to make inferences regarding the representativeness of their principal informants. For example, Painter's (1986) work on labor migration from western Niger focused primarily on a total of seven "principal contact households" in two villages. These data were supported by extensive (N=424) but very brief interviews in six neighboring villages. Sowers's (1986) approach to his research on migrant Fulani agro-pastoralists in Burkina Faso was similar. The survey encompassed more

than 40 Fulani settlements; 20 households from one settlement were selected for repeated interviewing. In a study concerning the influence of extra-village incomes on farming systems in the Gusau region of Sokoto State, Iliya (1988) supported his series of in-depth interviews (10 household heads from each of four villages) with rapid rural assessment surveys. Sutter (1982) also adopted the frequent interview approach, supervising a total of more than 80 series of interviews in two Nigerien villages in different ecological zones. (However, no field data were collected outside these villages.)

The frequent interview approach offers several important advantages. Through repeated contacts a researcher has the opportunity to build a rapport with informants, to refine his/her interviewing strategies, and to probe more deeply some of the more sensitive issues. Eventually he or she will also be in a stronger position for judging the reliability of informants' responses. Direct observation, and informal interaction with individuals not included in the sample, may provide opportunities for cross-checking information. Data from interview series in several villages, together with those from an extensive survey, should yield significant insight into the representativeness or otherwise of specific individuals and communities.

Unfortunately this approach is not entirely suitable for addressing this study's principle research questions on famine and migration. Frequent interviewing necessitates

small samples; return migrants in the Sahel, or refugees settled in the Sudan, could easily be excluded from such a sample. Even if a few were found in the small group selected for repeated interviewing, very little could be inferred from them about the pervasiveness and implications of this form of migration. Convincing some migrants to participate in a series of interviews might also prove difficult. Rapid rural assessment surveys would result in poor quality data. The sensitiveness of migration amidst drought and famine and especially the fear of deportation would justify reticence or prevarication on the part of many informants.

I therefore had to develop a different approach for contending with the data reliability vs. representativeness contradiction. This incorporated: 1) the frequent informal interactions of participant-observation research; 2) series of interviews with expert informants; 3) series of group interviews; 4) series of in-depth interviews with individual household heads; 5) single in-depth interviews with individual household heads. I was thus able to corroborate and overlay data from several different field sources. Some information gained during relatively brief forays into the National Archives, Kaduna, was also important.

Research in the Sahel

In the Sahel study area my initial and principal research site was Amarawa. Amarawa is one of the three villages where Abdu (1976) determined that entire families

had emigrated during the early 1970s drought and famine. This was an important consideration because in some villages emigration during drought may be extremely rare (Faulkingham and Thorbahn, 1975; Watts, 1983; Mortimore, 1989).

By June 1988 I had successfully negotiated the protocol for gaining access to the field. The representative of the Sarkin Gobir of Gwadabawa introduced me to the village head, who arranged for my accommodation in Amarawa and presented me to several groups of elders. I undertook no formal interviewing during the following six months. Instead I concentrated on refining my Hausa language skills while meeting as many people as possible, either in the village or on their farms, to explain the purpose of my presence and to ask for their future cooperation. I participated frequently in discussions with groups and individuals. I learned a great deal during this period, but I also misunderstood or misinterpreted many things. Nevertheless, some of my notes later proved valuable for cross-checking data and as a source of more general information.

In the absence of an aspatial sampling frame, such as a tax list or census records, I decided to produce a map of Amarawa. This was accomplished with the assistance of Mallam Sadiq Yelwa, the chief of the cartographic unit at Usman Danfodio University, and the two neighborhood (ward) heads. Amarawa comprises 220 habitations. However, the household heads of nine of these habitations reportedly spend only a very small amount of time in Amarawa each year,

and were never available for interviewing. Their wives and children are the only inhabitants. An additional three compounds are living quarters for the wives and children of three wealthy men. Three large compounds were under construction and uninhabited during the period of fieldwork. Six shigifa are the habitations of widowed or divorced women, and young unmarried men live in two others.

Because of the anxiety caused by censuses and their putative unreliability, and in light of the Faulkingham's research on demographics and drought, I abandoned the idea of making my own headcount. Over the next 13 months, with the assistance of Mallam Bagudu, I attempted in-depth interviews with household heads from as many of the habitations as possible.

My sample eventually included 162 Amarawa household heads. The rate of non-response was disappointingly high. I later learned, however, that Amarawa comprises about 450 taxpayers. Officially a taxpayer is any male over 18, although younger men often pay taxes. (Many in fact want to do so in order to obtain a tax receipt, a document frequently inspected by authorities at seasonal migration destinations.) A man does not usually attain the status of mai gida (family or compound head) until he reaches his mid or late twenties. It seems reasonable, therefore, that the sample included at least 50 percent of all household heads who are at least quasi-permanent residents of Amarawa. I

succeeded in securing at least one follow-up interview with 110 informants from this sample.

In Amarawa during this time I had additional frequent formal and informal interviews with expert informants including the two ward heads, the Sarkin Noma (the "king of farming," a traditional office), the heads of the barber's and butcher's guilds, the village head's scribe (Malamin Sarki), the town crier (Mai Shela), a primary school teacher who is an Amarawa indigene, the resident meteorological technician, and several other knowledgeable and very helpful individuals. I also conducted group interviews that sometimes included some of these people.

Upon completion of the research, the sample of 162 household heads was stratified according to four socio-economic categories identified by the informants: the wealthy (masu arzi or masu dan hali), the "middle class" (masakaita), commoners or "peasants" (talakawa), and the extremely poor (jan talakawa). The method used was pioneered by Hill (1972) and adopted in research by Watts (1983) and Lennihan (1987). Through the deliberations of indigenous informants each household head is assigned to one of the above groups. I organized two such "stratification sessions," and the assessments of socio-economic status differed for ten household heads. The groups were unable to make a determination for fourteen household heads.

Midway through the research in Amarawa I began interviewing in the two other settlements. Neither Tudun

Gudali Mai Ruwa nor Gidan Alkasim was included in Abdu's 1975 study. Interviews in Amarawa had provided some general information about these settlements, but no specifics concerning drought/famine impacts and migration. It seemed appropriate to include in my Sahel study settlements about which I had no prior knowledge. Gaining access was relatively easy; I was introduced to the traditional authorities and many of the people by the Mai Shela of Amarawa, and initially the people seemed willing to participate.

In Tudun Gudali Mai Ruwa and Gidan Alkasim I began with a series of group interviews, and then proceeded to conduct single in-depth interviews with individual household heads. The Tudun Gudali Mai Ruwa sample included 54 household heads out of about 150 taxpayers. I interviewed in all Tudun Gudali Mai Ruwa settlements. Gidan Alkasim has a total of 100 taxpayers. Owing to suspicion and fear only three individual interviews were possible in Zangon Yamma, the largest hamlet comprising 40 taxpayers. In the other three hamlets I succeeded in interviewing 18 household heads.

The research in Tudun Gudali Mai Ruwa and Gidan Alkasim has an element of a "top-down" orientation, because in most cases it was necessary to be introduced to individual informants by the village head. The interviewing also lacked the depth possible with repeated contacts, and formal stratification interviews were not practicable.

In seven surrounding villages I organized series of formal group interviews. Through informal interviews in these villages and elsewhere I learned that much of the resulting data concerning famine and migration were unreliable. In the village of Lakoda, however, informants were very forthcoming about migration during the 1983-85 period.

Research in the Sudan

In Dansadau District an intensive village study similar to my work in Amarawa was not possible. Limitations on time precluded follow-up interviews with most individual household heads. I relied on series of interviews with expert informants, series of group interviews, single interviews with groups, and single in-depth interviews with individual household heads.

I pursued these four strategies concurrently except during the initial phase of fieldwork in April 1990. During this time expert informants and groups provided detailed accounts of the settlement history of Dansadau District. Based on this information I selected three villages where I hoped to find answers to the second principal research question.

In Maganawa, Unguwar Mai Jan Kai, and Mai Tukuniya, I began with series of group interviews. I then proceeded with individual interviews: 21 household heads/61 taxpayers in Maganawa, 9 household heads/20 taxpayers in Unguwar Mai Jan Kai, and 6 household heads/61 taxpayers in Mai Tukuniya.

In a settlement of Fulani farmers I was able to interview two of seven household heads.

Group interviews in eleven other communities provided important additional information on migration and drought, corroborated previous accounts of the district's settlement history, and helped me in addressing the issue of representativeness.

Data Limitations

The most prominent bias in the fieldwork results from the exclusion of women. Although Islamic wife seclusion (kulle or purdah) is not widely practiced in the study areas, attempting to interview married women would have been a serious affront to community mores. My research assistant and I were also uncomfortable with the idea of interviewing widows and divorcees. We decided that it would be best to err on the side of caution, and not take any risks that might compromise research on the principal foci of the study. Informal, usually brief discussions with post-menopausal women were sometimes valuable in cross-checking information.

The individuals who declined to be interviewed represent an additional possible source of bias. Judging from the material composition of their compounds, however, it seemed that this group included both wealthier and poorer household heads.

The size of samples and sub-samples are not always consistent among the tables that summarize field data

because: 1) some informants were forthcoming on some topics, yet reticent regarding others; and 2) follow-up interviews revealed inconsistencies that required the deletion of some of the information provided by some informants.

I am confident that the data on migration from the Sahel study area (both famine-related and that occurring during non-famine years) are the best obtainable considering the sensitivity of the subject and the imprecision of memory. Individual informants who reported out-migration specified, among other particulars, the names of the household heads involved. Cross-checking was therefore possible. In Amarawa, these accounts were cross-checked further during group interviews. However, data on migrations that occurred prior to c. 1960 are probably less comprehensive and accurate than the migration data from the past thirty years.

In the Sudan study area there was virtually no doubt concerning informants' status as refugees. The only misgiving I have is that some informants identified as their origins localities, and not specific villages. Village names might have been valuable in attempting to determine the characteristics of settlements from which people migrate during famines.

Summary

The two principal research questions were addressed in two localities. The Sahel study area, located in northern Illela LGA, receives on average 530mm of rainfall per annum. Farms on both the sandy uplands and clayey lowlands are cultivated every year. Population densities are relatively high, uncultivated arable land is generally not available, and fallowing is extremely rare. Published sources indicated that the Illela area has a long history of population mobility and famine. Research in Illela-area villages focused primarily on return migration by famine refugees.

Dansadau District, constituting the Sudan study area, probably has an average annual rainfall total of at least 1000mm. Most of the land is not under cultivation, and population densities are relatively low. Apparently no previous field research had been undertaken there. Fieldwork focused on the second principal research question concerning migrants who have not returned to their villages of origin.

The only possible way of finding answers to the research questions was to ask people. But questions concerning famine-related migration are extremely sensitive. In both study areas, interviews with groups, individuals, and key informants were accomplished in several settlements. This approach enabled me to address the data reliability vs. representativeness contradiction while seeking answers to

this study's principal research questions on the excruciating experience of famine and its aftermath.

The next chapter examines key theoretical and pragmatic issues pertaining to famine, especially famine-induced migration.

CHAPTER THREE: PERSPECTIVES ON FAMINE AND MIGRATION

The present chapter is a focused review of the literature on famine. Discussions of definitions and causes, vulnerability to famine, and the progression of famine through time and across space will: 1) situate this study's two principal research questions upon a broader theoretical canvas; 2) elucidate the practical importance of these questions; and 3) provide contexts for the empirical findings of field research. The greatest emphasis is on distress migration which, according to the continuum model, is a last-ditch famine-coping strategy undertaken only after household assets have been liquidated in an attempt to procure food. The African definition of famine suggests that this is by no means always true. Moreover, an alternative conceptualization of the temporal progression of famine cites "migration to new lands" as a strategy for "modifying" conditions of intense hardship, and reports from Ethiopia indicated that two groups of refugees recovered from famine. Yet published accounts also have implicated distress migration as a cardinal agent in the expansion of famine zones. The focus on migration, as well as the issues of definitions, causes, and vulnerability, are of critical significance to attempts to develop effective programs for early detection and mitigation of famine in Sub-Saharan Africa.

Sub-Saharan Africa is, to borrow Dando's (1980) term, the quintessential "famine region" of the late twentieth century. Well publicized famines assumed sub-continental proportions in the 1970s. According to a United Nations list, people in twenty African countries were suffering from famine again in 1985 (Timberlake, 1985). Western news media focused attention on the agony of Ethiopia, yet famine also plagued millions in West, East, and Southern Africa. In 1993, news media were reporting daily on the strife that plunged Somalia into a protracted, devastating famine. The 1993 famine in the Republic of Niger has, in contrast, received virtually no coverage in the major North American news media.

The 1993 Nigerien famine demonstrates how poorly understood, how pathetic, and how intractable the bane of famine in Africa is. Excruciating famines wracked Niger in the early 1970s and from 1983 to 1985; in 1987, famine decimated livestock holdings and uprooted families in some parts of the country. Despite these recent famine episodes, and despite a relatively dense deployment of expatriate "famine experts" and an eight-year-old famine early warning system (FEWS), an estimated 200,000 Nigeriens were experiencing famine in 1993. Reports referred to distress migrations at a "sustained rate," and to deaths "due to insufficient food and inadequate medical care" (Voix du Sahel radio network, in Foreign Broadcast Information Service-AFR-93-123, June 29, 1993, and Foreign Broadcast

Information Service-AFR-93-137, July 20, 1993). This crisis arose not from the unpredictable impacts of armed conflict, but from events whose famine-precipitating potentials should have been recognized and monitored: a poor rainy season, locust attacks, and rodent infestations. This most recent failure to arrest famine attests to the continued existence of vast lacunae in Western knowledge of Sahelian human ecology and the dynamics of famine.

Definitions

The concern with defining famine has raised two questions of considerable theoretical and practical significance: 1) How should famine be differentiated from the chronic poverty and malnutrition affecting a large proportion of Africa's people? 2) Is Africans' concept of famine different from Westerners'?

Mesfin's (1984:9) definition calls to mind the soul-searing images transmitted to Western homes at the dinner hour. "Famine is the most negative state of food consumption under which people, unable to replace even the energy they lose in basal metabolism, consume whatever is stored in their bodies.... Famine is general and widespread, prolonged and persistent, extraordinary and insufferable hunger lasting for several months and affecting the majority of the rural population over an extensive area ... resulting in total social and economic disorganization and mass death by starvation." According to Watts (1983:13), famine is "a societal crisis induced by the

dissolution of the accustomed availability of, and access to, staple foods on a scale sufficient to cause starvation among a significant number of individuals."

Starvation is the key word in these decidedly Western definitions of famine. For Africans, however, the essence of famine is a threat to their way of life, not necessarily a threat to their lives. The liquidation of productive assets and destitution are thus the key concerns (Walker, 1989; de Waal, 1989). In light of this basic difference between Western and African definitions of famine, it seems reasonable that Sahelian farmers would migrate early on during a crisis period in a deliberate attempt to preserve productive assets. That mass migrations occur before asset liquidation becomes widespread has major implications for famine early warning systems that monitor what are supposedly indicators of destitution, such as grain and livestock prices and the quantity of household assets for sale at regional markets.

Causes

Since the early 1970s scores of studies have sought to explain the scourge of recurrent famine in Africa. Despite the disparate theoretical, ideological, and disciplinary perspectives represented in this large corpus of work, nearly all analysts agree that famine is both pre-disposed and catalyzed. Warfare and various environmental perturbations are identified without much controversy as catalytic causes. The ultimate, or pre-disposing cause of

famine is probably its most polemical aspect. That the poorest people apparently suffer disproportionately from famine inspires many of these often acrimonious debates. Adherents to dependency theory charge that capitalism, unevenly introduced in the wake of colonialist penetration, is ultimately responsible for twentieth century famines. According to Watts (1983), taxation, monetization, and compulsory cash crop production undermined the "moral economy," a set of technical, social, and political arrangements designed to guarantee subsistence to everyone. In pre-colonial times, the ultimate cause was equivalent to the catalytic cause; famines occurred only as a result of a particularly virulent environmental perturbation or military aggression, and all but the extremely wealthy faced death.

This view of pre-colonial famine causality is concordant with Fur rural producers' perception of the etiology of contemporary famines. The Fur affirmed to de Waal (1989) that the local rural economy is sound and the national economy insignificant; that severe drought, exacerbated by desertification, is liable to bring about famine under any circumstances; and that the rich and poor both suffer. The Fur view contradicts the "external view" that outside political economic forces have eroded traditional capacities for coping with drought, thereby instituting increased marginality and insecurity for the poor. De Waal suggested that the most complete and accurate explanation of famine's ultimate cause would incorporate

elements of both views. His most significant finding in support of the Fur view is that deaths during the 1984-1986 famine occurred in nearly equal proportions among relatively wealthy and poorer households.

This unexpected revelation challenges a very basic tenet, that famine is and always has been essentially a class phenomenon. Another tenet, that the ultimate cause of famine is the same as the ultimate cause of poverty, has also been challenged. Iliffe (1987) suggested that famine is the major cause of poverty in Africa's savanna environments, and that famine should be attributed to climatic and political insecurity. Mellor and Gavian (1987) also state that the underlying cause of famine is crop failure brought about by warfare or climatic perturbations. Delehanty (1988), who conducted fieldwork in Niger during the 1984-1985 famine, was in sympathy with "external" dependency explanations of the ultimate cause of famine. Yet in his view these explanations were largely irrelevant in the case of the 1984 drought, which was so overwhelming that even the wealthy were forced to evacuate farmsteads. Dreze and Sen (1989) also acknowledged that the "erosion of the moral economy" explanation is rendered meaningless during a severe community-wide environmental onslaught.

Anyone entering the debate on the relative importance of ultimate and catalytic causes immediately confronts an old dilemma. By emphasizing catalytic causes, one courts accusations of environmental determinism; a near-total focus

on social structure abnegates humankind's capacity to adapt and innovate, and is therefore also deterministic.

I believe that the importance of catalytic causes has been consistently understated by dependency theorists and others for whom social structure is the dominating concern. But I also believe that one ultimate cause is paramount: the failure of policymakers to comprehend that freedom from the threat of famine is the most basic pre-condition for development and the alleviation of poverty. This assertion accords with Iliffe's view, that famine causes poverty.

Vulnerability

Vulnerability is currently the key concept for theoreticians and for practitioners involved in famine early warning and mitigation programs. In addressing the question "Who is vulnerable to famine?" analysts focus on the risks and consequences of famine, rather than on its causes.

Downing's (1991) analysis of vulnerability is among the most prominent. Reflecting the strong influence of Sen's (1981) "entitlement theory," the principal concern in his analysis is with vulnerable socioeconomic groups. Specification of household incomes, and incorporation of these data into numerical models that would signal "entitlement failure" for poor people, represent the main methodological orientation. Downing also designates "regional food shortage" and "individual food deprivation" as additional "domains" of famine vulnerability. He acknowledges that vulnerable groups may be concentrated in

specific regions, but does not emphasize the potential importance of identifying spatial patterns of vulnerability. Data limitations severely restrict the practical significance of the individual deprivation domain.

Vaughan's (1987) research on the 1949 famine in Malawi is unsurpassed in demonstrating the critical influence age and gender had on vulnerability. Socioeconomic status was important, the most vulnerable group comprising households normally dependent on wage labor to meet a substantial portion of their staple food requirements. Oral testimony consistently revealed that young children and the elderly suffered more than other age groups, and that women abandoned by their husbands were also highly vulnerable to the impacts of famine. Of these, the inability to nurse infants and prostitution for food were the most shameful and degrading. Adult men, however, reportedly lost the most body weight and died most frequently. Vaughan argued that intra-family relationships can be as important as class divisions, and that any analysis of famine vulnerability must take both factors into account.

In their model for situating famine vulnerability in cognitive space, Watts and Bohle (1993) address age, gender, and virtually every other conceivable concern. The model is based partly on entitlement, but seeks to redress the major shortcomings of Sen's (1981) theory: its neglect of historical process, manifested by the narrow focus on immediate determinants of vulnerability (food price

increases, hoarding, the collapse of labor markets); and its failure to embrace gender, age, and ethnicity, owing to the pre-eminence afforded occupational and socioeconomic status. The space of vulnerability is represented by a ternary diagram, with "entitlement," "empowerment," and "political economy" designating its sides. This diagram is capable of portraying any or all vulnerable entities, including regions, groups, and individuals. Another attribute is the ability to represent changes in vulnerability over time. Conceived on an eminently theoretical plane, the model is intellectually very appealing. Whether any practical application is possible remains to be seen.

I contend that identifying spatial patterns of famine vulnerability would be of greater practical significance than approaches based on statistical scenarios and data from household income surveys. Reliable data on household economics are often exceedingly difficult to obtain, requiring a considerable commitment of time for series of interviews with a relatively small sample of informants. On a theoretical level, a focus on household economics, or entitlements, is of dubious relevance in rural Africa. As de Waal (1989) demonstrated, people who face famine frequently elect not to use what entitlements they have to purchase food. Instead they endure hunger, eat wild foods, and migrate in order to preserve productive assets.

Persistent spatial patterns of drought, a prominent catalytic cause, have been detected. Nicholson (1985, 1986)

and Farmer and Wigley (1985) have identified at least four sub-continental scale patterns of drought and abundant rainfall in Africa. Vermeer (1981) discerned patterns of climatic stability and mutability in Mauritania during the 1960s and 1970s. The persistence of these patterns and others elsewhere in the Sahel has been confirmed by Tucker et al.'s (1991) research on remotely sensed vegetation indices for the period 1980-1990. Palutikof (1986) has proposed that drought-prone areas and "spatial compensation zones" (characteristically drought-free areas) could be identified through analyses of decades-long rainfall series and soil moisture data.

On several different spatial scales, enduring patterns of the incidence of famine can also be identified. In India, recurrent famine has been most typical in the sorghum- and millet-growing regions of the Deccan plateau in Gujurat and Rajasthan (Currey, 1979); other regions having an especially pronounced liability to recurrent famine include Maharashtra (Subramanian, 1975; McAlpin, 1983), Bihar (Singh, 1975; Dreze, 1990a), and Bengal (Currey, 1979). In contrast, some regions of southern India have apparently been free of famine for periods spanning many generations (Murton, 1984; McAlpin, 1983). Nicholson's (1980, 1981) chronologies for western and northern Africa also indicate that sub-continental scale patterns of famine incidence have persisted over several centuries.

Numerous persistent national scale patterns of famine incidence have been detected. Through an exhaustive analysis of archival materials, Mesfin (1984) determined that during the years 1955-1977 Ethiopian famines recurred in five regions (Tigray, Eritrea, the middle Awash valley, and the southeastern lowlands of Hererghe and Bale). A narrow famine-free corridor persisted between Gonder and Kefa. Iliffe's (1990) historical study of famines in Zimbabwe identified the climatically and hydrologically capricious Zambezi valley and semiarid southern Mashonaland as the regions most persistently prone to famine. On the other hand, hardship in the highveld region was only rarely worse than an intense seasonal food shortage. In Niger, the Zinder region and the Zarmaganda have been consistently more famine-prone than most of the rest of the country. Yet within these regions, very significant local scale and inter-village differences in famine impacts have been recorded (Fuglestad, 1983).

Local scale differences in famine impacts in northern Kano State, Nigeria, have been discussed by Mortimore (1989). The severity of famine has consistently increased from west to east across the state. Within the western Indian state of Maharashtra, the "great famine tracts" that Mann described in 1955 also experienced the worst hardship during subsequent drought-induced famines (Dreze, 1990a).

The severity of famine has also varied considerably from village to village. In a study of the early 1970s

drought and famine in the Department of Maradi, Niger, Campbell (1977) elucidated extreme inter-village differences in the prevalence of distress migration to food distribution centers. The Faulkingham's detailed fieldwork in villages near Madoua, Niger, further illustrates the significance of these differences. Crude death rates in their principal study village actually declined from 1969 to 1973, and virtually no distress migration of families occurred during the drought. Temporary labor migration to Nigeria was the most important strategy for coping with extreme dearth. In contrast, between 55 and 80 percent of the populations of four neighboring villages reportedly emigrated. Village headmen regarded these migrations as permanent (Faulkingham and Thorbahn, 1975). Intervillage differences in famine impacts have been identified in localities in northern Cameroon (Campbell, unpublished data), in Zimbabwe (Dreze, 1990b; Campbell *et al.*, 1991), and in the Senou region of Mali's interior delta (personal communication, M. Bangaly, Save the Children Fund-U.K director, Bamako, 1992).

De Waal's (1989) research during the 1984-86 famine in western Sudan demonstrated a close relationship between location and mortality. Death rates in three of ten case study settlements were significantly different statistically than the calculated region-wide rate. In two settlements, mortality was higher ($p < 0.01$, $p < 0.05$) and in one settlement lower ($p < 0.05$). De Waal suggested that the influence of location may mask the effect of intra-village

differences in socioeconomic status. Access to safe drinking water and the most basic medical care were two highly significant spatial variables.

A strong association between location and famine vulnerability is suggested by recent nutritional studies. In Kenya, important differences in the prevalence of childhood malnutrition have been linked to ecological parameters and agricultural production systems. Malnutrition rates were highest among children in coffee-growing households in Eastern province, lowest in children whose parents cultivate drought-resistant crops in semiarid zones, and moderate in the children of monocrop corn farmers. A statistically significant difference in nutritional status between children from relatively wealthy and poor households was demonstrated only in Kenya's Nyaza province. Elsewhere, differences in nutritional status between children from different socioeconomic strata were not discernible (Haaga et al., 1986). Seyoum et al. (1986) also determined that household income had no significant influence on nutritional status in two Ethiopian communities. In Kenya and Malawi, Kennedy and Peters (1992) found that incomes of de facto female-headed households were the lowest of all socioeconomic groups considered in their field research. Nevertheless, the nutritional status of children in these households was significantly better than children in higher income male-headed and de jure female-headed households. Better child feeding practices and other

nurturing behaviors can improve nutritional status despite household poverty. Anthropometric measures of randomly selected children from villages situated within a c. 150 square kilometer area of Kwara State, Nigeria, demonstrated striking inter-village differences in nutritional status. The villages' locations and ecological characteristics are responsible for the disparities (Ebomoyi, 1987; Ebomoyi et al., 1991). A detailed dietetic investigation in neighboring communities in Mali permitted a similar inference (Martin, 1985).

The persistence of inter-village patterns of malnutrition and famine vulnerability has not been demonstrated by longitudinal studies. I argue that specification of these patterns would provide the strongest possible foundation for an effective famine early warning system. This endeavor would also define development initiatives that would substantially reduce the threat of famine and alleviate poverty. The knowledge and participation of people who have experienced famine in the past, and who remain vulnerable to famine, are essential to achieve these goals.

The Progression of Famine through Time

Definitions, causes, and vulnerability are issues often subsumed in studies that focus on the temporal dimension of famine. These studies have provided inspiration and support to proponents of widely differing theoretical perspectives. When a famine begins, and what happens to whom as a crisis

deepens, should also be of great interest to experts on famine early warning and mitigation. People's behaviors, including their strategies for coping with famine, best illustrate the progression of famine through time.

Different frameworks for conceptualizing and analyzing famine-related behaviors have been advanced. Dirks (1980) has elaborated a very broad framework consisting of three phases: alarm, resistance, and exhaustion. Intensified sharing, or an expansion of the "moral economy," typifies the advent of the alarm phase. As conditions become worse, people often adhere more strictly to the rules of their religion, and may engage in fasting or other rituals. Increasing restlessness and irritability may soon lead to political instability. Sales of productive assets and mass emigration are behaviors signalling the end of the alarm phase. The resistance phase includes a range of what might be considered anti-social behaviors. Hiding and hoarding food, and cessation of household members' interactions with the community (involution of the household), mark the demise of the moral economy. Raiding may occur, but the probability of organized rebellion diminishes. The exhaustion phase is characterized by the total individuation of society. Elders may be sent out to die, children sold or abandoned. According to Dirks' sources, famines that occurred in Ireland, Eastern Europe, and South Asia between 1845 and 1945 progressed through all three phases. Only two of the more recent famines reached the exhaustion phase:

the 1973-75 crisis in the Horn of Africa, and the 1964-65 famine among the Ik people of Uganda. Exhaustion phase behaviors, however, can be discerned in Vaughan's (1987) analysis of the 1949 famine in Malawi, and in Clarke's (1978) account of the early 1970s Sahelian famine. Perhaps during all famines the exhaustion phase has been reached in some communities or among certain groups.

Several frameworks commence with categories that encompass what are clearly long-term adaptive behaviors, but stop short of including categories equivalent to Dirks' resistance and exhaustion phases. Thomas et al. (1987) attempted to organize and describe famine-related behaviors as response modes, response levels, and response sequences. These categories overlap in some rather perplexing ways. Response modes include various forms of agronomic adaptation, the initiation and perpetuation of social support networks, distress migration, and passive acceptance of the consequences of food deprivation. Response levels are cooperative group behaviors, which also may include appeals to patrons and distress migration. The response sequence category is epitomized by a continuum of strategies that people pursue as a famine progresses. A key concern is whether strategies such as pawning, asset liquidation, and distress migration are reversible after a famine ends. Rather than elucidating the temporal progression of famine, this diffuse framework imparts an appreciation for its complexity.

Jodha and Mascarenhas (1985) have focused their analysis on one aspect of this complexity, the apparent dichotomy between adaptive behaviors and famine-coping strategies. Mixed cropping, crop/livestock mixed farming, toposequencing, asset accumulation, and various forms of inter-household cooperation, are adaptive behaviors that are deeply imbricated in rural life. Two forms of short-term adjustments, risk/loss minimization and risk-loss management, are employed sequentially as a crisis progresses. The first set of strategies are principally agronomic, and include midseason adjustments in planting or weeding operations, reducing hired labor, and attempts to salvage crops or crop residues. Postponing social commitments, reducing food consumption, wage laboring or labor migration, and asset liquidation are the most significant examples of risk/loss management strategies.

Table 3.1 is perhaps the most lucid and comprehensive framework for conceptualizing the temporal progression of famine. It includes adaptive behaviors and coping strategies, as do the frameworks of Thomas et al. and Jodha and Mascarenhas, but extends to incorporate elements of Dirks's exhaustion phase. This framework also situates adaptation, coping strategies, and serious famine impacts within four general spheres of interaction. Coping strategies should be a central focus of research aimed at developing a famine early warning system. To identify the sequences in which rural people resort to various coping

strategies, analysts must shift back and forth among the columns of Table 3.1.

An analysis of more than thirty community-level studies among African farmers, agro-pastoralists, and pastoralists has identified broad similarities in coping strategy sequences (Campbell, 1986, 1990b). From a review of several of these studies, Corbett (1988) deduced a three-stage model of the temporal sequencing of famine-coping strategies: 1) Insurance Mechanisms (changes in agronomic practices, sale of small livestock, reduction of food consumption, collection of wild foods, inter-household transfers and loans, increased petty commodity production, labor migration, sale of non-productive assets); 2) Disposal of Productive Assets (sale of livestock and agricultural tools, sale or mortgaging of land, credit from merchants or moneylenders, reduction of food consumption); 3) Destitution (distress migration). An effective famine early warning system would call for outside assistance before rural producers resort to stage two coping strategies. Timely delivery of aid would insure the basis of people's future livelihoods.

Corbett's model is generic. Recent research has demonstrated that the repertory, efficacy, and sequencing of famine-coping strategies vary from community to community (Campbell et al., 1991). This variation should be a critical focus of assessments of famine vulnerability. Site-specific ecological conditions, population density,

Table 3.1: Characteristics of Strategies for Coping with Food Deficit

	Social	Economic	Environmental	Political
Prevent occurrence of deficit	Extended family; village ties; clans etc.	Store; production strategy; economic diversity; build up assets	Fallow; manure; ecological variety; wild food	Taxation by ruling groups
Modify conditions of deficit	Pray; pay rainmaker	Sell: crops, food assets, livestock; Labor migration	Migrate to new lands	Raiding
Share consequences	Gifts; loans; children go to relatives	Gifts; loans		Access to relief institutions
Bear consequences	Pray; death	Cattle die; crops wilt	Desertification	Coups d'état

SOURCE: CAMPBELL, 1990a, p. 234 (modified after Burton et al., 1978)

settlement history, and several socioeconomic and cultural characteristics may all have a profound influence on the availability of coping strategies. Another key focus is the dynamic nature of coping strategy parameters. Deteriorating agroclimatic resources and the cumulative effects of several poor harvest may have reduced the number and effectiveness of coping strategies in many communities. For example, in some areas of Ethiopia people had coped with up to six consecutive years of harvest failure before suffering severe famine impacts during 1973-74. In contrast, the famine of 1984-86 was triggered by only one or two deficient harvests (Walker, 1989). In some communities, on the other hand, new coping strategies may be emerging as a result of long-term agronomic and socioeconomic adaptations (Richards, 1985, 1986; Mortimore, 1989). Most of the existing works on coping strategy sequences do not take into account this possibility.

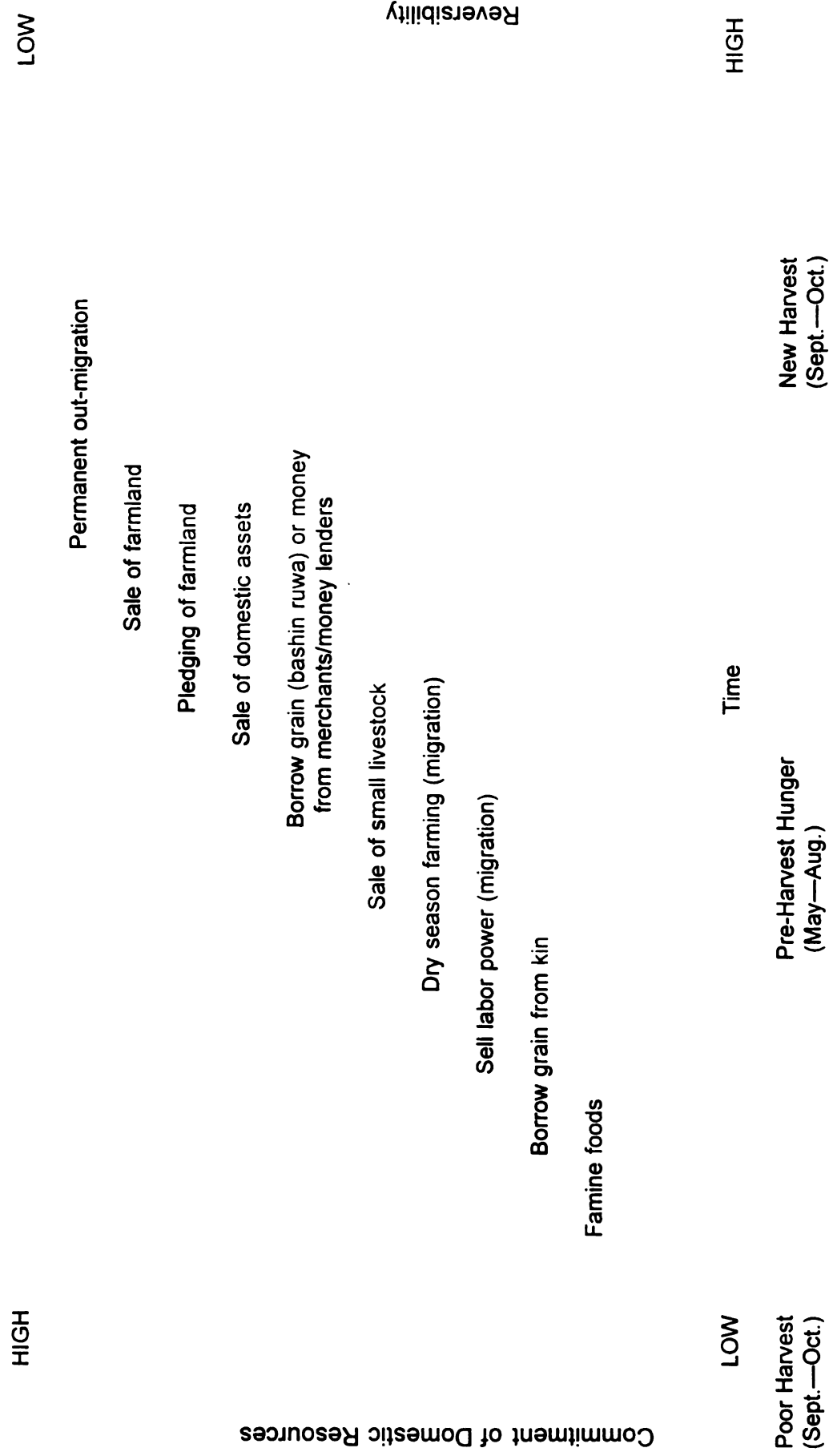
Another shortcoming of many of these works is that they do not directly address the denouement of famine, or acknowledge the possibility of a famine recovery phase. This criticism also applies to the broader frameworks describing the progression of famine through time. Jodha and Mascarenhas's framework ends with coping strategies; Thomas *et al.*'s discussion of response sequences concludes by raising the issue of reversibility. The total individuation of society is the terminal phase in Dirks's framework. Although Table 3.1 suggests that migration may

be an early and effective famine coping strategy, the other outcomes specified are coups d'etat, desertification, crop and livestock losses, and death.

For tens of thousands of Africans, death has certainly been the denouement of recent famines. But for those who survived, was destitution enduring and inevitable, and was massive out-migration the signal symptom of this outcome? Watts's (1983; Figure 3.1) representation of coping strategy sequences strongly implies that stage three of Corbett's model is indeed irreversible. Figure 3.1 is based on field data that purportedly demonstrate the "ratchet effect," a concept that concerns the differential impacts of famine on different socioeconomic groups and the irreversibility of stage two and stage three coping strategies. Because of the "sell cheap, buy back dear" character of famine/post-famine transactions, households that sell productive assets have little hope of regaining them. Apart from death, the denouement of famine is therefore, according to Watts, the pauperization and redistribution of a large proportion of Africa's people.

A few empirical case studies, however, have indicated that this conclusion is seriously flawed, and that it epitomizes a rather crude form of radical determinism. In

Figure 3.1: Temporal Sequence and Organization of Responses to Food Shortage



SOURCE: WATTS, 1983, p. 436

Ethiopia, distress migration by one group of people during the early 1970s famine was actually the first step in a successful indigenous resettlement program. The refugees' success was attributed to their avoidance of relief camps, to various forms of inter-family assistance, and to diplomatic accommodations with neighboring people at their destination (Turton and Turton, 1984). One group of migrants who arrived in the Northern Nigerian village of Dagaceri during the 1984-85 famine had maintained possession of their donkey, and by early 1986 had built a house and secured access to farmland (Mortimore, 1989). In Darfur, Sudan, de Waal (1989) determined that temporary household migration during times of famine was indeed an effective strategy for maintaining assets and recovering from famine. However, migration resulting in agricultural settlement in new lands is typically undertaken only during non-crisis periods by relatively well-off farmers.

These case studies confirm Jodha's (1975) speculation regarding the existence of a famine recovery phase. The Ethiopia study goes a step further, indicating that far from leading inevitably to pauperization, the denouement of famine can even entail positive developments.

Although this finding contradicts mainstream views on the probable outcome of famine, it is consonant with several scholars' ideas on the subject of climate and the human career. Butzer (1982) suggested that climatic variations in

pre-history provided the impetus for novel adaptive behaviors and a boon to cultural evolution. Childe (1928) contended that desiccation during the late Pleistocene forced the concentration of humans, flora, and fauna around a decreasing number of permanent water sources. The viability of hunting and gathering would have diminished as a result of increased competition for circumscribed resources, while the compulsory intimacy between humans, wildlife, and plants would have afforded the opportunity for domestication and the development of pastoral and farming systems. That refugees from a desiccating Sahara brought agriculture to the Nile Valley during the fifth millennium B.C. is a distinct possibility (Hassan, 1988; Butzer, 1976).

The Spread of Famine Across Space

Pioneering research on natural hazards in industrialized countries described how losses from disasters cascade through society. People directly affected by disasters usually do not bear the consequences alone; some effects are transferred from the disaster area to larger regions and populations through social and economic linkages (White and Haas, 1975). The category "share the consequences" in Table 3.1, and some of the coping strategy sequences discussed previously, indicate that this also occurs in Africa.

When food first becomes scarce, inter-household transfers and other moral economy practices usually take

place within communities. In some Sahelian villages this may happen every year in response to seasonal food shortages. Periodic episodes of intensified sharing reportedly contribute to a "levelling effect" among a community's socioeconomic classes (Hill, 1972; USAID, 1992). Levelling is accentuated as a food shortage intensifies, and communities progressively lose their ability to support needy households and individuals.

For some people remittances from relatives on labor migration may offset this deficiency throughout the course of a famine (Faulkingham and Thorbahn, 1975; Swinton, 1988; Campbell et al., 1991). Other migrants may face stiff competition in labor markets. Their wages may decline; they may go for weeks without work; they may cease sending money to their families, or perhaps worse, they may return home empty-handed. An impaired moral economy, attenuated labor markets, and the loss of other coping strategies often force people to seek sustenance from beyond their home villages.

Although distress migration might be an effective strategy for preserving assets or securing new ones, it is also a major means by which famine spreads across space. Simply put, the demand for food (or cash) attempts to move to the supply (Walker, 1989). The inability of governments and aid organizations to identify food deficit communities explains in large measure why the reverse rarely obtains in Sub-Saharan Africa. Famine, whether viewed as asset

liquidation or elevated rates of morbidity and mortality, diffuses on different spatial scales.

Mobility is partly responsible for the spread of famine at the local level. One form of mobility, associated with small scale trade in staple foods, contributes to a levelling effect within localities. Some individuals travel to nearby communities or markets to procure small quantities of food to sell in their home villages. These people, as Dreze and Sen (1989) pointed out, bear little resemblance to the urban-based, often portly, and much maligned grain merchants. They are usually poorer women who are willing to undertake a sometimes rigorous journey in an attempt to feed dependents with their small profits.

Webs of inter-village affiliations, of which kinship ties are the most significant filaments, represent culturally and religiously sanctioned conduits for mutual aid. As a famine progresses, people from the hardest hit villages begin requesting subsistence support from relatives and patrons in nearby settlements where, at least momentarily, food is available. Occasional opportunities for labor, remunerated either in kind or in cash, may also attract migrants, as might a relative abundance of wild foods, raw materials for crafts production, firewood and fodder for trade, and water for drinking and washing. Migrant families often take up residence in these neighboring villages. Their presence hastens the depletion

of water and vegetative resources, as well as their hosts' granaries.

The spread of famine from village to village has been documented. Chastanet (1983) described the diffusion of famines in the cercle of Bakel, northeastern Senegal, during the period 1914-1927. The destinations of migrants from famine-stricken villages in Niger were reportedly relatives' villages not far across the border in Nigeria (Faulkingham and Thorbahn, 1975). In northern Kano State, Nigeria, Mortimore (1989) determined that inter-village migration was pervasive during the early 1970s famine. The moral economy and the web of inter-village affiliations has contributed to the spread of famine on local scales in the Seno Delta region of Mali (personal communication, M. Bangaly, Save the Children Fund-U.K. director, Bamako, 1992).

In some localities, host villages may be capable of sustaining refugees from neighboring communities over the entire course of a famine. In other localities the limits of inter-village migration and the moral economy are realized as hosts' granaries and wild food reservoirs approach depletion. The erstwhile donors may then be forced to seek similar assistance from farther afield. At this juncture, a locality has become a famine epicenter. If numerous local epicenters develop, famine will expand to become a regional, or perhaps even a national phenomenon.

For many people in famine epicenters, few coping strategies remain. Day labor is completely unavailable, all livestock have been sold or slaughtered, wild foods are impossible to find, and household possessions may have been liquidated in a buyer's market. Water for domestic purposes may become very scarce or unobtainable. In the absence of outside assistance, households may have only three choices: bear the consequences (Table 3.1); sell or mortgage farmland, and attempt to procure food with the often meager proceeds; or migrate to areas less severely affected by famine, to seek employment or gratuitous relief.

Household distress migration is a fundamental means by which famine spreads on regional or national scales. As famine victims migrate, they carry the famine with them (York, 1985). Displaced households create increasing and eventually intolerable burdens in areas less severely affected by famine (Glantz, 1987).

The spread of famine on sub-national scales can be inferred from Brooke's (1967) exhaustive analysis of nineteenth and twentieth century famines in Tanzania, and from Becker's (1986) research on famines in Senegambia during the 17th and 18th centuries. Historical data from central and southern Angola also indicate that famines commenced in some areas and not in others, and subsequently spread across space (Dias, 1981; Miller, 1982). According to Chastanet (1983), the greater the duration of famines in

the Senegalese Sahel, the more the "area of survival" expanded, forcing desperate households to migrate farther from their home villages in search of food. The role of migration in enlarging famine zones can also be detected in Colson's (1979) account of her research among the Tonga people of southern Zambia.

In northern Ethiopia, Cutler (1984) demonstrated that the 1972-74 famine diffused with a "ripple effect" entrained by mass migrations from localized epicenters. Food prices at markets on epicenter peripheries rose in response to the increased demand and concurrent reduction in supply brought about by people fleeing famine. Famine subsequently expanded southward from these areas into Ogaden between 1973 and 1975 (Goyder and Goyder, 1988).

The ripple effect produced by migration from famine epicenters was also evident during the early 1980s crisis in Ethiopia. Pankhurst (1992) identified five areas in the central part of the country through which famine sequentially spread. By mid-1983, even Gonder, which Mesfin (1984) had included in Ethiopia's famine-free corridor, had been overwhelmed by a massive influx of famine refugees from western Wollo (Kumar, 1990). De Waal (1989) also observed family migration from Darfur famine zones to areas where grain was available. But refugees purchased grain only infrequently, having relied instead on wild foods and on self-discipline to reduce food consumption. Depletion of

wild food reserves in the receiving areas and increased competition in low-status, low-wage occupations (collecting firewood and fodder, crafts, portering, begging) may have propagated an expansion of famine beyond de Waal's research sites.

Mesfin (1984) detected national-scale patterns in the spatial progression of famine. In a section of his book compellingly entitled "The March of Famine," Mesfin explained how Ethiopian famines spread in an irregularly proceeding but clearly identifiable clockwise in-spiral from epicenters situated in the country's peripheries. The analysis spans two decades (1958-77), and does not deal specifically with the role of distress migration in perpetuating the spread of famine. On this time scale, famine diffused because it was able to follow the path of least resistance, one corresponding to areas where subsistence production predominated, and commercial agriculture remained undeveloped. In many areas, earlier famines had increased vulnerability to famine in the 1970s.

The Spread of Disease and Death Across Space

Distress migration is a key element of the health crisis model, the most convincing explanation of famine mortality. The already precarious health and nutritional status of people afflicted by famine deteriorates further during the ordeal of migration. As refugees take up residence in overcrowded squatter settlements and relief

camps, they are exposed to a host of life-threatening infectious diseases. Refugees themselves may introduce diseases to other groups of migrants and to the local indigenous population.

Migration, rather than food price rises, is the key to understanding the different patterns of increased mortality that resulted from eighteenth century famines in Western Europe. Post (1990:261) asserted that "almost without exception those states that passed through the most severe crisis mortality also witnessed a sharp rise in the incidence of unemployment, labor migrations, itinerant vagrancy, and mendicancy." During the early 1740s famine, Prussia and Austria experienced increases in mortality that were an order of magnitude lower than those recorded for eleven other West European countries. In Prussia the persistence of a feudal social structure, which prohibited subjects from migrating but which also obligated landlords to provide food aid, was largely responsible for the low famine mortality. England, in comparison to the other countries struck by famine in the early 1770s, experienced an almost negligible increase in mortality rates. Post (1990) attributed this to the development of public and voluntary relief organizations and the influence their activities had in minimizing distress migration.

Due perhaps in part to the European experience, the relationship between migration and famine mortality was

recognized during the British Raj in South Asia. A major goal of famine relief works was to check migration and the spread of disease (Srivastava, 1968). Since independence the Government of India's anti-famine apparatus has achieved remarkable proficiency in arresting the temporal and spatial progression of famine. Although its efficiency in providing fodder and drinking water to drought-affected regions has recently been assailed (Dhanagare, 1992), and although its success in halting asset liquidation has been at best equivocal (Dreze, 1990a), the system of gratuitous relief, fair price shops, institutional credit, and relief works has, according to Torry (1986), virtually eliminated distress migration and famine mortality. India's most impressive effort at mitigating famine was undertaken in Maharashtra State from 1970 to 1973. Maharashtra suffered three consecutive years of drought and harvest failure that were at least equal in severity to the contemporaneous disaster in the West African Sahel. A dense network of relief works, attended by as many as five million people, minimized overcrowding, the distances traveled, and the incidence of household distress migration. Most analysts agree that famine-related deaths were averted (Subramanian, 1975; Dreze, 1990a).

The Kenyan government's timely actions to mitigate famine in 1984 and 1985 have been repeatedly praised. Appropriate data were gathered and analyzed, and the need to

import corn was identified. This and the mobilization of domestic transport were achieved relatively quickly. Food at subsidized prices was widely available through well established commercial distribution systems (Cohen and Lewis, 1987; Dreze, 1990b). These efforts were apparently very successful at preventing distress migration by entire families and "starvation deaths." Hunger, increased rates of malnutrition, and asset liquidation were nonetheless in evidence, especially in more remote areas (Dreze, 1990b; personal communication, D. Campbell, 1994).

In the West African Sahel the pathetic record of deaths during famines frequently includes accounts of distress migration. Mass migrations, epidemics, and mortality were widespread during the severe droughts and famines of the 1740s and 1750s (Lovejoy and Baier, 1975). In Senegambia during the pre-colonial period, many famine refugees experienced a fate arguably worse than death as victims of the Atlantic slave trade (Curtin, 1983).

The most ghastly famine of the colonial era occurred from 1913 to 1914. Distress migrations and death were pervasive in Hausaland and throughout the Sahel. Baier (1974) deduced that in the cercle of Zinder (Niger), 85,000 of a total population of 350,000 perished. A French colonial administrator estimated that an additional 32,000 people fled to Nigeria (Fuglestad, 1983). Of the 4,000 people who reportedly died in a small area just to the north

of Katsina (Nigeria), a majority were famine refugees from Niger (Van Apeldoorn, 1981).

The drought and famine of 1926-27 caused major distress migrations from many parts of Nigerian Hausaland. Watts (1983) documented extensive abandonment of farmsteads in several districts of northern Katsina Emirate during 1927. Infant mortality rates throughout the emirate rose from 278/1000 in 1926 to 438/1000 in 1927. (De Waal, 1989, has argued that these data are seriously flawed.)

The synergism among drought, wartime food expropriations, and more general economic adversity led to famine in the Sahel during 1942 and 1943. Massive population displacements and death resulted. A flight of correspondence in the Nigerian National Archives, Kaduna, affords a glimpse of the suffering of a relatively small group of famine refugees (NAK SOKPROF 324. 793/Vol II). A telegram dated July 26, 1943 reported "large numbers of men, women, and children from [six northern Katsina districts] wandering Gusau, Chafe districts without food, money, or strength to work. Any famine relief measures taken here will only attract others. Suggest relief measures at home towns only solution. Grateful early action as Gusau, Chafe cannot support them." On August 9 some "rough figures" concerning the situation in the small town of Chafe were transmitted: of a total of 780 famine refugees, 506 were reported "too weak to move," but 274 were "walking." An

additional 252 refugees were reportedly encamped in Gusau, a town approximately 50 kilometers northwest of Chafe. By August 29 the refugee community in Chafe had increased to about 1000. A month later "scouts" from this community returned to report the near total unavailability of food in the home villages. The file on the famine refugees ends with the assumption that "there is little doubt that all the immigrants will settle here . . . crops are good, so there is no longer any question of the people starving, though it is perhaps rather hard on the peasantry who are their hosts." Deaths were not specifically reported, but the observation that people were "too weak to move" obviously indicates serious illness, possibly resulting from the stress of long-distance migration on foot or unsanitary conditions in the encampments. The writer's assertion that relief measures in the encampments "would only attract others" seems cynical, and his call for relief in the "home towns" may reflect his anxiety about administering a major food distribution operation. But if relief had been implemented in the affected localities several months earlier, the incidence of distress migration, morbidity, and death would have been much lower.

No one knows how many people died during the early 1970s famine in the West African Sahel. Watts (1983) quoted the most frequently cited statistic, that 100,000 people died in 1973 alone, and suggested that as many as 250,000

perished during the entire famine episode. Citing the reports of survey teams and Caldwell's (1977) assessment of their data, de Waal (1989) argued emphatically that 250,000 famine-related deaths is a gross overestimate, and that famine mortality, to the extent that it occurred, was likely attributable to infectious diseases that killed people (especially children) toward the end of the crisis. Estimates of famine mortality in the 1980s are equally conjectural and controversial. Delehanty's (1988:xiii) contention that "tens of thousands died" is based on first-hand experience in rural Niger from 1984 to 1985, and on conversations with others who were working elsewhere in the Sahel of West Africa. That mass migrations occurred during both the 1970s and 1980s famines is incontrovertible. Perhaps more than one million people were forced to flee famine-stricken settlements in the early 1970s. In Niger during the 1984-85 famine, an estimated 400,000 people migrated in search of food and water (Timberlake, 1985).

Medical researchers have recently focused on the connections between distress migration, the squalid conditions in squatter settlements and relief camps, and famine deaths. Their studies lend support to de Waal's (1989) conclusion that mass migrations and conditions at the destinations to a great extent account for deaths during famines. Shears and Lusty's (1987) study of famine migration and communicable disease epidemiology in northeast

Africa concluded that the major causes of morbidity and death were: 1) lack of basic health services for migrating people; 2) exposure of refugees to new disease risks present in different ecological zones; 3) increased disease transmission rates due to crowding in relief camps; 4) elevated susceptibility to diseases as a consequence of higher malnutrition rates. Owing to these causes, mortality rates in Ethiopia and southern Sudan during the acute phases of distress migration reached levels as high as 60 times the "expected" rates (Toole and Waldman, 1990). According to Toole et al. (1988), early detection of large scale population movements and provision of adequate rations to refugees would greatly reduce death rates by reducing malnutrition and the related heightened susceptibility to disease.

Summary

The African concept of famine is distinct from Western definitions in that the principal emphasis is the danger of destitution, not starvation unto death. Bearing in mind this basic distinction, it should seem reasonable that African farmers will migrate in a deliberate attempt to preserve productive assets and avoid the ratchet effect. If this strategy is successful, return migration would likely occur after agro-climatic conditions improve. The evidence strongly suggests that, in fact, the pre-colonial process of

advance and retreat from the southern Saharan margins continues even today.

This revelation, and the discovery that the denouement of famine also can entail improvements in the material well-being of refugees, would substantiate a famine recovery phase. Moreover, documenting escape from the ratchet effect and a still-functioning moral economy would in large measure refute two mainstays of the radical interpretation of famine causality.

Indeed, the moral economy is partly responsible for the spread of famine across space. This points up a fundamental contradiction with which famine early warning and mitigation programs must contend. Migration is an effective strategy for preserving productive assets and for securing new ones. But refugees also place demands for food and water on people along their route and at their destinations, and may thus propagate additional waves of distress migration. Furthermore, the ordeal of migration may result in severe illness and death for some refugees and their hosts. This contradiction, and potential strategies for contending with it, will be addressed in the final chapter.

The next chapter presents a twentieth century Chronology of environmental variations and famines in northwestern Nigeria and especially in the Sahel study area. Evidence of spatial variations in the incidence of famine is examined, in addition to reports that appear to demonstrate

the role of population movements in enlarging famine zones.
The catalytic causes of famines are scrutinized.

CHAPTER FOUR: CHRONOLOGY OF FAMINES AND CLIMATIC AND ENVIRONMENTAL VARIATION

Historical context is essential to any assessment of famine impacts and especially this study's principal research questions on famine-related migration. The length of the famine recovery phase, which in the case of refugees might entail return migration, has never been thoroughly investigated. It is therefore necessary to consider the entire record of twentieth century famines and their role in inducing population movements and resettlement. The primary goal of the present chapter is to develop a chronology of climatic and environmental variation and famine for the Sahel study area in particular, and more generally, for Sokoto State and adjacent regions. The chronology provides the indispensable context for examining data on distress migration and other famine impacts (chapters six and seven).

Additional goals of this chapter are to examine what historical records reveal about the complexity of the catalytic causes of famine and to bring to light evidence of spatial variations in vulnerability to famine and of the spread of famine across space. The historical evidence, compiled for this chapter through a synthesis of archival documents, rainfall records, and series of interviews with village elders, shows that governments frequently have failed to recognize the early signs of famine. The inability to detect incipient famine, which persists to this

day, stems in part from ignorance about the catalytic causes of famine and famine-related migration. The reliability of famine early warning systems could be greatly enhanced by judicious applications of the lessons of history. The data presented in this chapter also suggest that areas of particularly high vulnerability to famine lack perennial sources of domestic water and dry season farmland. Such crucial baseline information would help to identify potential famine epicenters.

At least ten famines have afflicted the people of the Illela area since 1900 (Table 4.1). These famines, in addition to the violence and oppression of colonial conquest and rule, have played major roles in this area's settlement history.

Early Settlement

In pre-colonial times, the Illela area was part of the Emirate of Birnin Konni. A majority of the study area's residents identify themselves as Konnawa, and many elders and people in their middle years bear the facial scars of this sub-division of Hausa ethnicity. The second most numerous group are the Adarawa, whose historical home region, Adar, is centered on the Nigerien towns of Tahoua and Illela-Umani. Gobir, a region to the east and north of the study area, is the original homeland of the Gobirawa people, the smallest group of Hausa-speaking people in the Illela locality. Older Gobirawa also have characteristic facial scars. Tuareg-controlled farming villages, populated

**Table 4.1: Famine Chronology for the
Sahel Study Area**

<u>Year</u>	<u>Name</u>
1904	Makaji
1913-14	Saketariya
1920-22	Kyalle Zumunka, 'Yar Kirit, Buda Bai, 'Yar Kuzut
1926-27*	Not Recalled
1931-32	Shekara Kyamro
1942-43	Takesharbo, Mazarkwaila
1953-54	Muda
1965-67	Mai Zobe
1973-74	Muna Sane, Shekara Karmami, 'Yar Taralle
1983-85	Buhariyya

* Evidence from archival sources only

**Table 4.2: Colonial-Era
Famine Chronologies for Northern Nigeria and Niger**

<u>WESTERN NIGER</u>	<u>SOKOTO</u>	<u>KATSINA/ DAURA</u>	<u>KAZAURE/KANO /HADEJIA</u>	<u>NORTHERN KANO *</u>	<u>CENTRAL NIGER</u>	<u>BORNO</u>
1900-1901/1903	1914	1904	1908	1914	1915-1917	1914
1911-1914	1921	1906	1914	1927	1918	1919
1913-1915	1927	1911	1920	1942	1920-1922	1924
1915-1917	1943	1914	1927	1947-1949	1925	1927
1919	1953*	1915	1943	1954-1957	1926	1943
1926-1927		1927	1951		1942	1953*
1929-1931		1943	1956*			1958
1931-1932		1950	1958			
1941		1951				
1942		1954				
1944		1958*				
1954-1955						
(PAINTER, 1986)	*Of Local Significance (WATTS, 1983)	*Of Local Significance (WATTS, 1983)	*Of Local Significance (WATTS, 1983)	*Collective Memory of Village Informants (MORTIMORE, 1989)	(DELEHANTY, 1988)	*Of Local Significance (WATTS, 1983)

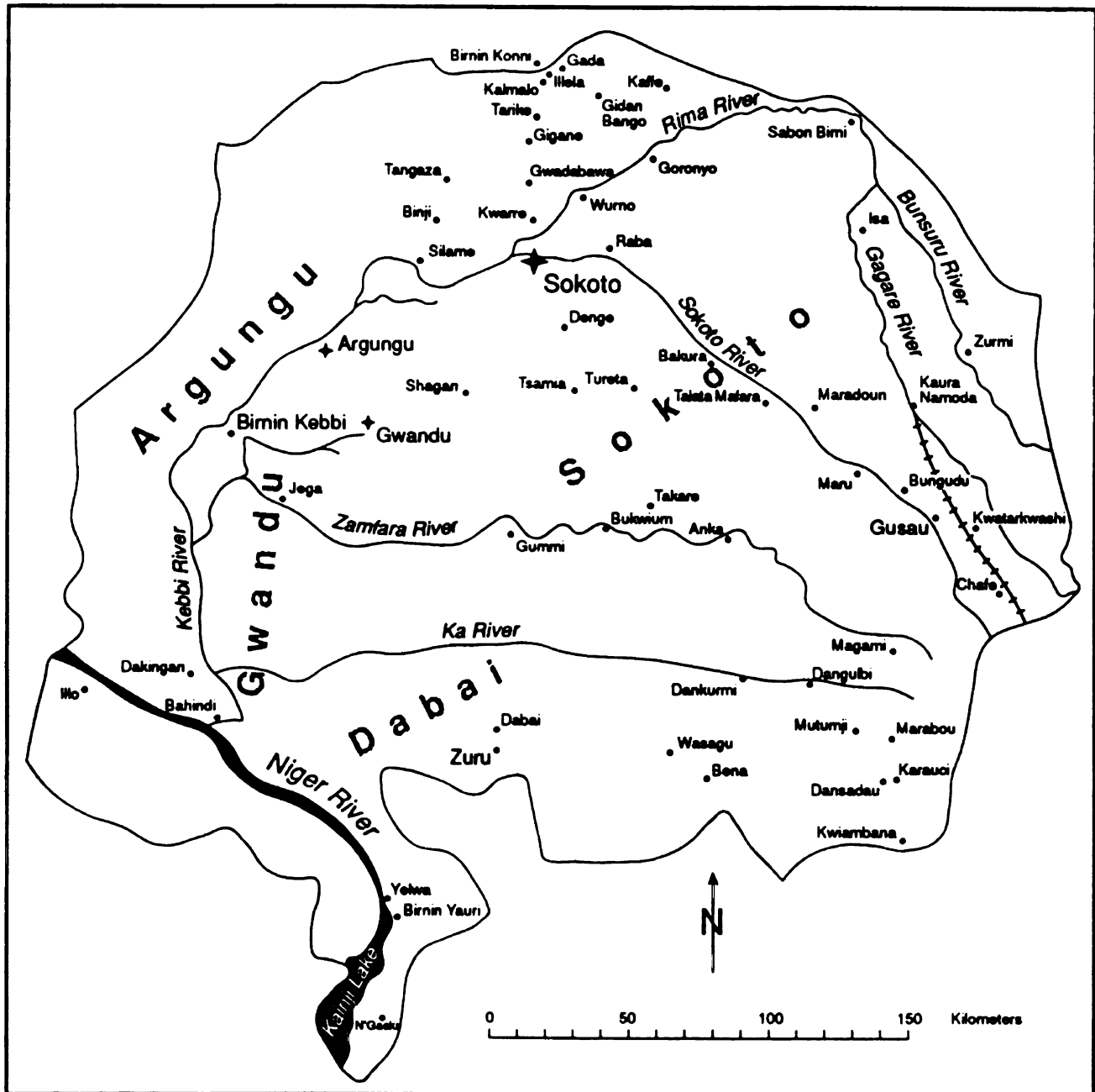


Figure 4.1: General Location Map of Sokoto Province/State

at least in part by Buzu "vassals," had been established in the general vicinity. A cluster of five of these villages was situated 35 kilometers north of Birnin Konni, and the large villages of Galmi, Gunfaro, and Kaura were located approximately 50 kilometers to the east and north (NAK SOKPROF. 6. 86/1904). The area around Goronyo, about 30 kilometers southeast of Illela, was described by British colonial officers as a southern outpost of the Nigerien Buzu (NAK SNP. 16. 670). Fulani mashekari (base camps) also existed in and around the study area before the colonial intervention.

A ruin in the Gidan Alkasim hinterlands is probably the oldest observable evidence of human occupancy in northern Illela LGA. It consists of stone and clay remnants of walls that once enclosed an area of perhaps 3,500 square meters. The identity of the structure's builders is a mystery to everyone. One group of elders speculated that it was a quasi-permanent military outpost of the Hausa state of Kebbi, whose zenith of power antedated the 1804 Jihad. Kalmalo, situated across the lake from Amarawa, is most likely the oldest extant settlement. P. G. Harris, author of the 1939 Sokoto Provincial Gazetteer, described it as "large and flourishing" at the time of the Jihad. Dango, situated near the top of an inselberg, and Lakoda, whose elders claim that their ancestors' occupation is of such antiquity that they have forgotten their founder's name, are examples of large and old villages. Alhaji I, the head of

Illela, maintains that his town was founded in the eighteenth century. Illela nevertheless remained relatively small and insignificant until recent decades. Amarawa also existed before the advent of European colonialism. Recitations by Malamin Sarki D.M. (the "chief's scribe") of the succession of village heads and the number of years and months each held power indicated that Amarawa was founded in the 1860s. Rungumawa, another large village, also existed in the pre-colonial period (NAK SOKPROF. 635. 3336 and 110. C. 36).

The Period 1899-1910

The devastation wrought by the Voulet-Chanoine expedition of 1899, during which Birnin Konni was sacked and burned, caused the first recollected influx of immigrants into the study area. A subsequent major influx, often referred to as "shigowa Adarawa" (the immigration of people from Adar), occurred as a result of Makaji, the first famine in living memory. By counting and marking in the sand amid deliberations (lissafi), three groups of elders independently determined that Makaji took place in 1904. Drought was probably a proximate cause. According to Fuglestad's (1983) sources, the period 1899-1904 was marked by climatic instability and insufficient rainfall.

Amarawa elders believe that the hamlet of Gidan Alkasim was founded as a result of Makaji. The years of tenure ascribed to Gidan Alkasim's three headmen (including the present one, Mallam G) support a near turn-of-the-century

founding. The elders of Gidan Alkasim, however, said that they did not know whether drought and famine prompted their parents' migration. They recounted that Mallam G's father, Alkasim, and the other founders were agropastoralists in Taboye, a village in Niger located approximately 75 kilometers northeast of Illela. During one of their annual southward pastoral excursions, they decided to establish a settlement in the void that existed between Dango and Amarawa. Permission was readily granted by Marafa, the Sarkin Gobir of Gwadabawa and a grandson of the Shehu, Usman Dan Fodio. A power vacuum stemming from the struggle between the French and the Tuareg may have made this migration possible. The founding of Gidan Alkasim may have resulted from a conjuncture: the "push" of drought-induced hardship, the "pull" of a well watered uninhabited area, and the opportunity to escape Tuareg suzerainty. The establishment of Zangon Tsakuwa, and the Buzu hamlets near Rungumawa, Lakoda, and Tozai, might be attributable to this or other similar conjunctures.

In the years immediately following Makaji, large differences in tax rates motivated people to migrate from Niger into Northern Nigeria and the study area. A Mr. Brooks, on tour to the northwest corner of Gwadabawa district in December, 1910, determined that the tax rate across the frontier in "French territory" amounted to 4,000 cowrie shells per adult male, while a levy of 1,800 cowries

was being collected in Nigeria (NAK SOKPROF. 2121. S. 2347B).

Brooks's report offers a glimpse at agro-ecological conditions in an area from five to 100 kilometers west of Illela and Amarawa. He and his entourage arrived in Kalmalo from Gwadabawa via what was then the only "road" in the general vicinity of the study area. Brooks remarked on the "fine tabki" (lake), and judged its dimensions as three miles long and one and one-half miles wide. From Kalmalo, Brooks's group proceeded by "bush paths" west-southwest along the Niger border for about 100 kilometers. In addition to gero (millet), maiwa (late millet), and wake (cowpeas), farmers were cultivating acca, a small cereal-like grass also known in Hausa as intaya, and in English as "hungry rice" (Dalziel, 1916). Cash crop production was limited to a "few" peanuts and "one or two small patches" of cotton. The chief difficulty in this area was a dearth of water for domestic purposes. The residents of Kurdula village were carrying water from Nakigaya, a "considerable" distance. The people of Kiso had been returning annually to Boto owing to a lack of water during the dry season. Salawa had been abandoned, its people having moved to Cilas, another village in the locality where water was available. The father of Sarkin Noma A and his family emigrated from Kutufari, a village in the vicinity of the aforementioned settlements, either a few years before or a year or two after Brooks's tour, and subsequently established Katanga.

Whether a turn-of-the-century dry phase and Makaji were in any way responsible for desiccation and the abandonment of villages is a matter for speculation.

The 1911-20 Period

The ghastly Sahel-wide famine of 1913-14 is known throughout the study area as Saketariya. Elders' lissafi in 1989 consistently determined that it had occurred 75 years earlier. Saketariya has two meanings: that men were forced repeatedly (sake) to leave their homes to seek and gather (tariya) food , or that men divorced (sake) their wives and dependents and left to gather food. Elders recall, or recall being told, that Saketariya was associated with a terrible drought. The data available for the central Sahel suggest that rainfall had been poor in the years 1910-1912, and especially in 1913.

In his 1913 annual report for Sokoto Province, E.J. Arnett, the British Resident, stated that there had been a shortage of rainfall and that the harvest was generally bad (NAK SNP. 10. 104P). Although the first five paragraphs of this document have disintegrated, it appears that the British administration had no appreciation of the peril faced by their subjects.

Arnett's 1914 report gives a surprisingly detailed and insightful, if understated, account of the famine that followed the 1913 harvest failure. According to Arnett, 500,000 people in the northern districts were affected by "partial" failure of village crops, while harvests in the

east and south of the province were above average. The Resident contended that Sokoto Province could have dealt adequately with the food shortage had it not been for the vast influx of refugees from Niger. Elders in the study area remembered that Sakatariya caused a second episode of "shigowa Adarawa" and "shigowa Buzaye." An additional concern of the British administration was the unprecedented number of Buzu camel, donkey, and ox caravans moving about the province in early 1914. Grain purchases by these traders reportedly caused prices to go up by "leaps and bounds," and the people of northern Sokoto suffered as a consequence.

Arnett listed three groups who were "very bad off:" 1) the poorer, mainly agricultural classes; 2) Fulani who either did not farm, or who had insufficient croplands; 3) "chiefs" and their dependents who were engaged in administrative work, and who therefore had to purchase food. The problem of indebtedness was also acknowledged. Many farmers would have to sell a large proportion of the "generally excellent" 1914 crop in order to repay creditors. Illela-area informants recalled that falle – borrowing one bundle of grain during the "hungry season," to be repaid with two bundles at harvest time – was common during Saketariya.

In the aftermath of the 1913-14 famine, refugees from Niger were regarded as a problem. Their presence in Nigeria was "not desirable," perhaps because they were thought to

have fled French conscription for World War I. Accordingly, 225 refugees were "rounded up...and deported" in 1915, as were "a number" the following year (NAK SOKPROF. 635. 3336 and NAK SNP. 10. 148P). In 1918, a delegation of Tuareg "chiefs" from the Kel Gress confederation visited Sokoto to request help in recovering their escaped Buzu "slaves." Apparently by this time the British had softened their stance on refugees, refusing to accommodate the Kel Gress except in the case of Buzu who had settled in Sokoto Province during the previous two years. One hundred fifty men and their families were deported. Arnett reported that the Buzu's flight had been precipitated by the harsh demands of their Kel Gress overlords, from whom the French had been requisitioning supplies to reprovision their beleaguered Saharan outpost at Agadez. The Resident opined that the Buzu preferred the "easy life" in Nigeria but also attributed their immigration to the "desiccation" affecting "French territory" (NAK SNP. 10. 100P).

In the study area at least two settlements were established at about the time of Saketariya. The parents and grandparents of the Fulani based in the western Tudun Gudali Mai Ruwa meshekari moved here during the famine from their encampment on the fadamalands near Gaidau (Figure 2.2). Tozai was founded by Zanke, the village's first head, and a group of families that had been ordered to move from Tarike (a village 15 kilometers to the southwest) by Sarkin Gobir Gwadabawa Marafa following a serious clash with Fulani

herders. Malamin Sarki read from a document written in Ajami (Hausa in Arabic script) which recorded the succession and years of tenure of Tozai's headmen. The document indicates 1915 as the year the village was founded. These are the earliest recollected examples of what Sidikou (1974) documented in western Niger: that the stresses and hardships of famine force migration and the establishment of new settlements within localities.

Harvests in 1915 and 1916 were reported as "excellent" and "exceptionally good" (NAK SOKPROF. 635. 3336 and SNP. 10. 148P). Arnett's Sokoto Province report for 1917 stated that rice and sorghum crops had failed in many districts, although millet appeared to be good everywhere. Rainfall was below average in Sokoto (477mm) and in Niamey (375mm). Grain prices remained low until Christmas, and then rapidly doubled and stayed high until July 1918. Food shortages were reported in the northern and central districts in the first months of 1918. In and near the study area, farmers caught practicing trans-border cultivation (noma-jide) had their crops confiscated and some were imprisoned for brief periods in Birnin Konni (NAK SNP. 33. 555 and SNP. 10. 100P). Informants in the study area did not recall a famine occurring three or four years after Saketariya. Perhaps harvests had been adequate. Considerable quantities of wheat had been produced recently in Kaffe, a large village approximately 35 kilometers east of Illela where, owing to a shortage of imported wheat in 1918, the Native Authority

purchased five tons. Crops were generally good in Sokoto Province in 1918 (NAK SNP. 10. 100P). The 1919 annual report mentioned partial harvest failures in some districts as a result of poorly distributed rainfall (NAK SNP. 10. 10P).

The 1920-29 Period

The next famine that afflicted the people of the study area spanned the period 1920/21-1923/24. Group interview participants in Gaeti and Lakoda determined that droughts, meager harvests, and famines occurred in three consecutive years seven to nine years after Saketariya. The names applied to these years of adversity include Kyale Zumunka (ignore your age mates), 'Yar Kirit, Buda Bai, and 'Yar Kuzut. This famine period, however, was not recollected by any other group of elders in study area settlements.

The 1923 Sokoto Province Report related that people in Kwarre (a large village located midway between Sokoto and Gwadabawa) and its vicinity, as well as people in districts farther west, had suffered their third consecutive year of total harvest failure (NAK SOKPROF. 52. 219). The 1922 report included an account of famine-impelled distress migration from western Sokoto districts to areas in the east of the province, including Zamfara and Kaura Namoda. Some refugees reportedly pressed on as far as Zaria, Kano, and Bauci (NAK SOKPROF. 19. 265). Shenton and Watts (1979) contended that hunger throughout Northern Nigeria in 1920-21 was exacerbated by economic recession, depressed export crop

prices and the difficulty households faced in paying taxes, the influenza pandemic, and the concomitant heightened susceptibility to cerebro-spinal meningitis. Tens of thousands of people were estimated to have perished in Kano Province during this period of conjunctural hardship. The death toll in Sokoto apparently has never been estimated.

The 1924 harvest in Sokoto Province was reported as "excellent," although abruptly occurring freshets caused localized failures of rice crops. The 1925 province report indicated that despite poor weather early in the farming season, late rains resulted in "bumper crops" everywhere but in northwestern Sokoto (NAK SOKPROF. 57. 234 and SOKPROF. 60. 474).

Much like Arnett in 1913, Mr. G.A. Woodhouse, the new Resident at Sokoto, appears to have underestimated the gravity of harvest failures in 1926. Sokoto rainfall totalled 531mm, the lowest since 1917. The 60mm recorded in July is the worst in the entire 1916-1989 monthly rainfall series. Woodhouse remarked on the general inadequacy of this rainy season, adding that deficiencies were most acute in the west and northwest of the province. Nevertheless millet was reported "up to average." Only those farmers who failed to plant after the copious rainfall of April 30 had "practically no gero." But sorghum was scarce around Sokoto. Although grain reserves were supposedly being augmented to guard against potential shortages, Woodhouse concluded that, with the exception of a few far below

average areas, grain reserves from the "last three fat years" existed "everywhere in the productive area" (NAK SOKPROF. 64. 229).

In his 1927 Sokoto Province report Resident G.W. Webster went into considerable detail about that year's famine, which affected most of Northern Nigeria (NAK SNP. 17. 6863). Webster had realized that as a result of "very patchy" 1926 harvests, food shortage was "almost universal" in the province. He maintained that the farmers' own grain stores together with the Native Authority's increased local reserves would have been sufficient to prevent real hardship but for large scale hoarding and profiteering. Efforts to commandeer hoarded grain, and to prohibit falle loans, were reportedly successful. Prices fell immediately, and it was said that everyone was able to purchase food. But a decrease of 57,000 cattle, attributed largely to distress slaughtering, was recorded in Sokoto division. In the western and southern divisions of Argungu and Gwandu, slight increases in "normal" Native Authority grain reserves and restrictions on the export of foodstuffs limited famine to a "few small areas." A rinderpest epidemic and the "unsatisfactory conditions" of food shortage presumably diverted herders from these divisions. As a result, 16,911 fewer cattle were enumerated in 1927 than in the previous year, and jangali revenues were reduced commensurately. On the other hand, the tax assessment for the Zuru area increased from £4,643 in 1926 to £5,245 in 1927. The

increase was attributed to immigration from regions to the north, including Gwandu, and to additions to village livestock holdings. Despite "bumper crops of most kinds in all areas" in 1927, food prices did not fall after the harvest. Webster ascribed this to improved transportation infrastructures, including the rail line.

The efforts of the colonial government to mitigate the 1927 famine in the northern provinces have been assessed as woefully inadequate. Adequate provisioning of the millions affected by famine would have entailed transportation costs well beyond the fiscal means of the British administration (Shenton and Watts, 1979). Yet, considering the proportionately very small number of people who benefited from the famine relief scheme, expenditures were, according to Watts (1983), absurdly high.

The Report on Famine Relief in the Northern Provinces in 1927 (NAK SOKPROF. 74. 416) indicated that the sum allocated to Sokoto Province, £10,029, was second only to Kano. But aid was lacking in areas that, even from the colonialists' perspective of reduced tax revenues, were worst hit. In Gwandu and Argungu divisions, from which households reportedly emigrated during the famine and in which wholesale decreases in cattle populations were recorded, expenditures were "nil" (NAK SNP. 17. 6863).

The report on famine relief is interesting in several respects. Apparently for the first time, colonial administrators appreciated the disastrous potential of two

consecutive harvest failures. The report's authors also realized that some imported foods, such as rice, may not be appropriate for famine relief. Deaths from consuming unripe millet were acknowledged as having occurred in Sokoto Province in 1927 as well as during previous famines. The report offers a hint of the possible consequences of famine in Northern Nigeria for the people of Niger. A famine relief work in Gumel Emirate (northern Kano Province) was not well attended because many people crossed the border into Niger to live temporarily with relatives. Lower grain prices were reportedly the main inducement for their migration.

Even though 1926-27 is included in Painter's (1986) and Delehanty's (1988) chronologies of famine, Watts (1983) assessed harvests in Niger as having been fair, and distress migration to Nigeria as minimal. Perhaps harvests were also adequate in the study area. No informants specifically recalled this famine, and apparently no name had been attached to it. One elder in Makwala stated that "Tashi ta Tikittibale," a distress migration en masse from villages in the northeastern quadrant of the study area to a locality near Shinkafe (13°05'N, 6°31'E), occurred two or three years before the Sultan of Sokoto Tambari's flight to Niger in 1931. One Amarawa elder recalled that this exodus took place during Tudu Malami's tenure as village head (c. 1927-c. 1934). Most elders, however, associated the migration to Tikittibale with several subsequent colonial-era famines.

If Tashi ta Tikittibale occurred in 1927, perhaps it was the first in a chain of distress migrations.

The Tudun Gudali Mai Ruwa nuclear settlement was founded during Muhammadu Tambari's reign as Sultan of Sokoto (1924-31). The exact date could not be determined because of disagreements concerning the tenure of the first two village heads. The first settlers emigrated from unspecified Konnawa villages in Niger to escape French forced labor. Their sons could not recall whether their migration was also compelled by food shortages. Shortly after Tudun Gudali Mai Ruwa was established, some of the local Fulani began their northward wet season transhumance. According to one Fulani elder, this was necessary and possible because the expansion of land under cultivation reduced pasture resources, and the Tuareg ("Asbenawa") could no longer prevent excursions into the Sahara.

In 1928 the road from Gwadabawa to Kalmalo was improved so as to be motorable, and people in the study area saw motor vehicles for the first time. An Amarawa informant born at about the time of this event has as his lakabi ("nickname") "mai mota," implying that his birth was associated with the appearance of an automobile.

With few exceptions 1928 harvests were reported as "excellent." Abnormally heavy August rainfall caused localized failures of millet crops in southern Sokoto Province (NAK SNP. 17. 9270). The following year crops of all kinds also were judged to have been "excellent"

throughout the province, and grain prices decreased markedly relative to 1928 post-harvest levels.

The 1930-40 Period

The famine of 1931-32 is recalled throughout the study area as Shekara Kyamro. This name connotes that harvest failures on upland farms were so complete that only the woody grass kyamro survived. Informants consistently recounted that this year (shekara) was a "yunwa fara" (a "hunger" caused by locust), that swarms emanated from the west, and that it occurred during Hassan dan Ma'azu's reign as Sultan of Sokoto (1931-38). A minority stated confidently that Shekara Kyamro was either the year of or one year after his turbaning (coronation). The published accounts of this famine focus on western Niger (Salifou, 1975; Fuglestad, 1974, 1983). Archival records for Sokoto concentrate on areas in the south of the province. That locust attacks resulted in major harvest failures and severe hardship in northern Sokoto apparently had never been established.

The 1930 Sokoto Province report by Mr. H. F. Blackwell recounted that the first flights of locust had been sighted in September 1929 near Kwarre (c. 15 kilometers north of Sokoto) travelling west. In November another flight was observed near Argungu. Between April 14 and May 4, 1930, swarms appeared in Jega, Birnin Kebbi, Gusau, and Sokoto. Blackwell concluded that harvests were good or very good overall despite continued locust infestations during the

rainy season, which in Sokoto yielded 744 well distributed millimeters. But he also cited what amounts to a rather long list of exceptions. Crops were damaged in Anka, Bukwium, Gummi, Kebbi, Kwiambana, and Zurmi districts. Famine conditions prevailed in parts of the Ka River valley, as well as in the Zuru area, where the 1929 harvest had been poor and "much" of the 1930 sorghum crop and 70 percent of the acca crop had been demolished. Northern Argungu was seriously affected, but "abundant" crops in the rest of the division would more than compensate for this shortfall. Wet season crops at the Kwarre experimental farm had not been "very successful" because of locust infestations and flooding (NAK SNP. 14. 818).

The province report for 1931 by Mr. C. A. Woodhouse is not nearly as contradictory (NAK SNP. 16. 670). The monsoon arrived tardily to northern Sokoto, but otherwise rainfall was well timed. All parts of Sokoto Province reported abundant harvests, and Woodhouse saw no potential for food shortage during 1931-32. A vigorous anti-locust campaign had been carried out during the early rainy season. Locust were attracted and killed by, inter alia, millet bran and corn cobs laced with sodium arsenite. (Ferric hydroxide, an antidote, was kept on hand to treat accidental poisoning.) Because too many livestock died from eating the toxic "bait," this method was abandoned in favor of trenching, Africans' traditional strategy for combating locust attacks

(NAK SOKPROF. 283. 376B). Locust swarms did "remarkably little" damage to crops (NAK SNP. 16. 670).

Pre-harvest hunger had necessitated the opening of famine relief works in the Zuru area. Despite this assistance, farmers were too weak to cultivate during the 1931 rains and famine dragged on. High food prices obtained in parts of the province, while grain had to be distributed in Bukwium, Anka, northern Argungu, and Tangaza during the 1931 "hungry season."

In Woodhouse's view the 1931 harvest ended the few localized food shortages. The Zuru area famine was the only possible exception. But in the 1932 Sokoto Province report prepared by Acting Resident Mr. L. S. Ward, one finds strong evidence that the British administration seriously misjudged the magnitude of 1931 harvest failures and the extent of famine (NAK SNP. 18. 921). In 1932 farmers were supposedly so worried by the prospect of a third consecutive year of locust attacks and harvest failures that they greatly expanded the amount of land devoted to peanuts. More than 14,000 tons were exported from the rail heads at Gusau and Kaura Namoda, an increase of 6,600 tons over 1931. Cattle and sheep were "absurdly cheap" before the 1932 harvest. Tax remissions, ranging from -0.9 percent in Gwadabawa to -28.5 percent in Kwiambana, were necessary in 32 of Sokoto Division's 48 districts. Taxes had to be reduced by nearly 10 percent in Argungu division despite a recorded increase in population of 1,400. The assessment for the Yelwa area

was reduced by 13 percent, but in the area around Zuru, where farmers had been too weak to cultivate, the remission amounted to only two percent (NAK SOKPROF. 2127. S. 2403). Distress migrations were reported, but only from Gwandu division, the Zuru area, and the area south of Yelwa.

Immigration from "French country" was noted consistently during the 1930-32 famine episode. Argungu, for which was recorded a decrease in population in 1931 and then an increase in 1932, was reportedly the principal destination for "starving Zabermawa and Arawa" (NAK SNP. 18. 921). But by this time the British had decided that refugees should be welcomed, and to the extent possible, farmland allocated to them. Ward related that what was first thought to be an influx of Nigerien refugees into Gwadabawa district was in fact a temporary flight from French military conscription. This information was not totally correct. Although apparently no new settlements were established in the study area by refugees from the 1930-32 famine, Tozai elders recollected that about ten Zarma families joined their village at this time. Moreover, a large village south of the study area was reportedly founded in the early 1930s by refugees from Niger. Its people speak Zarma to this day.

The famine apparently did end after the 1932 harvest, which, owing to good rainfall (766mm in Sokoto), the nearly complete absence of locust and freedom from epidemics, was judged to have been "excellent," "abundant," and "very

satisfactory." In Argungu, where food shortages and asset liquidation were acknowledged to have occurred during the 1932 hungry season, food prices fell to levels 25-30 percent below those of the preceding year (NAK SNP. 18. 921).

The 1932 harvest marked the beginning of what may generally be considered a famine-free decade. The Sokoto Province reports for these years indicate fluctuations in harvest quality, but no food shortages comparable to those of the 1910s, 1920s, and the 1930-32 interval. With some exceptions, the province administration recorded gains in human and livestock populations.

In 1933, John H. Carrow, "Commander," reported that locust again appeared throughout Sokoto Province, but damage was slight and harvests "well up to average." Extremely low cereal prices prevailed in many parts of the province that year (NAK SOKPROF. 598. 3133). Annual rainfall in Sokoto was 805mm. The 414mm recorded in Sokoto in 1934 was rather well distributed, and although Carrow reported the fifth annual locust visitation, damage was minimal and a "fairly good" harvest was had. Cereal prices, however, "rallied." The low rainfall total was responsible for the desiccation of wells and the poor condition of trees (NAK SOKPROF. 705. 3554). The 767mm that fell in 1935 in Sokoto redressed this problem, and although yields were somewhat reduced by saturation, a "good average" harvest was realized. The effects of famine had "disappeared" in the Zuru area, and

the tax assessment was increased accordingly (NAK SOKPROF. 722. 5757).

Rainfall in 1936 was exceptionally heavy (1025mm in Sokoto). The 476mm recorded in August probably informed Carrow's judgment that rainfall had been poorly distributed "from the farmer's point of view." Rice crops failed north of Sokoto and in the Birnin Kebbi area, but on the whole the harvest was deemed better than in either 1934 or 1935 (NAK SOKPROF. 883. 4464). Despite a deficient June (36mm), 1937 rainfall in Sokoto totaled 738mm, and good food crops were produced. Harvests in the northernmost districts were surprisingly good (NAK SNP. 17. 29664).

In his 1938 province report, Carrow did not comment directly on the quality of food crop harvests. He instead lamented the low prices of cotton and peanuts, which had reached their nadir in October 1938. A September 1938 report from another archival source indicated that the millet harvest had been good, and the prospects for sorghum "excellent"¹ (NAK SOKPROF. 456. 1964). But during the bazara season of 1938, a devastating epidemic of cerebro-spinal meningitis killed an estimated 37,000 people in Sokoto division and 8,000 in Argungu (NAK SOKPROF. 1023. 5104). Certainly a very large proportion of the victims were children.

Mr. R. D. Ross, the new Resident, reported 1939 harvests as "good" and "excellent," while the rise in the prices of export crops was "encouraging." The far northern

districts of Gwadabawa, Gada, and Tangaza had enjoyed their best millet crop since 1932. No epidemics were reported. A population decrease of nearly 13,000 in the province was attributed to a better census and the emigration of "semi-nomadic settlers near the French border" (NAK SOKPROF. 1142. 5452). Ross considered 1940 rainfall, which totaled 651mm, to be below average. Excepting failures of rice crops, food crop production was "fair" (NAK SNP. 17. 33155).

Colonial officers' reports during the years 1933-40 convey a sense of urgency about environmental degradation in the northern tier of Sokoto Province districts. Stebbing's (1935) alarmist view of a relentlessly advancing Sahara desert probably inspired these concerns. In 1936 Carrow described Gwadabawa as a once-fertile and productive region now "embarrassed" by soil erosion and deforestation. Only 100 bundles of grain could be produced on farms that formerly yielded 400. Men had to embark on long-distance dry season migrations in order to feed their families and pay taxes, and a "certain degree" of permanent emigration had been noted (NAK SOKPROF. 883. 4464).

The report of the Anglo-French forestry commission, submitted in 1937, to some extent allayed fears of naturally occurring desert encroachment. Its authors instead fixed blame for land degradation on "harmful and wasteful" farming practices (NAK SNP. 17. 29664), a view colonial administrators would also modify in later years. The 1938 province report related that efforts to institute "mixed

farming" (animal traction, chiefly with oxen) in the northern districts had been abandoned. Village firewood plantations were prescribed for Gwadabawa district. Dung and crop residues could then be left on farms to enhance soil fertility instead of being used for cooking fires (NAK SOKPROF. 1023. 5104). Additional administration prescriptions for improving the allegedly prodigal agronomic practices included delaying the first two farming operations (sassabe and turbe) and preserving undergrowth and termite mounds. The abundant 1939 harvests in the northern districts were attributed in part to these and other measures (NAK SOKPROF. 1142. 5452). After the very mediocre 1940 rainy season, however, Resident Ross seems to have come around to a more moderate and, in light of Tucker et al.'s (1991) recent work, more accurate view of environmental degradation and dryland ecology. "Natural regeneration on light sandy soils" he wrote, "can only occur in years when rainfall is unusually heavy and well distributed" (NAK SNP. 17. 33155).

A major and related concern of the colonial administration was immigration into frontier districts from Niger. In 1933, for example, a "considerable number" of recently settled Nigeriens were reported in Gwadabawa district. The administration suggested rather benignly that their settlements be amalgamated in a new "village area" (NAK SOKPROF. 598. 3133). (This was not accomplished until two decades later, and then only partially.) By 1936

official opinion had turned against the immigrants, "whose wasteful and ignorant methods of farming lead to excessive deforestation and degradation of the soil (NAK SOKPROF. 883. 4464)." What attracted Nigerien farming families to Gwadabawa and the study area was, according to the administration, the large number of deep wells sunk by the geological department. These humanitarian efforts had therefore inadvertently exacerbated deforestation and soil erosion by attracting too many people.

Study area elders offered strikingly different accounts of immigration and the agro-ecological situation during the reign of Hassan dan Ma'azu as Sultan of Sokoto (1931-38). Nigeriens migrated to the study area not on account of the wells, but to escape French forced labor. They established hamlets in the hinterlands of existing villages, including Dan Tudu near Amarawa. Abrugel, Zango, and Lisawol were other hamlets founded by these refugees, as well as the northern Hausa satellite settlement of Tudun Gudali Mai Ruwa. Probably the Hausa hamlet to the south of Tudun Gudali Mai Ruwa's nuclear settlement, and Gidan Alkasim's Zangon Yamma were also established by refugees at this time. Examples of the immigrants' villages of origin are Magozo, Shiyya, Malawa (near Giden Ider), and Takar. Residents of the host villages by and large accepted the migrants without consternation. This was true even in the case of Dan Tudu, whose founders constructed compounds on an established farm. The extent of uncultivated bushlands and fallowed land was

greatly reduced by the immigration and resettlement, but wells avowedly never dried up.

That the 1932-40 period was free from famine is consonant with study area informants' perceptions. Several bounteous harvests in the years following Shekara Kyamro were achieved without alterations of agronomic practices. The Birnin Konni rainfall series, which begins in 1933, indicates that rainfall was adequate and in some years abundant (Appendix 3). Despite a relatively low annual total, 1934 rainfall was fairly well distributed. Perhaps the monthly totals for July 1935 and August 1938 were somewhat deficient. The rainfall record, rather than British tutelage, probably explains the great harvests of 1937 and 1939. The rains of both years began early, ended late, and were well distributed.

The 1941-51 Period

The famine of 1942-43 was the third widespread excruciating colonial-era famine. It will be recalled that 1940 harvests were judged to have been only "fair." According to Resident Carrow, harvests in 1941 were below average. Although annual rainfall was adequate (580mm in Sokoto), its distribution reportedly was not favorable to agriculture. The below average total of 433mm for Birnin Konni seems to have been fairly well distributed (Appendix 3). Food prices had risen in Sokoto Province, but the large sums paid to farmers "on military measures" created "relative prosperity" (NAK SNP. 33. 155).

Rainfall in 1942 was reportedly deficient for the third consecutive year. In Sokoto 499mm were recorded. Monthly rainfall totals at Birnin Konni were slightly lower than the previous year's. Elders recall that a very late replanting was necessary. As a result millet either failed or was "dwarfed," but the sorghum harvest was not too bad. Carrow reported that millet crops had been "light" in the north and northeast of Sokoto division. On the whole, the province produced a "good average crop" of sorghum, and cowpeas "yielded well everywhere." In 1942 the government's requirements for grain and peanuts could no longer be satisfied through purchases on the open market. Requisitioning therefore became necessary. By the end of the year, a total of 427 tons of peanuts, 3,550 tons of corn, and 3,400 tons of millet had been amassed in Gusau. Although food prices "soared," Carrow acknowledged "only a slight shortage in some of the commoner foodstuffs." A sharp increase in the incidence of smallpox was attributed to the succession of droughty years² (NAK SOKPROF. 1262. 6014).

In his 1943 Sokoto Province report, Acting Resident Captain H. B. Leonard made no mention of famine despite the correspondence on the plight of refugees cited in chapter three. The only hint of hardship was that the bumper crop of 1943 enabled farmers to replenish granaries depleted by military requisitions and three previous poor harvests. Money was "pouring into peasants' pockets," and taxes had

been collected "in record time." The deleterious effects of guinea worm had been noted in the northern districts. In Kaura Namoda, thirteen women had set up an industry for manufacturing cassava flour, which was in good demand among the local people³ (NAK SOKPROF. 1284. 6110).

The 1942-43 famine is known in the study area as Takesharbo or Mazarkwaila. This latter name means "brown sugar;" its significance could not be ascertained. The former term suggests that the famine caused unripened millet to be cut down (sharba) and brought home. Takesharbo is most frequently associated with Fithitla na Jamus, a Hausa pun used in referring to World War II.⁴ Some elders attributed this famine less to climatic misfortune than to government actions. The most pernicious and bitterly remembered of these was "aikin dole na gudjiya," or the forced labor of peanuts. Because this crop was not cultivated locally, men were forced either to trek or to travel by donkey to peanut-producing areas. Talata Mafara, approximately 150 kilometers southeast of the study area, was the most frequently cited destination. Here men had to seek wage labor in order to be able to purchase their quota, which one elder recalled was two 20-liter tins of shelled peanuts. Informants suggested that cash compensation was paid, but that traditional authorities "intercepted" these sums. The conjuncture that led to the famine Takesharbo therefore involved forced migrations of 300 kilometers, the

diversion of men's labor from their own farms, and a failed 1942 millet crop.

The next famine to affect the study area has been named Shago after a local boxer who "conquered all." The precise year of Shago could not be determined. Informants' recollections encompassed the period from three years to nine years after Takesharbo (i.e. 1946-52). Some elders stated that if Shago occurred, then they had forgotten it. This famine is most often described as a period of intense seasonal hunger that lasted from the second weeding (mai-mai) until the harvest. Archival sources recount wide variations in the quality of harvests during the years 1944-51. These reports and the Birnin Konni rainfall series suggest that Shago occurred during either the 1946-47 or the 1950-52 period.

The 1944 Sokoto Province report stated that despite localized harvest failures, millet and sorghum crops had been good and that only rice was in short supply (NAK SOKPROF. 1316. 6212). In Sokoto, the distribution of the 655mm of rain was less than ideal, as only 51mm were recorded in June. Although July was droughty in Birnin Konni, the 466mm recorded there was otherwise well distributed.

The 1945 harvests were variable: millet was "fair," rice "poor," sorghum "good." "Abnormally heavy" rains (782mm in Sokoto) caused damage to buildings and bridges. The total for Birnin Konni was above average, but the 40mm

recorded in June suggests that the farming season began late. Acting Resident McCabe related that the peasants were happy because the end of the war marked the end of military conscription and government requisitioning (NAK SOKPROF. 1364. 6319).

The 1946-47 interval was the first documented example from Sokoto Province of a famine triggered by poorly timed and excessive rainfall. It was not to be the last. The 1946 total for Sokoto was 969mm, with 115mm falling in June, 196mm in July, 355mm in August, and 234mm in September. In Birnin Konni, the highest June total on record, 159mm, was followed by near-average totals in the succeeding three months. The number of rain days, however, was unusually high. July was punctuated by three four-day rainless intervals, but the longest break in August was between the 27th and 31st (ORSTOM, 1976). Labor demands for weeding operations must have been extreme. Resident McCabe's 1946 province report signalled major harvest failures, especially in low-lying areas. Food was reported to be in good supply, even though prices failed to fall after the 1946 harvest. McCabe attributed this to a lack of textiles and other consumer goods on which people could spend rising incomes. Migration to southeastern Sokoto Province from northern districts was described as a trend (NAK SNP. 17. 41874).

The next year Senior Resident Mr. B. E. Sharwood-Smith reported that the 1946 harvest had been a failure (NAK SNP. 17. 43499). In the first months of 1947, grain prices

reached record high levels, and hardship was almost universal. Reports reached the administration that "whole communities were reduced to supplementing their meager stocks of farm produce by recourse to herbs, grasses and lily bulbs." Sharwood-Smith did not specify the areas in which this occurred, but food prices were highest in the western part of Sokoto Province. The young men trekking to seasonal migration destinations were reportedly "as numerous as ever." Population pressure was causing permanent migration to areas farther south. A second population "drift" was discernible from northern districts to the Zamfara Valley. The 1946 harvest failure and the famine that followed motivated farmers to plant more food crops and fewer cash crops. This was welcome in the short term as inflationary pressures were expected to be reduced as a result.

Although the 598mm of rainfall recorded in Sokoto in 1947 were not well distributed (85mm in June, 86mm in July, 277mm in August, and 96mm in September), harvests were apparently adequate. Grain was "everywhere abundant" and prices fell accordingly (NAK SNP. 17. 43499). The 515mm in Birnin Konni seem to have been adequately distributed, with no major breaks apart from a nine-day rainless period from June 15th to the 24th (ORSTOM, 1976).

At the end of 1948 Sharwood-Smith reported that food had been relatively plentiful "by Sokoto standards, which are not high." He had been told that a sharp price increase

at Gusau markets during the summer months could be attributed to a spate of heaving buying motivated by the sighting of a comet, "reputedly the inevitable harbinger of a bad harvest." Nevertheless, harvests overall apparently turned out to be good. The trade in livestock skins declined markedly from July to December. Healthy rises in cash crop prices and good grain harvests obviated the need for farmers to raise money by selling their animals (NAK SNP. 17. 43499). The 690mm of rainfall in Sokoto in 1948 apparently did not cause serious crop damage. The monthly distribution was not very different from 1946 except in the case of September rainfall which, at 155mm, was 80mm less than the corresponding month of the famine-catalyzing year. Argungu, where 387mm of rainfall in August "perhaps" caused serious damage to millet crops, may have been an exception. An unspecified number of Zarma people who had settled in this division returned to western Niger. Their return migration was supposedly prompted by news of good harvests in their homelands (NAK SOKPROF. 1643. 7225/S.1).

Only 481mm were measured in Birnin Konni during the 1948 rainy season. The monthly totals suggest that it was reasonably well distributed. Rainless periods, however, occurred during June 24-July 1, July 17-24, and August 16-25 (ORSTOM, 1976). A 1948 report from the "Experimental Unit" farm at Tarike (c. 15 kilometers south of Illela) indicated that no practical and economical means existed for improving soil fertility in Gwadabawa district. Fallowing, either

with or without manure, was effective, but high population densities (115,744 people on 1,018 square miles, i.e. 114/square mile) severely limited the potential for employing this strategy. The area was devoid of forest cover (NAK SOKPROF. 1177. 5590). Sharwood-Smith's saturnine assessment was that Sokoto Province's soils were steadily deteriorating as its population continually increased. In 1947 the enumerated population of the province exceeded two million for the first time (NAK SNP. 17. 43499).

Birnin Konni rainfall in 1949 amounted to only 440mm. If farmers planted after the 39mm rain event on May 19 (ORSTOM, 1976), they probably had to plant again in mid or late June, or even during the first week of July. Annual rainfall in Sokoto was 493mm (monthly totals are not available). According to Sharwood-Smith, nature had been "wayward," and famine at one point seemed imminent. The sorghum crop was poor in Sokoto Province, but millet crops "survived" and in the western districts were reported as "well above average." In the Senior Resident's view the threat of famine had therefore receded at least until May or June of 1950. Censuses found that the province's population had grown by only 3,000 instead of the "usual" annual increase of 20,000. A disastrous cerebro-spinal meningitis epidemic had claimed an estimated 15,000 lives. Only five medical officers were stationed in the province, yet sulfa drugs reportedly saved two of every three infected individuals. The epidemic seems to have evoked empathy in

Sharwood-Smith, who argued that on a proportional basis it had had the same impact on Sokoto Province as World War II had had on Great Britain. Another insightful observation concerning the Sokoto Close Settled Zone presaged Esther Boserup's frequently cited theory: ". . . the standard of farming practices improves in direct relation to the pressure on the land . . . the peasants will improve their methods only when forced to do so." Despite these forced improvements, migration had been detected from densely settled zones to "more empty lands" (NAK SNP. 17. 45603).

In his 1950 Sokoto Province report, Acting Resident Mr. A. T. Weatherhead wrote that the year had commenced with pestilence, and appeared for a time that it would end in famine (NAK SOKPROF. 1699. 7644). The pestilence was yet another cerebro-spinal meningitis epidemic, but as the province's population reportedly increased by 21,000, its effects were judged to have been "far short" of the previous year's outbreak. The foreboding time must have been the month of June, during which only 10mm of rainfall were recorded in Sokoto. But the rains rallied in July (149mm), became exceptionally heavy in August (443mm), and were abundant for September (193mm). The Sokoto annual total attained 853mm. Flooding in the Rima River valley caused a total failure of the rice crop, but other food crops apparently did well. Millet prices plummeted in October (Figures 4.2 and 4.3).

Birnin Konni received a well above average 742mm in 1950. The daily record again indicates that the definitive planting may have been delayed until the first week of July. Of the 44mm recorded in June, 32mm fell on the 5th of that month (ORSTOM, 1976). August rainfall was perhaps too abundant for some crops. A report telegraphed from the Gusau agriculture office in January 1951 indicated that food shortages were expected in the Isa and Sabon Birni areas⁵ (c. 120 kilometers west-southwest of the study area) (NAK SOKPROF. 457. 1964).

Apart from a low June total (62mm), the 590mm that fell in Sokoto in 1951 seem to have been adequately distributed. The Birnin Konni station recorded an annual total of 673mm. Again, grain crops may not have germinated successfully in June. Five rain events yielded 55mm in that month, but 31mm fell on the sixth and 13mm on the 21st. A dry spell then spanned the June 26-July 7 period (ORSTOM, 1976). Millet failed almost completely at the experimental farm in Tarike. Rainfall had been poor in July, at which time grain was reportedly unavailable in the countryside (NAK SOKPROF. 1733. 7778/S.1). (This farm, however, had been established on land that "native" farmers had abandoned because of its infertility; NAK SOKPROF. 1177. 5590.) A telegraphed report dated October 2, 1951, advised of partial local crop failures in northern areas (NAK SOKPROF. 457. 1964). In Argungu, an average millet crop was reaped amid local failures. Early planted varieties of sorghum did well, but

heavy late season rains reduced harvests of late planted varieties to average quantities. In some areas of Gwandu, crops were deemed to have been the best in many years, and were reported as "excellent" everywhere else in the division. Grain prices in Gusau and Sokoto fell during July-October 1951 (Figures 4.2 and 4.3). Their rather early rebound was thought to reflect the patchiness of the province harvest, although at least in Gusau, the disruption of rail transport and high export crop prices also played roles (NAK SOKPROF. 457. 1964). Over most of the first half of 1952, prices were higher than during the corresponding period of the previous year.

The 1952-59 Period

That the 1950s was a decade of abundant rainfall, and in retrospect, a climatic optimum, is manifest in numerous annual rainfall series. Nicholson's (1989) and P. J. Lamb et al.'s (1986) rainfall departure indices for the entire Sahel and Sudan of northern Africa show a succession of well above average years. From 1952 through 1958, every annual total in Sokoto surpassed 700mm. In 1959, only 561mm were recorded, but 900mm fell in 1960. The pluviosity of the 1950s is also evident in the record of annual totals for Birnin Konni (Appendix 3). Many elders' recollections of this period perhaps have been distorted by nostalgia. Jubilant shouts of "tuwon dawa" (sorghum paste) rang out across the upland farms, and yields were so copious that farmers could not harvest and store all of their crops.

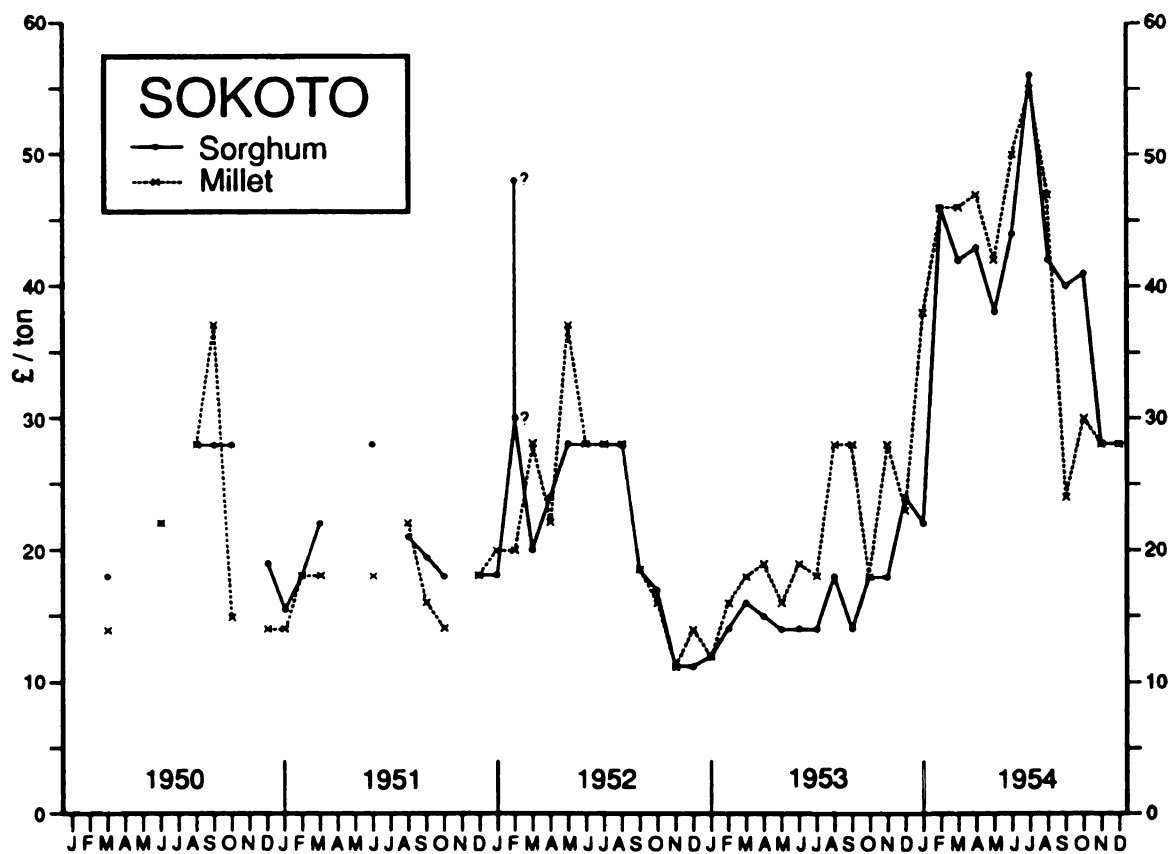


Figure 4.2: Grain Prices in Sokoto City, 1950-54
Source: NAK SOKPROF. 457. 1964

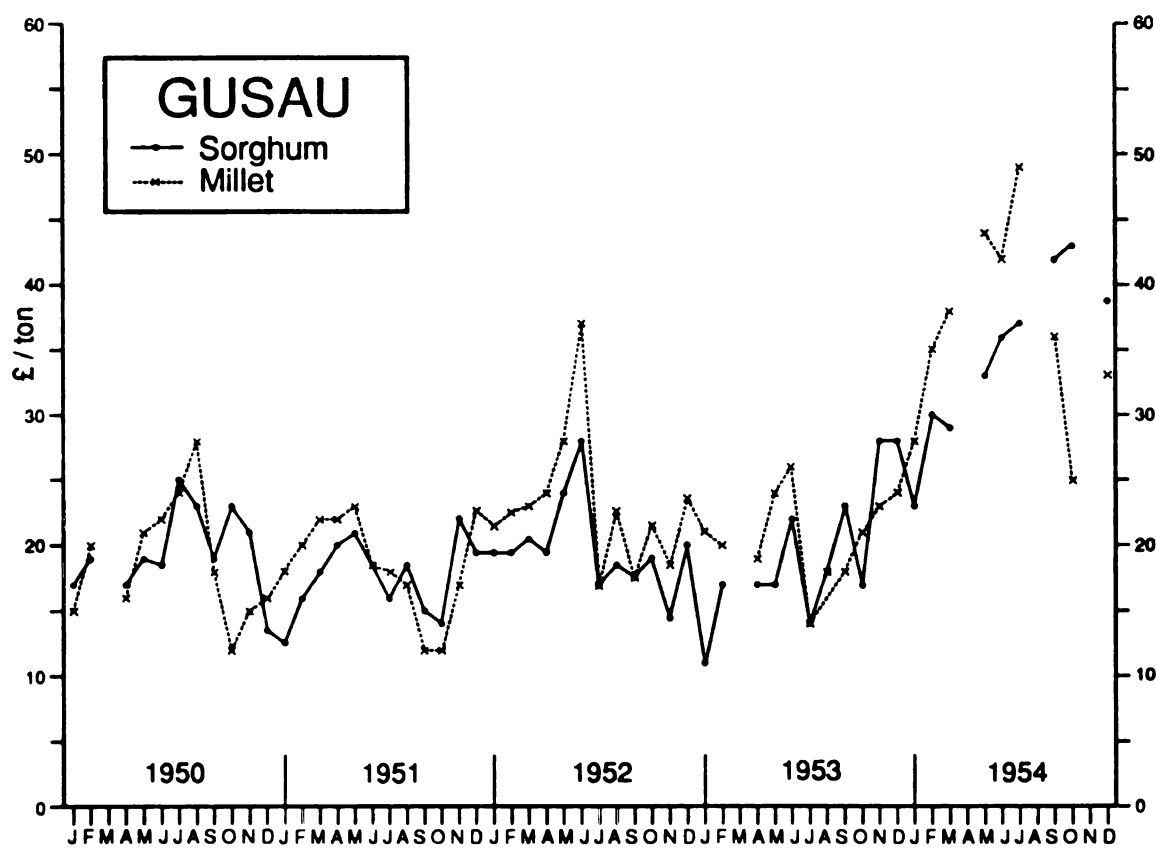


Figure 4.3: Grain Prices in Gusau, 1950-54
Source: NAK SOKPROF.457.1964

Yet in one year the capriciousness of the West African monsoon resulted in grievous and pervasive suffering. According to most elders, Muda, the famine of 1953-54, was the most severe ever to strike the study area. Its name suggests a man warning his wife that he will divorce her if she persists in pressuring (muda) him to procure food. The 1953-54 famine was also widespread. It is known throughout Sokoto State as Muda. Although 1954 is included in Watts's famine chronology for northern Katsina (Table 4.2), he described it elsewhere as a "food scare" and a "poor harvest" (Watts, 1983:346,568). Hill (1972), however, determined that harvest failure in 1953 led to the 1954 famine Uwar Sani in Batagarawa (only 25 kilometers from Watts's study village). Mortimore's (1989) chronology for northern Kano indicates that a famine occurred during the interval 1954-57. Oguntinyinbo (1981) ascribed famine in Kano and Borno to heavy rainfall in the years 1951-54, and Fuglestad (1983) stated that famine in Niger in 1953 or 1954 may have been caused by too much rain.⁶

In Sokoto the 1952 rains began late (30mm in June) but were abundant during the three following months. The annual total was 873mm. The 990mm received in Birnin Konni is the highest in that station's 59-year record. The monsoon was also tardy there, but totals for August and September are records (Appendix 3). This superabundance of rainfall did not trigger famine in 1952. The available evidence indicates that harvests were very good. Grain prices in

Sokoto fell to their lowest levels in the 1950-54 period (Figure 4.2). Higher post-harvest prices in Gusau were attributed to heavy rains restricting transport (Figure 4.3; NAK SOKPROF. 457. 1964).

The reason the 1953 rainy season was the catalyst of famine is difficult to determine from the monthly rainfall series. Sokoto received an annual total of 732mm, 140mm less than in 1952. The May total of 154mm was well above average. The 110mm for June, the 170mm for July, and the September total of 139mm could be considered good, but August's 139mm was a bit droughty. Birnin Konni's annual rainfall, 931mm, was 60mm less than the previous year's total. May, June, and August totals were above average, but certainly not anomalous. The 299mm in July, however, may well have been excessive (Appendix 3).

Study area farmers who departed from religious or teleological explanations of the cause of Muda stated that "ruwa sun hanna noma" ("rainfall prevented farming"). The daily rainfall series for 1953 suggests how this might have happened (Figure 4.4). Heavy rains in the first half of the farming season may have destroyed newly planted seeds and sprouting grain crops. According to Oguntoyimbo (1981), heavy rainfall on the upland soils of Northern Nigeria results in the sandy stratum covering the seeds. Some farmers' seed reserves were reportedly exhausted by numerous replantings. Heavy cloud cover and profuse weed growth

might also have contributed to harvest failures by retarding crops during critical developmental stages.

Additional perspectives on the disastrous 1953 farming season are found in the available district and divisional reports (NAK SOKPROF. 1790. 8142/S.1). In Gusau, heavy early season rainfall caused flooding on fadama farms and extensive damage to dry season crops just before they were due to be harvested. Dampness during the period of early growth caused a "set back" to millet from which it never fully recovered. Sorghum, however, reportedly did recover and yields were above average in districts to the south of Gusau. In Gwandu division, very heavy early rains provoked fear of a "near famine." Millet failed nearly everywhere. Hardship was expected in areas near Birnin Kebbi.

Resident Mr. K. P. Maddocks began his 1954 Sokoto Province report by relating that anxiety and hunger had caused a blight over the entire province during the first nine months of that year (NAK SOKPROF. 1843. 8318). The 1953 millet crop had been a failure. Food shortages had been acute and fear of famine nearly universal. Farmers had been too weak to cultivate, and there was much poverty and indebtedness. Three serious fights between Hausa farmers and Fulani herders had been made "more bitter by hunger." Censuses enumerated 64,460 fewer cattle than in 1953. Maddocks attributed this decrease to the Fulani having migrated to other provinces in search of less expensive grain. Although distress slaughtering was not mentioned,

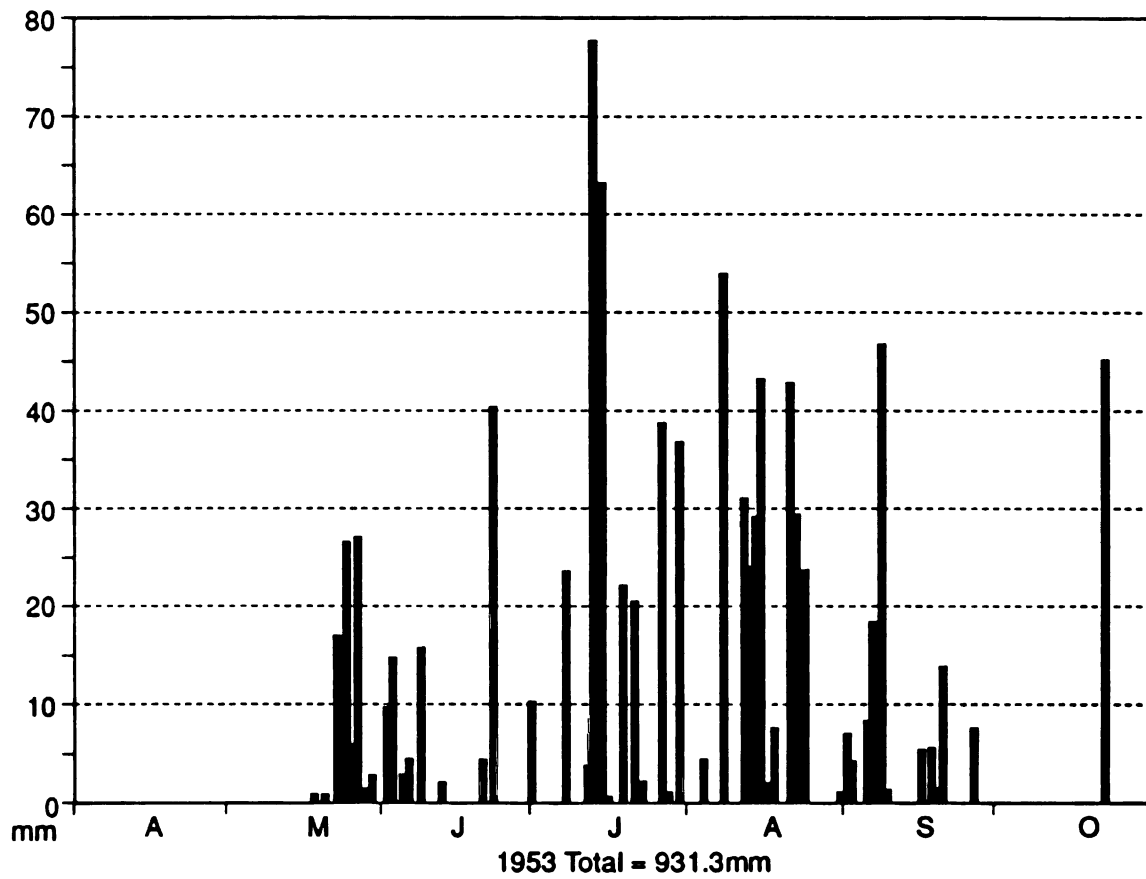


Figure 4.4: 1953 Daily Rainfall Series for Birnin Konni, Niger
Source: ORSTOM (1976)

some Fulani groups had been forced "by economic necessity" to take up farming. Jangali revenues diminished, and assessments for other taxes either remained constant or were reduced. Five hundred tons of grain were distributed by the Native Authority. Grain prices skyrocketed after November 1953 (Figures 4.2 and 4.3). Distress migrations had taken place before this exceptional post-harvest price increase. Maddocks reported that migration to the south and east of the province had been extremely heavy. The magnitude of famine-related migration from northern and central districts might be inferred from Table 4.3.⁷ Although morbidity and hospital check-ins had increased, no famine-related deaths were reported.

A major change in the settlement pattern of the study area took place in 1954. Most of the former refugee inhabitants of the hamlets established in the 1930s were forced by the Sarkin Gobir of Gwadabawa to found the nuclear village of Makwalla. Four families from Dan Tudu were relocated there, while the other four built compounds on the southeastern periphery of Amarawa. A few elders attested informally that the stresses and strife of Muda were responsible for this resettlement. The traditional authorities reportedly permitted hamlets in the orbits of Tudun Gudali Mai Ruwa and Gidan Alkasim to remain at their present sites. The only information regarding the study area in Maddocks's 1954 report was that the road from Gwadabawa to Kalmalo had been confirmed as "motorable."

**Table 4.3: Population Change in Eight Districts
of Northern Sokoto Province, 1952-1954**

<u>District</u>	1952*	1953+	1954+
Kebbi	27,454	25,090	23,983
Gummi	69,120	51,037	47,274
Bukwium	42,918	32,586	33,192
Anka	23,303	17,772	17,767
Tangaza	57,145	49,961	47,297
Gwadabawa	158,545	ND	140,293
Gada	73,024	62,359	65,647
Goronyo	68,415	58,981	57,701

* Census results

+ Tax Returns

ND = No Data

SOURCE: NAK Sokprof.

1778.8059 (1952-55)

According to informants, the road from Illela and Amarawa to Gwadabawa remained a dirt track.

Although the 1954 monsoon arrived late in both Sokoto and Birnin Konni, heavy rains from July to September resulted in good yields of food crops (but poor export crop production). Sorghum was "excellent." Grain prices fell after July, but remained relatively high during the immediate post-harvest period (Figures 4.2 and 4.3). According to Maddocks, they were likely to remain at these levels because farmers were building up their grain reserves (NAK SOKPROF. 1843. 8318).

Study area elders' testimony indicated that another famine-free decade commenced at the 1954 harvest. A 1959 famine in the "Sokoto-Illela area" during which "no one died" was not recalled (Watts, 1983:375,571). Elsewhere in the central Sahel, famines reportedly occurred in the latter half of the 1950s (Table 4.2). The majority of elders recounted good or excellent harvest over this period. A minority view is that major gaps in food self-sufficiency began in the aftermath of Muda.

The 1960-67 Period

Several events of ecological and economic significance occurred in the study area during the early 1960s. Near the village of Dan Boka in the 1960-61 dry season, ground water spontaneously issued forth in abundance from wells and depressions. This water was reputed to have had miraculous healing powers, and people traveled great distances to

obtain a quantity. One or two years after this event the spring (marmaro) near the village of Lafani dried up. Also in the early 1960s, the low-lying lands near Lakoda and Tozai became incapable of supporting dry season agriculture. The people of Tozai were forced intermittently to retrieve water from settlements 2-3.5 kilometers away.

Skekara Yar Bari, "the year of leaving wilted young crops," was probably the 1963 census year. An early season storm resulted in very heavy precipitation. (There is no indication of such a rain event in the Birnin Konni daily rainfall series.) Most farmers planted, and grain crops subsequently began to develop. But the incipient crops withered in the absence of additional early rains. Traditional authorities and religious leaders urged farmers not to "kill" these withered crops when tilling and replanting. Informants averred that those who heeded this advice were rewarded with bounteous harvests; those who ignored it got average or poor yields. Reportedly a rough gravel road linking Gwadabawa and Illela was completed in 1964.

Watts (1983b:37) traced the origin of the early 1970s famine to a "largely unperceived" series of drought years in the 1960s. It may indeed be difficult to discern drought in the available rainfall series. But the 1965-66 famine Mai Zobe is indelible in the memories of the people of the Illela area. The timing of this famine is unmistakable: hardship was already intense when the January 1966 coup and

the assassinations of Ahmadu Bello (the Sardauna of Sokoto) and Tafawa Balewa (the prime minister of Nigeria) were reported.

The catalytic cause of famine is once again to be found in the temporal distribution of rainfall, not in the annual total. Birnin Konni received an above average 572mm in 1965 (Figure 4.5). But the June total was a paltry 26mm, all of which fell between the seventh and 17th of the month. Only 68mm were received in July; dry spells occurred from the second to the ninth, and again from the 11th through the 19th. August rainfall, 191mm, was about average and fairly well distributed. The 221mm September total was not unprecedented. It would seem that an above average September might have compensated for deficiencies earlier in the season. Instead, according to study area farmers, it caused a near-total failure of the sorghum crop. All ten September rain events occurred from the first to the 21st, and four of these were exceptionally heavy downpours; 41mm on the fourth, 29mm on the ninth, 33mm on the 12th, and 50mm on the 16th (ORSTOM, 1976). Millet crops were average or below average as a consequence of the very droughty June and July. For some farmers poorly distributed rainfall in 1966 resulted in the second consecutive year of lean harvests and the continuation of hardship into 1967.

Mai Zobe was certainly much more than a localized food shortage. Its name, "characterized by a ring," implies that hardship encompassed an area of such extent that no one

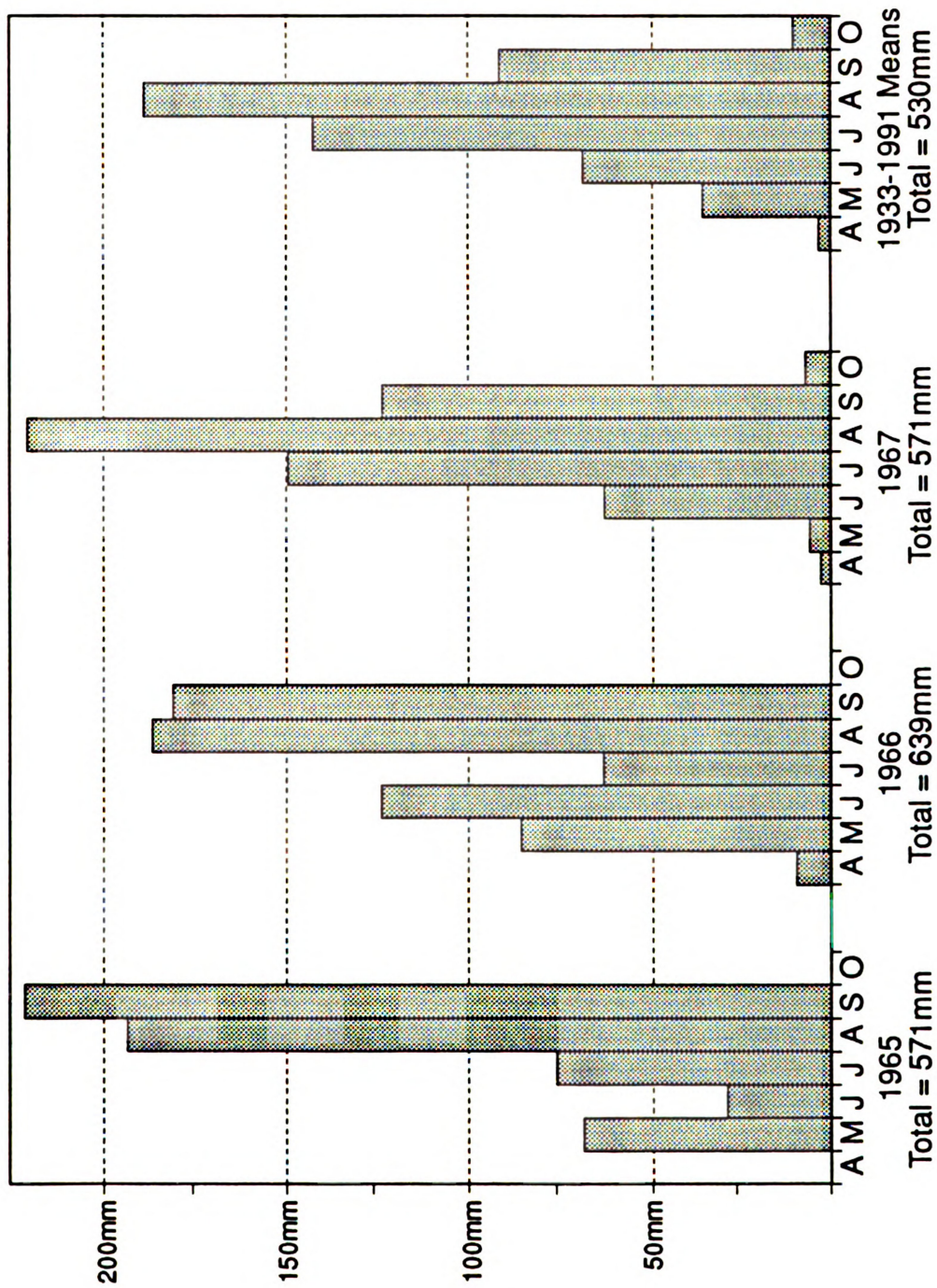


Figure 4.5: Birnin Konni Monthly Rainfall, 1965-67 and 1933-91 Monthly Means
Source: Hulme (1992)

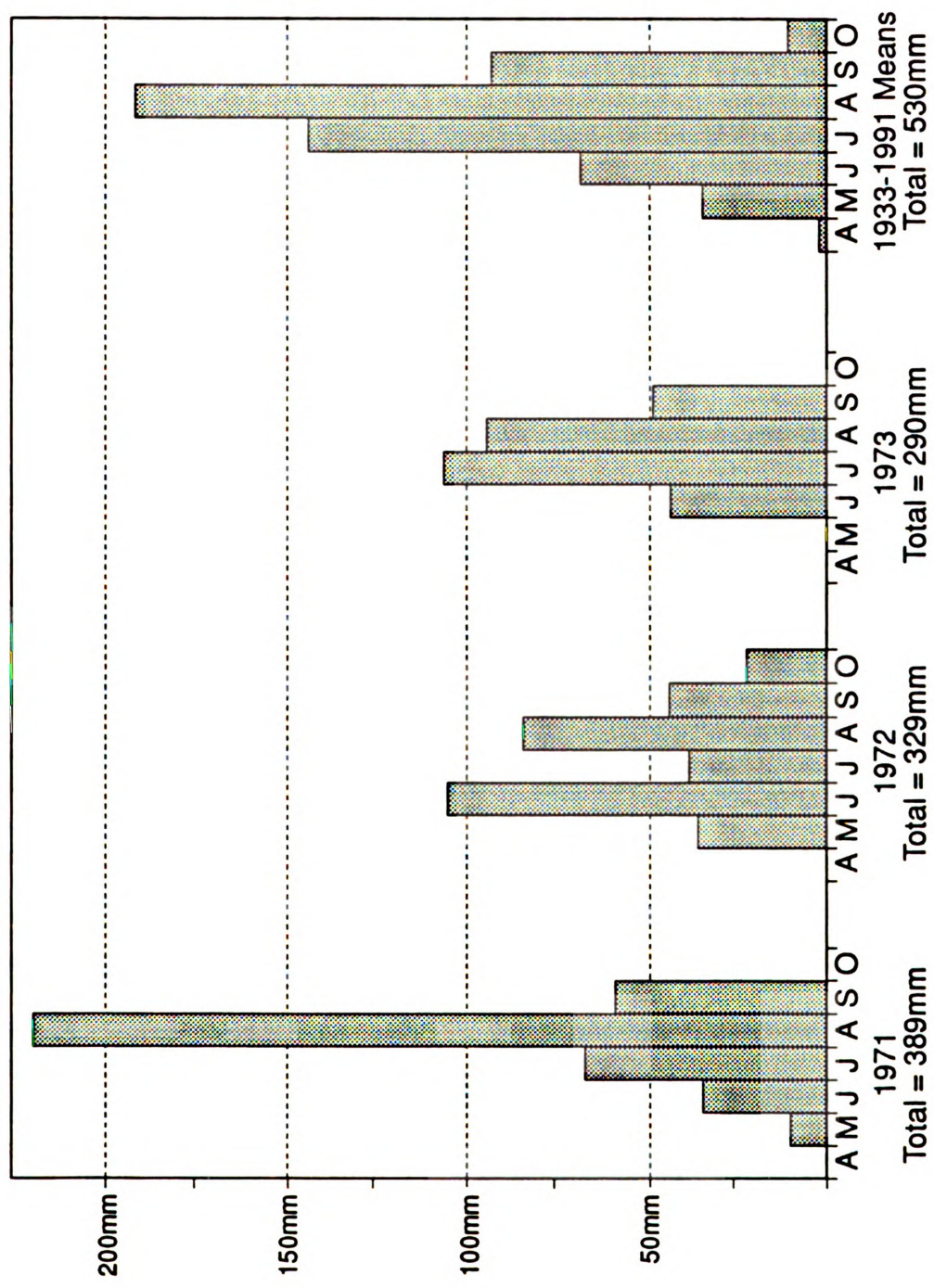


Figure 4.6: Birnin Konni Monthly Rainfall, 1971-73 and 1933-91 Monthly Means
Source: Hulme (1992)

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could escape. Buzu agro-pastoralists interviewed in the study area attested that Mai Zobe was severe in villages 50-60 kilometers north of Illela. USAID's first disaster assistance to Niger was undertaken in 1966 in response to major harvest failures (USAID, 1992). The years 1964-65 and 1967-68 are included in Mortimore's (1989) famine chronology for northern Kano State. Hill (1972:7) related that grain was "very scarce" during September and October 1967 in Batagarawa.

The 1968-80 Period

For hundreds of Sahelian localities, a diachronic account of agro-ecological conditions and famine would at this point begin to address the deterioration in climate that culminated in the 1972-74 calamity. This is not the case in the study area for two principal reasons. First, monthly rainfall series for Birnin Konni strongly suggest that climate did not deteriorate until at least 1971. Although June in 1967, 1969, and 1970 could be considered deficient, all other rainy season months during the period 1967-70 approached or exceeded the averages. Second, study area informants are nearly equally divided as to whether famine occurred in the early 1970s. This was one of the most surprising findings of field research. All of Nigeria north of the 12th parallel was declared a disaster area by the federal government in 1973. Reports summarized by Van Apeldoorn (1978, 1981) recounted near-total harvest failures and distress migration in northern Sokoto and the study

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area. Grain prices in Sokoto were reportedly higher than almost anywhere else in Northern Nigeria. By April 1973, millet had risen to ₦200/ton from a pre-drought price of ₦50/ton (Watts, 1983). Prothero (1974) identified Gwadabawa District as one of the areas most severely affected by drought.

The series of annual totals for Birnin Konni do indicate that drought prevailed during the early 1970s (Appendix 3). The 1971 monsoon arrived rather tardily; only above-average rainfall in August and a not-too-droughty September may have salvaged the farming season (Figure 4.6). The 1972 total, 329 mm, is the second lowest on record, with the worst July, the fifth worst August, and the sixth worst September in the 1933-91 series. Although August, September, and especially July rainfall was greater in 1973 than in 1972, the 290 mm annual total is the lowest ever recorded.

Despite these exceptional rainfall statistics, and despite the published accounts of harvest failure and famine in and near Illela LGA, about half of the study area informants attested that there was no early 1970s famine. The timing is again unmistakable. The Kalmalo irrigation scheme was opened in 1972. The road from Gwadabawa to Amarawa and Illela was being tarred in 1972 and 1973. In January 1973 a currency change operation was initiated, and in the following months people began seeing Naira (the new unit of Nigerian currency) for the first time. Later that

year, a national census was conducted. Traditional authorities, including the Sarkin Gobir of Gwadabawa, were deposed for allegedly mishandling food relief. Many Amarawa informants, however, attributed these government interventions to traditional authorities' failure to support them following their bloody conflict with the "Dossawa" Fulani. The president of Nigeria, Yakuba Gowon, visited the study area in early 1974, when famine supposedly was nearing its peak of intensity. The only coup in the history of Niger took place shortly thereafter.

Group interview participants in Araba related that "akwai alama yunwa, amma da dama" ("there were signs of famine, but moderate"). No name had been given to this episode because there was no real hardship. Elders in Rungumawa stated that food was expensive, but neither drought nor hunger was bad. No famine occurred in Gaeti or Lafani, according to these villages' elders. In Lakoda there was "wahalla" (hardship), but people had been able to stock grains and otherwise prepare for it through their activities at "wurin bida" (seasonal migration destinations). Groups of elders in the Tudun Gudali Mai Ruwa nuclear settlement and in Amarawa also asserted that since there was no hardship, there was no name for the 1972-74 interval. A frequent general assessment was "yunwa Franci ta" (a famine of Niger). In the study area, "an yi hatsi" (millet was produced). Government grain distributions were seen as "help," not famine relief. They

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could have gotten along without them. A 1974 UNICEF report (in Campbell, 1977:199) indicating that harvests in the Birnin Konni area "remained tolerable" through 1973 accords with these elders' recollections.

Other groups of informants, and approximately half of the individual informants in Amarawa and Tudun Gudali Mai Ruwa, refer to 1972-74 as Muna Sane ("we know"). There are two interpretations of this term: "we know hunger is coming," and "we know hunger is coming and we had best prepare for it." But in Tozai, 1972-74 is remembered unequivocally as famine. Here its inexplicable name is 'Yar Taralle. Shekara Karmami, "the year of stunted crops," is a term applied either to 1972 or 1973 by some informants in the Gidan Alkasim hamlets and in the southern Hausa hamlet of Tudun Gudali Mai Ruwa. People in these settlements also know the name Muna Sane. That some study area households were not capable of preparing for hunger despite "knowing" of its coming will be demonstrated in chapter six.

In the study area and throughout the Sahel, the relatively good rains of 1974 resulted in good harvests and the end of famine. Informants did not substantiate a report of major harvest failures that year in the study area (Van Apeldoorn, 1978, 1981). The 1975-80 period seems on the whole to have been favorable for agriculture. Annual totals in Birnin Konni were all higher than 400mm. In three consecutive years (1976-78) rainfall was above the 1933-91 mean (Appendix 3). June rainfall was abundant in several

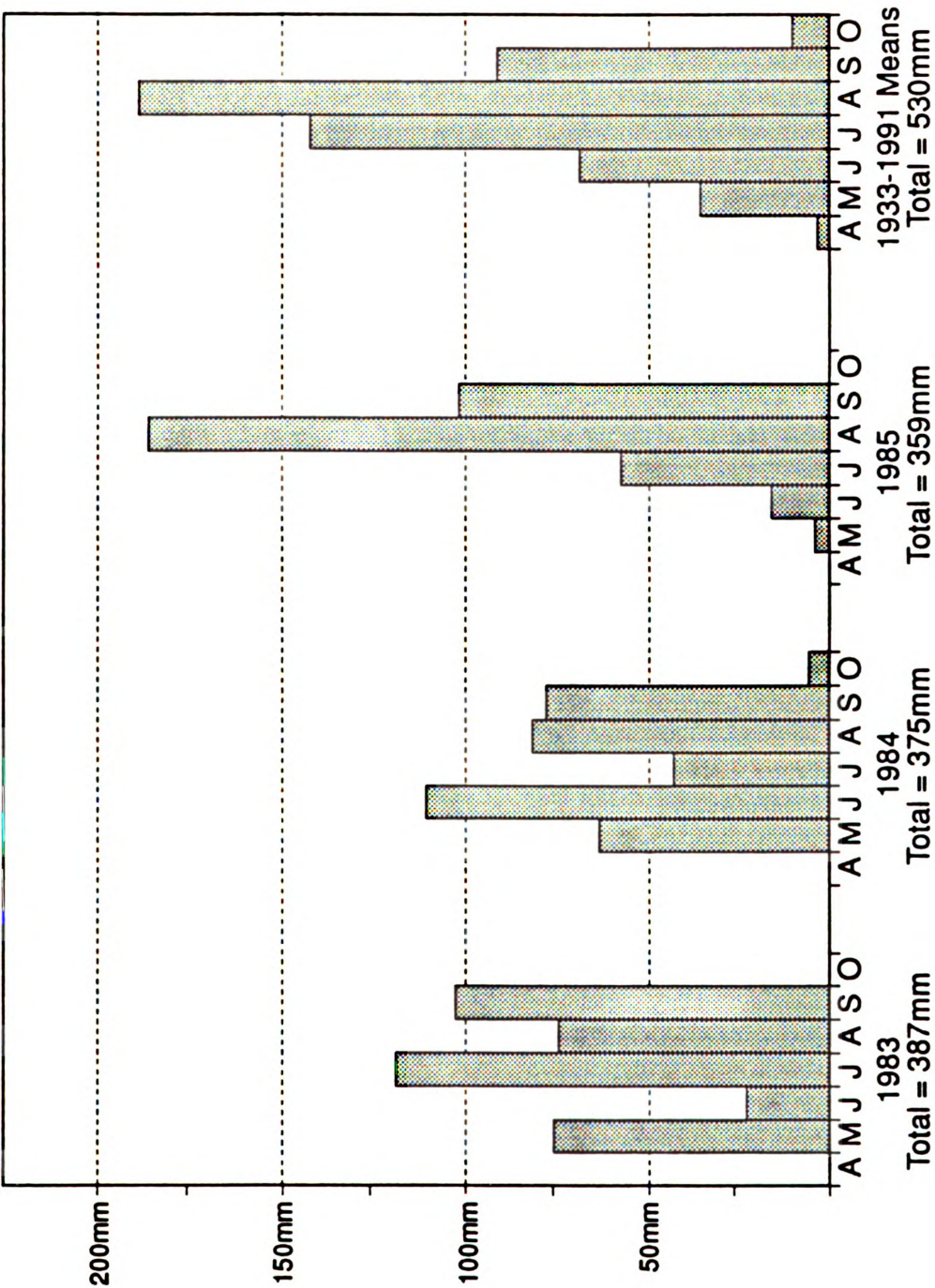


Figure 4.7: Birnin Konni Monthly Rainfall, 1983-85, and 1933-91 Monthly Means
Source: Hulme (1992)

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years, and only once (1975) was the total below 40mm. July and August, the two main rainy season months, had with one exception (July 1975) totals exceeding 100mm.

The 1980-85 Period

A run of five below average years commenced in 1981.⁸ That year was the first since 1973 to have an August total below 100mm. July 1982 was below 100mm, and September rainfall was the lowest since 1933. The first signs of famine were apparent to study area informants when Shehu Shagari began his second term as President of Nigeria in August, 1983. Rainfall in June (22mm) and August (72mm) of that year had been extremely poor, and partial harvest failures occurred (Figure 4.7). The 1984 rainy season apparently began well, but rainfall in July and August amounted to less than half of the mean values. Harvests were either partial or total failures.

The interval 1983-85 is known throughout Sokoto State as Buhariyya because it corresponded to Muhammadu Buhari's tenure as Nigeria's military head of state. Buhariyya is described almost without exception as yunwa (famine).

Shekara dan Buhari (the year of hardship and hunger associated with Buhari) is used to refer to c. August 1984 - c. August 1985, the period of greatest suffering. The hardship stemming from an acute shortage of grain was compounded by two adverse developments. First, the rapid currency change operation in April 1984 left many people with worthless money. Second, the Nigerian government

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closed the country's land borders, and commerce at border markets such as Illela's was curtailed as a result.

Lake Kalmalo dried up during Buhariyya, reportedly because a small dam upstream from it in Niger had been closed. Water ceased to occupy the tiny lake and stream bed to the north and east of Amarawa. Some of the wells in Gaeti, and nearly all of Lakoda's wells, became desiccated in 1983 or 1984.

The year 1985 was very good for study area farmers despite an annual total less than either 1983 or 1984. The monthly records show well below average rainfall in June and July, but near average August and September totals. A daily rainfall series would probably demonstrate that rain events resulting in modest precipitation occurred at very favorable intervals. In any case harvests were good or excellent according to informants. There is nearly universal agreement that famine had ended by the time Ibrahim Babangida became the President of Nigeria on August 28, 1985.

Summary

Significant parallels and differences exist between the chronology of twentieth century famines in the Illela area and those for other regions of the central Sahel (Table 4.2). A near turn-of-the-century famine in western Niger and Katsina/Daura also occurred in the Illela area, as did the Sahel-wide famines of 1913-14 and 1942-43. In contrast, famines during the early 1920s were recalled by only two

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groups of elders, and in 1926-27, famine may not have developed anywhere in this part of northern Sokoto, despite the severity of its impacts elsewhere in Northern Nigerian. The locust-induced famine of 1931-32, included in the western Niger chronology, also caused severe hardship in Illela-area villages and in many other parts of Sokoto Province.

A famine that apparently resulted in relatively minor hardship may have occurred during 1946-47, or, as was the case in regions to the east, during 1950-51. The 1953-54 famine was not only extremely severe but also regional in scope. So too was the 1965-67 famine. Evidence that the impacts of the mid-1980s famine were severe and widespread is also incontrovertible.

That the early 1970s famine reportedly had uneven impacts is important to assessments of vulnerability on both regional and local scales. The Illela-Birnin Konni area apparently escaped severe hardship, while people in regions not far to the east and north experienced often intense deprivation. In some Illela-area settlements, however, this famine is remembered clearly, while groups and individuals elsewhere attested that famine did not occur. Elders in Tozai, a water deficit village, specified without hesitation or equivocation the famine 'Yar Taralle as having occurred in the early 1970s. The possibility that lack of a perennial source of domestic water and dry season farmland

contributes to heightened vulnerability to famine will be examined further in the following chapters.

Although informants' memories sometimes may be imprecise and archival sources inaccurate, the available evidence suggests that spatial variations in vulnerability may have been considerable during colonial times. The 1926-27 famine could have been similar to the famine of the early 1970s. It was not recollected in the Illela locality, but appears in all of the chronologies in Table 4.2. According to archival documents, early 1920s famines in Sokoto Province were most severe in the vicinity of Kwarre and in areas farther west. Within the Illela area, their impacts may also have been uneven. For the most part, the Illela area also may have escaped famine in 1950-51, even though reports from the experimental farm located just 15 kilometers to the south indicated a near-total unavailability of grain in the surrounding countryside. Famine induced by excessive rainfall in 1946 was severe in some unspecified parts of Sokoto Province, but apparently not so in the Illela area.

This chapter has illustrated with concrete examples the validity of the axiom that the temporal distribution of rain events is more important than annual or even monthly totals. At least three famines were triggered by poorly timed and excessive rainfall. In 1965, low early season rainfall and torrential rainfall in September caused crop failures that led to famine in 1966. The 1946-47 famine, and the famine

of 1953-54 – the most severe in the memory of most informants – were attributable to saturation. On the other hand, severe famine did not develop as a consequence of three ostensible drought years. Daily rainfall series, were they available, might partly explain why the Illela area escaped major harvest failures and intense famine in the early 1970s, and why 1985 harvests were good despite an annual total less than either 1983 or 1984.

Desiccation in the Illela area apparently did not commence until the early 1960s, when two villages lost their dry season farmland and some wells first dried up. This problem became more acute in the early 1980s, when a stream ceased flowing and wells in Lakoda and other Illela-area settlements no longer provided water.

Other environmental changes were attributable in part to immigration. Nigerien refugees from French forced labor and famine increased population densities during the twentieth century. Fallowing became impossible, and Fulani herds could no longer pass the rainy season in the Illela area.

Several archival documents lend support to the proposition that population movements result in the spread of famine across space. Arnett's assertion in 1914 that refugees created major demands on Sokoto Province's food supply, thereby perpetuating famine, may well be correct. The movement during 1927 of people from Northern Nigerian border communities to Niger in response to lower food prices

suggests that Cutler's (1984) "ripple effect" occurred in West Africa in the colonial period. Inferences supporting the spread of famine are possible based on the 1943 correspondence on refugees and the 1952-54 population data. One report of return migration by refugees from the early 1930s famine was submitted in 1948.

Empirical case-by-case documentation of return migration, permanent out-migration, the diffusion of famine, spatial variations in vulnerability to famine, and recovery from famine is presented in chapters six and seven. Chapter five develops additional and more contemporary contexts for the presentation of data on these phenomena. The chronic lack of self-sufficiency in staple foods and the considerable interannual variations in levels of food self-sufficiency require constant forms of coping. It is from these coping strategies that famine-coping strategies, including migration, arise.

NOTES FOR CHAPTER FOUR

1. The British had established a system for monitoring the progress of the agricultural season. At least from June 1938 to July 1939 (when the archival file ends), an African monitor was submitting monthly reports from northern Sokoto Province to the agricultural office in Sokoto. His reports were written in Hausa. Examples include: July, 1938, from Gwadabawa, "Daminarsu duka ta yi kyau" ("the rainy season overall is good"); and May 16, 1939, from Gwadabawa, Isa, and Sabon Birni, "Wasu sun yi shibka, wasu basu yi ba, gero shi ne alamar kyau" ("Some have planted, some have not, the millet is showing good signs"). (NAK SOKPROF. 456. 1964). Famine early warning systems would have benefited from such basic field reporting in June 1993, when the region north of Maradi was designated "slightly vulnerable" to famine when in fact thousands of people were suffering unmitigated hardship. A compelling debate could be provoked by the question "Were British colonial monitoring efforts more effective than those of the present?"

2. 'Yan rani, the Hausa word for smallpox, reflects Hausa speakers' association of this disease with the dry season.

3. Hausa people consider cassava flour a low status and rather unappetizing food. It has been consumed widely during famines (see, for example, Laya, 1975).

4. The word fitina ("troublesomeness") is combined with Hitler. Germany is Jamus in Hausa.

5. The Sokoto Province Annual Reports for the years 1951-53 and 1955-60 were not available for examination.

6. The 1953-54 famine potentially has serious implications for Sahelian agriculture and food security in the next century. Climate monitors cannot overlook superabundant rainfall as a famine catalyst in semiarid lands. The three principal techniques used by atmospheric scientists to predict climatic change in a 21st century CO₂-warm world – computer-generated general atmospheric circulation models, palaeoclimatic reconstructions, and instrumental scenarios – all indicate strengthened monsoons and increased rainfall.

7. These data are taken from a proposal for a settlement scheme in southern Sokoto Province. That the 1953-54 famine and distress migration may have accelerated the north-south "drift" was not acknowledged by the proposal's authors, although the accuracy of population figures was questioned.

8. I strongly suspect that the 366mm in the record for May 1982 is an error.

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CHAPTER FIVE: FOOD PRODUCTION SYSTEMS, ASSETS, FOOD
SELF-SUFFICIENCY, AND OFF-FARM INCOMES IN THE
SAHEL STUDY AREA

An analysis of livelihood systems in the Illela area revealed that a large majority of the population copes constantly with significant interannual variations in crop yields and with the threat of food shortage. Annual hardship is most severe during the "hungry season," a period corresponding to the rainy season when demands for farm labor are greatest yet household grain stores are very low or exhausted. In the event of harvest failure, the hungry season can develop into outright famine.

This chapter will document that during 1988-89, despite a farming season with above average and well distributed rainfall, a large proportion of households in the Sahel study area were not self-sufficient in staple foods. The poor rainy seasons of 1987 and 1989 resulted in substantially lower levels of self-provisioning. Interannual variations in cereal yields and chronic food production deficits are the progenitors of adaptive behaviors, which are in turn the basis of famine coping strategies. For most people, adaptation involves economic diversification, with an emphasis on securing off-farm incomes. Mobility is essential in many of these endeavors. As will be demonstrated in chapters six and seven, mobility is also crucial in coping with and recovering from famine.

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Levels of food self-sufficiency and opportunities for compensating food production shortfalls vary from village to village and among socioeconomic classes. This information should be important in assessing vulnerability to famine. The deficient rainy seasons of 1987 and 1989 had different characteristics and different impacts on yields and self-provisioning. Knowledge of such differences should also be important to famine early warning systems.

The sections describing food production systems and assets provide contexts for the subsequent sections on self-sufficiency and off-farm economic activities. They are also essential in examining famine impacts, coping strategies, and famine-related migration.

Food Production Systems

Upland farming, lowland or fadama farming, and livestock rearing are the three major food production systems in the Illela area. The relative importance of upland and fadama farming varies from year to year, from village to village, and among individual farmers. Livestock are crucial to the maintenance and perpetuation of both systems.

The Lake Kalmalo fishery provides part-time employment and important supplements of protein to many people's diets. Of comparatively minor significance are gardening, practiced either within or near compounds, and the collection of wild foods. Small hot peppers (tonka), corn (masara), and Indian

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hemp (rama) are the crops most frequently grown in small household plots. Wild foods collected, consumed, and often sold during "normal" (non-crisis) periods include baobab leaves (kuka), tafasa leaves (the main ingredient in the snack food 'yar unguwa'), and the weed lalau (the least preferred base for sauces eaten with sorghum or millet paste). Locust are the only significant non-vegetative wild food.

Upland Farming

Norman's (1974, 1982) frequently cited studies of agricultural systems in the sub-humid Zaria region (c. 11°N latitude) identified a total of 24 different crops and 156 different crop mixtures on rainfed upland farms. In the uplands of the semiarid Sahel study area, the only crop mixture is millets-sorghum-cowpea. Cotton and peanuts, the two most important cash crops in Northern Nigeria, are not and apparently never have been cultivated.

Local farmers distinguish at least four different varieties of millet. Kuturu has a short, thick head; zango and zagarniya both have thinner but very long heads; shibara is most easily recognized by its rather slender stalk. The only sorghum variety interplanted with the millets is mace da kumiya (woman in shame), so named because the head and top section of the stalk bow deeply under the weight of the mature white grains. Overall, the ratio of millets to mace da kumiya is about 5:1. A few farmers reported ratios of 1:1, but for many more farmers the ratio was 10:1 or higher.

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As a food crop, cowpeas are somewhat less significant than mace da kumiya. A "traditional" variety, and considerably less frequently dan arbain (maturing in 40 days), are the only varieties of cowpea cultivated on the upland farms.

Upland farms are generally small and often of irregular dimensions, as is the case in most of northern Hausaland. Farm boundaries are marked by rocks and the grass gamba. Most farmers cultivate two or more discontinuous parcels.

Fallowing is extremely rare. Fertilizer is essential in this system of annual cultivation. Takin gida ("compound fertilizer"), by far the most important soil dressing, consists of the dung of household livestock and other compound sweepings. Using either headloading or donkeys, farmers convey this fertilizer to their fields at regular intervals during the long dry season. Manure egested by livestock grazing on crop stubble is a secondary source of soil fertility. Crystalline chemical fertilizer is broadcast very sparingly by only a few farmers.

Upland farming operations begin in April or May with sassabe, which involves uprooting the crop residues, and either burning or redistributing them within the soil. Bizne, the practice of planting before the first rains, is becoming increasingly rare. Planting operations are now nearly totally governed by the temporal and spatial distribution of rain events and soil moisture. During the period late May – early July, farmers may be forced to plant more than once if seeds fail to germinate or the sprouting

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crops wither. Millet is usually planted a week or ten days before mace da kumiya and cowpeas. Turbe, the first weeding, is undertaken when the grain crops are 0.3 meters high or less. The second weeding, or mai-mai, is the most critical and most arduous farming task. The millets and sorghum are normally 1-2 meters high, and as a farmer bends to weed with his short-handled hoe, he is confronted with a monstrously humid atmosphere. Millet leaves are abrasive. Some farmers opt to protect their skins by wearing long-sleeved shirts, but most prefer to work shirtless, tolerating the stinging scratches in order to feel cooler. If mai-mai is neglected or only partially accomplished, yields will be reduced drastically by the profuse weed growth. In years with abundant rainfall, a third weeding ("mai-mai na biyu") may be desirable or necessary. During some intervals of the rainy season, many farmers feel compelled to spend hours each day extirpating by hand kuduji (Striga senegalensis), the most pernicious of all weeds.

Often in late August jimbiri, the pod containing unripe cowpeas, is the first food available from the upland farms. Tumu, roasted millet from the earliest ripening heads, is being eaten by mid-September. The main millet and cowpea harvest commences toward the end of September and continues through most of October. The harvest period for mace da kumiya extends from late October to mid-December.

Fadama Farming

Most of the 15 square kilometers of Lake Kalmalo fadama land are cultivated by the residents of Illela, Amarawa, and the other villages bordering them. Approximately one-half of this clayey, low-lying land is suitable for dry season agriculture. Two hundred thirty hectares (2.3 square kilometers) of the best Kalmalo fadama have been incorporated into a Ministry of Agriculture and Natural Resources irrigation scheme. Opened in 1972, the scheme comprises a network of irrigation ditches, a large diesel-powered pump, motorable tracks, a small warehouse, a government workers' office, and a partially functioning meteorological station. Ekoki (acres), which number about 500, are allocated by government irrigation officers. Many of the privately owned fadama farms are smaller than one acre, and are often of irregular dimensions. The agronomic potential of these holdings varies considerably.

During the rainy season sole stands of janjare, a variety of red sorghum, occupy approximately 80 percent of the Kalmalo fadama, and probably more than 90 percent of the fadama corridor centered on the streambed to the east. Janjare is considered the least appetizing of all grains owing to the gritty texture of tuwo (paste) prepared from it. Red sorghum tuwo is nevertheless the type most frequently sold in Amarawa's cooked foods trade. The necessary grain supplement to donkey's diets is usually janjare, and other livestock, especially rams slaughtered

for baptisms and the Islamic celebration Id El Kabir, are often fattened with this sorghum variety. In the late 1980s the reported rise in the market price of janjare was attributed to the increasing demands of Nigeria's breweries, which were being forced by government policies to rely on national products. Only 10 of 162 Amarawa farmers interviewed reported growing other lowland wet season crops in 1988: corn (4), rice (3), and cotton (3). In Tudun Gudali Mai Ruwa and the Gidan Alkasim hamlets, a few farmers produced rice crops on small, very moist rafi parcels.

Soil fertility is maintained by applications of compound sweepings, including manure, and by the droppings of grazing livestock. Farmers assert that chemical fertilizer, when it is available and affordable, dramatically boosts yields of red sorghum and other wet season fadama crops.

Farming operations are similar to those practiced on the uplands, although their timing may differ. Influences on soil moisture include, in addition to rainfall, local variations in soil texture and proximity to the lake or streambed. Mai-mai on many fadama farms is especially laborious. Some farmers reported having to perform this task by hand because the soils are too dense to work with a hoe. The only consolation is that the smooth leaves of janjare do not abrade bare skin. Harvests on lowland farms are usually complete by mid-October.

As the cold Harmattan season approaches, wheat and the superior monetary rewards that its cultivation may generate are foremost in the minds of many farmers. Because all but six of the 96 hectares under wheat cultivation during 1988-89 were located on irrigated government lands,¹ this topic will be discussed further in the context of the Kalmlo scheme. Second in prominence to wheat are tobacco and kayan miya (sauce ingredients) enterprises. The latter entails the meticulous cultivation of, inter alia, tomatoes, peppers, okra, and spinach. For the most part tobacco and kayan miya are grown outside the government acres. Both on and outside the scheme, the other crops produced, in descending order of importance, include sweet potatoes, cowpeas, and onions. These three vegetables, in addition to kayan miya, are the most frequently cultivated dry season crops along the streambed to the east. Much like the Lake Kalmalo fadama lands, the arable zone for farmers in Tudun Gudali Mai Ruwa and Gidan Alkasim contracts during the dry season.

Dry season farming, especially of kayan miya, is labor intensive. Most fadama farms in the study area require some measure of irrigation, which may involve the construction or reactivation of wells and small irrigation channels. Subsequent or concurrent operations often include seedbed preparation, intensive manuring, constructing fences, transplanting, weeding, and thinning. Dry season crops generally mature in March or April. Their importance as a

source of cash income will be considered later in this chapter.

The Kalmalo Irrigation Scheme

Rainy season rights to a Kalmalo scheme acre cost ~~N~~16 in 1988. Higher yields of red sorghum and other wet season crops are reportedly the only incentives for farming on the scheme. Officially, the charge to farm an acre independently during the 1988-89 dry season was ~~N~~20. But an investment of ~~N~~700 per acre was required to participate in the Accelerated Wheat Production Programme (AWPP), one of the cornerstones of Nigeria's agricultural development policy. This sum paid for mechanized plowing, fertilizer, seed, and pest control. (When birds attacked the wheat crop in January 1989, the government dispatched a helicopter to spray a repellant.) Farmers are responsible for the other agronomic tasks, including planting and harvesting. The most exacting work is constructing irrigation channels from the main ditches into the acres. A demand exists for agricultural wage labor on the scheme, especially in November and December. Yields from the 1988-89 crop ranged from 0.7 to 1.4 tons per acre.² Amarawa farmers' modal estimate of gross income per acre was ~~N~~4,000.

The Kalmalo scheme is a subject that most Amarawa farmers are eager to discuss. Some say that they are grateful for the income-earning opportunities the scheme affords, but a majority of farmers express emotions ranging from remorse, to frustration, to extreme indignation. A

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frequently voiced complaint is that outsiders, including customs and immigration officers based in Illela and wealthy men from as far afield as Gusau, easily secure government acres. Another charge is that the scheme is inefficient: the pump breaks down or fuel is not delivered in a timely manner, and, as was reportedly the case during the 1987 wet season, irrigation ditches are not opened when rainfall is patently deficient.³ Two farmers were outraged when government tractors, in preparing the land for wheat, destroyed their sorghum stalks, a valuable crop by-product. But the main shortcomings of the scheme are the monetary cost of securing acres, the political intrigue and infighting associated with their allocation, and the distress people feel in seeing others cultivate what were once their best family farms.

One hundred fifty-five Amarawa farmers were willing to discuss the Kalmalo irrigation scheme, often at great length. One hundred nine affirmed that one or more of their own or their families' farms had been expropriated by the government.⁴ Twenty-six of these farmers reported attempting but failing to obtain rainy season rights. Of the additional 17 men who did not secure an acre, nine were too frustrated by past experiences even to try, four said the cost was prohibitive, and another four stated that their lowland holdings were sufficient. One individual transferred his rights to a friend.

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Of these same 109 farmers whose lands had been expropriated, 75 did not cultivate on the scheme during the 1988-89 dry season. Forty-two tried but failed to receive an allocation, while 13 stated that the cost was prohibitive. Alternative dry season occupations, namely Koranic studies, marketing, and laboring, diverted nine men from farming on the scheme. Five said that their own dry season lands were big enough. Three reported not being in Amarawa when the land was allocated, and another three indicated that they were not interested because their relatives had acres.

The de facto exclusion of so many farmers from former family lands seems a serious injustice. Mitigating this ostensibly unjust situation is the fact that of the 46 men who testified that their farms had not been incorporated into the scheme, only five received 1988-89 dry season rights. Of the 41 who did not farm on the acres, 28 would have liked to. Eighteen tried but failed to gain rights; ten stated that the cost was prohibitive. The thirteen who did not want an acre specified infighting and inefficiency as reasons.

The deepest and most abiding resentment of the government scheme is harbored by farmers whose fadama lands had been expropriated, but whose efforts to secure dry season rights, either for wheat or other crops, had repeatedly been unsuccessful. The elders among this group, who fondly recall the agronomic successes of their forebears

on these lands, expressed the most profound bitterness. They contended that no government agricultural program could ever match the productivity of their former gandu (extended family) fadama farms. The accuracy of this assertion is of course difficult to assess objectively. Whatever the case, these powerful sentiments, exacerbated by the often incomprehensibly irregular and inequitable allocation of government lands, are among the greatest obstacles to "modernizing" traditional agriculture through mechanization and the requisite consolidation of fragmented farmlands.

The impacts on individuals of the vagaries of annual acre reallocation are illustrated by the case of B, a man in his mid-20s who is indisputably a member of the talakawa (peasant) class. He farms corporately (i.e., in gandu) with two senior brothers. The opening of the scheme left them with no family fadama land suitable for dry season agriculture. During the dry season these three men earn cash incomes through wanzamci (traditional barbering) and unskilled labor. But earnings from these activities had not been sufficient to allow B to accumulate a wedding dowry. Partly through his mother's efforts, B had obtained loans totalling ₦450, which is what he thought would guarantee rights to farm one-half acre in the AWPP during 1989-90. Based on reports of yields and earnings from the previous year, he estimated that his profits would be ₦1,500, more than enough to realize his desire for matrimony. B paid his money, and was assured his one-half acre. But less than two

weeks later, just before he was to start digging the irrigation channels, he was removed from the program and his money refunded. B was crestfallen. He had already made considerable progress in building within the family compound a shigifa for himself and his bride-to-be. The irrigation officers explained that they had had to reassign his rights to a farmer from the nearby village of Gaidau. At least two other Amarawa farmers were abruptly barred from the AWPP at the same time and for the same reason.

The case of M exemplifies the potential for peasant initiative to circumvent bureaucratic impediments, but also points up the climatic risks to wheat production in the Sahel study area. M, in his 50s, is also a talaka (peasant), but neither he nor his family ever owned fadama lands incorporated into the scheme. He feels very fortunate to own one good dry season fadama farm of approximately one acre. (He reported having been forced by creditors to sell a portion of it in 1985.) Like most Amarawa men, M is enthusiastic about the prospects for profit through wheat farming, but has never been able to secure rights on the scheme because of the high start-up fees, and, more generally, because "only the rich can get acres." Convinced that he could garner a profit of at least ₦3,000, M resolved to grow wheat on his own initiative in 1989-90. From loans and the well-timed sale of cowpeas, he had in hand almost ₦500 by November. He purchased seed and a fairly small quantity of chemical fertilizer, and proceeded to work

prodigiously, with a short handled hoe, on his personal AWPP. To irrigate his acre, he used his remaining funds to rent a portable gasoline-fueled pump and a long garden hose from an Illela merchant. The crop looked very promising until unseasonably hot weather in January retarded its development. Profits were a disappointing ₦400, but M, of irrepressible spirit, was determined to try again next year. Wheat yields and incomes from the Kalmalo scheme acres were also disappointing; most farmers estimated them to be only one-third those of 1988-89.

But for climatic misfortune, M very well could have earned a profit of more than ₦1,000 from his own initiative and hard work. Supporting such initiatives through the judicious provision of inputs could prove to be, at least in the medium term, a more effective agricultural development strategy than those requiring land expropriation and consolidation and tractors. B, by the way, used his refunded ₦450 to finance some rather modest commerce, and was married about three months after his disappointing experience with the Kalmalo scheme.

Crop By-Products and Natural Vegetation

The Hausa adage "Kudi na gona" ("money is on the farm") usually refers to the cash value of natural vegetation and especially crop by-products. Sales of harawa (cowpea hay), the most preferred type of fodder, are often highly renumorative. Near the end of the dry season, a 0.3-0.5 cubic meter quantity may command more than ₦10. Farmers in

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the study area suggested that in some years harawa is of greater value than the cowpeas themselves. Kara, the stalks of sorghum and millet, is also bought and sold. Its value as a construction material, noted previously, is overall probably not as great as its value as a fuel. Kara is burned in cooking, for warmth during the Harmattan, and to illuminate night-time Koranic school classes. These stalks are also often used to feed livestock and to make traditional beds (gadon kara), which sell for ~~N15-N20~~.

Various types of weeds are gathered and frequently sold as livestock fodder during the rainy season. For the most part children's incomes are derived from this activity, and from "salaries" for their work as agents in the cooked foods trade. The grass gamba is "harvested" at the end of the rainy season. Mats made from it are for some individuals a good source of revenue, as are kutumi, the conical granary cover made mostly from the woody grass kyamro.

As fodder, construction materials, sources of cash, and comestibles, the importance of crop by-products and natural vegetation to the basic maintenance of households should not be underestimated. The cash earnings their sale generates may be used to purchase grain, especially at harvest time when prices are lowest; fodder, of course, is transformed into manure, an input essential to the perpetuation of agricultural systems; and three types of natural vegetation (lalau, tafasa, baobab leaves) supplement incomes and diets during the lean months of the rainy season.

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Livestock Rearing

The size and composition of Amarawa's village herd is impressive. A sub-sample of 50 household heads representing all four socioeconomic strata reported compound livestock holdings totalling 65 cattle, 110 sheep, 111 goats, and 20 donkeys. Some animals are reared in and near compounds, giving their owners ready access to manure and a nearly perennial supply of milk. But a large proportion of the herd is managed by two groups of Amarawa Fulani. During the dry season, livestock are grazed on crop stubble and herded once a day to the Lake Kalmalo shore for watering. Dajin gwamnanti is the preferred rainy season pasture. One group of Fulani establishes a ruga (cattle camp) on the reserve, there tending a portion of the herd during the entire June-October farming season. A second group of Fulani takes another portion of the herd to the reserve every morning, and returns them to the village about an hour before sundown. At this time one gains an appreciation of the magnitude of Amarawa's livestock holdings. For ten minutes or more the roads and kwarkwada are thoroughly congested as cattle and sheep make their way to their owners' compounds.

Livestock rearing is at least as important in many of the other farming villages in the study area. The abundance of domestic animals in Tudun Gudali Mai Ruwa accounts in part for its dispersed settlement pattern. The large, relatively isolated compound to the west, for example, was constructed in c. 1976 by Hausa families from the nuclear

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village whose numerous livestock too frequently caused damage and disturbed the peace. The Buzu family in the single compound to the southeast of the nuclear settlement earns cash by caring for unsold livestock from one Sunday market to the next. Naturally, Fulani agro-pastoralists also require more space and dispersed habitations.

For the Buzu people of Gidan Alkasim and Zangon Tsakuwa, small ruminants are by far the most important livestock. A household flock of 25 sheep and goats is typical. During the rainy season large quantities of weeds are necessary to sustain these animals in and near the compounds. Throughout the dry season men and boys tending their flocks in the hamlets' hinterlands present an eminently bucolic scene. Livestock holdings in the Hausa hamlet of Katanga and in the Tudun Gudali Mai Ruwa nuclear settlement are substantial and similar in composition to the Amarawa village herd. The Buzu residents of the dispersed Tudun Gudali Mai Ruwa compounds and most households in Zangon Yamma are relatively poor in livestock.

On a per capita basis, the Tudun Gudali Mai Ruwa Fulani possess more animals than any other population in the study area.⁵ Their livelihood also depends most directly on livestock, especially cattle. Two senior household heads asserted that their "farming" consists of selling a few head of cattle at harvest time and purchasing sacks of grain with the proceeds. In contrast, one middle-aged man reported harvesting more than 100 bundles of grain in 1988, a

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quantity greater than the production of most local Hausa farmers. (He relied to a large extent on hired labor.) Most Fulani seniors, however, jokingly acknowledge that their agricultural efforts, which usually result in a dozen or so bundles, are little more than "maganin zaman banza" (something to keep one from a purposeless existence). Dry season farming has never been practiced, or even contemplated.

During the dry season the Fulani herders circulate within the study area, sometimes taking their livestock to the government reserve to graze and to Lake Kalmalo to drink. For the manure egested as livestock graze on crop residues, a Fulani household from Tudun Gudali Mai Ruwa reportedly receives on average two bundles of millet per week, or the equivalent in cash.⁶ Herders encamped on the upland farms water their animals from the many wells constructed partly for this purpose.

As the agricultural season begins the Fulani must move most of their livestock. A small percentage are pastured locally, usually on Hurmin Lakoda, but transhumance, supervised by the younger men over great distances, is the cardinal form of mobility in this herding system. The first significant pause in the herders' northward trek towards the Sahara is at Takanama, a locality west of Tahoua. When farming commences here, the Fulani continue their advance. Tilliya, at 16°N latitude, is another important rainy season pasture. The northernmost grazing lands reached by the

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Tudun Gudali Mai Ruwa Fulani are those around the wells of Tamaya, at nearly 18°N latitude. The straight-line distance from here to the study area is about 450 kilometers.

Despite its rigors, the younger men say that they usually enjoy transhumance, but are of course happy to return to their mashekari and their families after a four-month absence.

Other Fulani herders pass through the study area in the course of their seasonal movements. Known locally as Dossawa (reportedly because their "home" is Dosso, a region in Niger to the west and north of Illela LGA), these groups now concentrate their herds near Lake Kalmalo during most of their often brief sojourns. The apparently once pervasive and mutually beneficial interaction between farmers and the Dossawa has been diminishing. Fulani women only rarely come to Amarawa to sell milk, and very few farmers contract with these herders for manure services. Reports regarding other parts of northern Sokoto State also indicate that over the past decade or so Fulani transhumants have been spending more and more time farther south in sub-humid ecological zones.⁷

Of much greater benefit to study area farmers are the annual visits of Nigerien Buzu transhumants and agro-pastoralists. Conflicts are rare between farmers and the Udawa, the local term for these herders.⁸ The Buzu often send scouts ahead of their flocks to determine the number of days before fields are cleared of crops and kara, and to

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identify farmers who are willing to offer compensation for their animals' manure. This is usually prepared food, which is carried to their encampments on the upland farms by Hausa children. A bundle of grain is sometimes also included. In many cases arrangements between individual Hausa and Buzu households have been maintained over several generations.

As the dry season progresses the Udawa move slowly south, spending from three days to a week on a specific set of farms near each village on their itinerary. Some groups reportedly migrate as far west and south as "Kwara" (the Niger River) before their comparatively rapid return to the Saharan borderlands in March or April.

Labor

Of the food production problems not directly related to climate, labor shortages during critical intervals of the agricultural season are the most significant. In undertaking a transect on foot across the uplands of the study area during the peak period (malka) of a good rainy season, one will come upon at least a score of abandoned farms whose stunted or barren crops are being choked by a superabundance of weeds.⁹ The farmers who planted on these fields were unable to perform the second weeding, or mai-mai.

In the study area, as in most of Northern Nigeria, the household is the dominant source of agricultural labor. Gandu, the traditional unit of household production, is in essence a senior compound head and his adult sons and/or

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younger brothers who jointly farm a common set of fields. Gandu heads are obligated to pay junior members' taxes and wedding dowries in exchange for rights to most of their labor power. Cash crop production and expanded opportunities for off-farm incomes have been cited as reasons for fundamental alterations in the relationships among gandu members, and for increased rates of gandu dissolution (Buntjer, 1973; Goddard, 1975). Iliya (1988) discovered that Hausa farmers in study villages near Gusau were no longer familiar with the institution.

In Amarawa, 50 household heads, or about 30 percent of the sample population, reported being involved in gandu. Thirty-nine gandu entailed relationships between fathers and sons, 10 were fraternal, and one consisted of an uncle and three nephews. Ten household heads from Tudun Gudali Mai Ruwa were involved in gandu: four paternal and six fraternal. In the Gidan Alkasim hamlets, all eight informants who reported involvement in gandu had relationships with their sons.

The prevalence of gandu in the study area in 1989-90 is similar to rates recorded in two earlier studies in Northern Nigeria. In Kaita, a large village in northern Katsina State, Watts (1983) determined in 1977-78 that 41 percent of all farming units were paternal or fraternal gandu. A decade earlier, Hill (1972) found that gandu accounted for about 25 percent of farming units in the village of Batagarawa (about 25 kilometers southwest of Kaita).

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Despite the prevalence and persistence of corporately organized household production, a strong market for agricultural wage labor exists in the study area. Labor purchases and sales by farmers will be discussed later in the context of the 1984-85 drought and famine. Suffice it to say here that households from all socioeconomic classes, including the talakawa ("peasants") and jan talakawa (extremely poor), hire labor. The cost is considerable. The high demand, especially during "bottleneck" phases (turbe and mai-mai), creates a seller's market when rainfall is average or better. In the study area, wage rates for agricultural labor increased from ~~N~~12/man/day in 1987, to ~~N~~20/man/day in 1988, to ~~N~~30/man/day in 1989. These increases were attributed to competition from Nigerien farmers who, owing to the undervalued Nigerian currency, could afford to pay a laborer the equivalent of ~~N~~40/day in FCFA, and to arrange for his transport to and from Illela. In addition to the daily wage, a farmer must provide laborers with cola nuts, cigarettes, fura (millet porridge), and sometimes a meal of tuwo da miya (grain paste and sauce) at the end of the day. The use of pharmaceutical quality stimulants (and depressants to counteract them in the evening) by both farmers and laborers is an alarming recent development related to the problem of acute labor shortage (Iliya, 1988).¹⁰

According to some farmers, the hit or miss character of rainfall within localities is the only factor that partly

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alleviates labor bottlenecks. Strong demands for weeding services in villages where major rain events recently have occurred may be met by men from nearby villages where rainfall has been patchy. During some years, such as 1988 and 1989, a greater degree of spatial-temporal coherence in rainfall reportedly has exacerbated labor shortages.

The only alternative to household and hired labor is the gayya, commonly defined as a voluntary communal work party. Farmers who organize gayya often do not compensate the workers with cash, but always furnish at least one prepared meal. According to Hill (1972), attendance depends on the price of grain or the status of household grain reserves. Most researchers have found that gayya has become rather uncommon throughout Northern Nigeria. In the study area it occurs, but infrequently; farmers who have "called gayya" state that the poor quality of the work normally does not justify the expense.

Pests

Insect and avian pests are additional major food production problems. Marai and buwa, two varieties of weaver birds, are the most prominent feathered pests.

Locust come every year to northern Sokoto State. At least eight varieties, with different behaviors and destructive potentials, are recognized by Amarawa farmers.¹¹ According to Western analysts, increased rainfall since 1985 has contributed to a higher frequency of locust attacks and greater crop damage (Walsh, 1986, 1988; Pedgley, 1989).

Study area farmers do not concur fully with this view. They point out that infestations are most inimical during droughty years because there are fewer weeds and less natural vegetation to divert the hoppers from crops. The 1989 farming season, with extremely poor August rainfall and a below average September total, would seem to be a case in point. Swarms of locust did not darken the sky in Biblical proportions. Indeed, flights of airborne locust were rarely discernible. Yet on the upland farms, at and near to the ground, hosts of hoppers feasted as the millet was being harvested. Cowpeas and cowpea leaves were devastated. Harawa (cowpea hay) was totally unavailable in study area villages. Farmers suggested that but for good rainfall in the first half of the wet season (June-July), locust would have afflicted grain crops as well.

Murzuna, a kind of caterpillar or grub, was also cited as a cause of reduced yields. These insects infest the heads of millet and apparently inhibit the grains' ripening. Scores of murzuna issued forth as a bundle of millet from the excellent 1988 harvest was being threshed. Also typical on the hardened threshing grounds were columns of taruruwa, or driver ants, each one carrying a grain of millet to the underground colony. Taruruwa, in addition to the frequently reported rodent infestations, indicate that grain processing and storage also present significant food production problems.

Of the livestock rearing problems not related directly to climate, rinderpest is potentially the most pernicious. Over the past century this cattle plague has periodically destroyed the livelihood of African pastoralists. Cattle infected with the virus develop severe diarrhea; grazing lands thus contaminated are the sites for another round of infection. In 1983 an epidemic of rinderpest occurred over extensive parts of the central Sudan and Sahel of West Africa. The Fulani of Tudun Gudali Mai Ruwa reported that although they lost some cattle, a major catastrophe was averted by taking their animals to Birnin Konni for inoculation.

Several other more chronic threats to livestock also exist. According to Amarawa informants, the possibility of theft accounts for the total absence of camels in this and other villages in the immediate vicinity of Illela. Lightning and hail reportedly have killed animals, as has contaminated water. On one occasion, interviewing was interrupted by the loud lamentations of a senior woman whose three cows had just died after drinking from Lake Kalmalo. The water had been made toxic either by fish poison or by runoff containing dissolved chemical fertilizer.

Farmer-Herder Conflicts

Sanguinary conflicts sometimes arise from the tensions between farmers and herders. In the study area deaths have resulted from at least two of these clashes. Both took place between "Dossawa" Fulani and Hausa farmers on the Lake

Kalmalo fadama in October or November. The fight in 1972 has become a part of local lore. By all accounts it developed into a pitched battle involving archery and swordsmanship. More than 20 men were killed or wounded. The day after, police dispatched from Gwadabawa cordoned off Amarawa and identified and arrested the belligerents. Several were imprisoned. The Fulani reportedly were not punished. The conflict that erupted near Munwadata in 1990 was also bloody, and for three or four men, fatal.

Barna, the ravaging of ripening crops by Fulani cattle, triggers these conflicts. Farmers avowedly would rather fight than seek redress through the legal system. They charge that judges and other traditional authorities are biased against them, so that fines, when imposed, rarely result in sufficient compensation. Fulani supposedly would rather pay a large fine to a court that compensate individual farmers with smaller sums. Dossawa were never interviewed during the course of fieldwork. But perhaps the herders' side of the story is adequately represented by Fulani informants from Tudun Gudali Mai Ruwa. According to them, conflicts occur because livestock right-of-ways (burtali) and grazing reserves are continuously being encroached upon by cultivation. One Fulani elder identified a defunct burtali, now being farmed, that once led from Tudun Gudali Mai Ruwa to Hurmin Lakoda. This hurmi had had to be re-demarcated in 1988 to check further usurpation of the land by farmers.

Socioeconomic Class and Assets

The information presented in this section is intended to provide a context for subsequent discussions of food self-sufficiency, famine coping strategies, and migration. In Amarawa, group interview participants unequivocally assigned 138 household heads to one of four socioeconomic classes: attajirai/masu dan hali (wealthy), masakaita ("middle class"), talakawa ("peasants"), and jan talakawa ("extremely poor"). The two groups differed in their assessments of ten household heads. The participants were not able to make a determination regarding the remaining 14 household heads in the sample.

Concerning housing, the compounds with walls or rooms constructed of sorghum stalks and mats are inhabited almost exclusively by jan talakawa. The compound of one wealthy man, a native of Amarawa but only a part-time resident, consists of clay brick rooms only partially enclosed by stalks. All of the homes built entirely or partly of cement are owned by the wealthy.

Of the 14 attajirai in the sample, three possess automobiles. One of these, a man consistently regarded as the wealthiest person in Amarawa, also owns two large gasoline-fueled trucks. Two household heads who declined to be interviewed either own or have frequent access to one-quarter ton pickup trucks. Most of the motorcycles are owned by young men from the two upper classes, although at

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least two sons of talakawa earn incomes as motorcycle taximen.

Group stratification sessions were not organized in the other study area settlements. In Tudun Gudali Mai Ruwa, five household heads affiliated with gidan sarauta (the compound of traditional authority) and two other household heads are usually considered to be the uppermost socioeconomic stratum. These seven are ethnically Hausa and reside in the nuclear settlement. Data on land assets and observations of the material composition of compounds suggest that a distinction between other Hausa household heads and Buzu household heads has some socioeconomic relevance. No one in Tudun Gudali Mai Ruwa or the Gidan Alkasim hamlets owns a motor vehicle.

Five household heads in Gidan Alkasim and Katanga may be regarded as relatively wealthy. One of these men owns a horse, which he estimates consumes one kwano (2.5 kilograms) of grain per day. The "village area" head and Sarkin Noma A, the patriarch of Katanga, each has a prosperous son. These two elders are also prosperous in their own right. They acknowledged owning "many" farms, but were unwilling to be specific.

Although the size of farms varies, holdings have become so fragmented that the number of farms cultivated per household head has been regarded as a good surrogate for land assets (Iliya, 1988; Mortimore, 1989). This view is

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also consonant with the perceptions of study area informants, who frequently equate wealth with farm numbers.

The attajirai are most sharply distinguished in Amarawa by the larger number of fadama holdings per household head and by access to government acres, especially for dry season cultivation (Table 5.1). At the opposite extreme are the jan talakawa, who were unable to secure acres and have very few farms elsewhere on the fadama lands.

The data on upland farms demonstrate a congruous diminution from the wealthy to the extremely poor (Tables 5.1 and 5.2). The smallest difference in overall land holdings is that between the "middle class" and the "peasants." The data on compound livestock holdings illustrate a clearer distinction between these two classes (Table 5.3). The masakaita in the subsample have on average nearly two cattle and more than four sheep per compound, while the corresponding figures for the talakawa are 1.25 and 1.7. Livestock holdings among the extremely poor are negligible. According to local Fulani, who care for a considerable portion of Amarawa's village herd, the subsample of attajirai under-represents this group's involvement in animal husbandry.

The means by which Amarawa informants acquired their upland farms is shown in Table 5.4. Twenty-nine percent of all of these farms were purchased. In the Gidan Alkasim hamlets the figure for all types of farms (tudu, debagi,

**Table 5.1: Farm Holdings by Socioeconomic Class,
Amarawa Village, June 1988 — March 1989**
Number of Household Heads in Stratified Sample = 138

	<u>ATTAJIRAI/MASU</u> <u>DAN HALI</u> <u>(WEALTHY)</u>		<u>MASAKAITA</u> <u>("MIDDLE CLASS")</u>		<u>TALAKAWA</u> <u>(PEASANTS)</u>		<u>JAN TALAKAWA</u> <u>(EXTREMELY POOR)</u>	
	<u>N</u>	<u>% OF SAMPLE</u>	<u>N</u>	<u>% OF SAMPLE</u>	<u>N</u>	<u>% OF SAMPLE</u>	<u>N</u>	<u>% OF SAMPLE</u>
HOUSEHOLD HEADS	13	9.4	39	28.2	71	51.4	15	10.9
UPLAND FARMS	77	15.7	164	33.5	226	46.1	23	4.7
FADAMA FARMS	63	26.3	76	31.7	92	38.3	9	3.8
GOVERNMENT ACRES, RAINY SEASON	22	21.2	35	33.7	47	45.2	0	0
GOVERNMENT ACRES, DRY SEASON	17	35.4	16	33.3	15	31.2	0	0
UPLAND FARMS/ HOUSEHOLD HEAD	5.9		4.2		3.2		1.5	
FADAMA FARMS/ HOUSEHOLD HEAD	4.8		1.9		1.3		0.6	
GOVERNMENT ACRES/ HOUSEHOLD HEAD, RAINY SEASON	1.7		0.9		0.7		0	
GOVERNMENT ACRES/ HOUSEHOLD HEAD, DRY SEASON	1.3		0.4		0.2		0	

**Table 5.2: Farm Holdings of Ten Equivocally Stratified
Household Heads, Amarawa Village,
June 1988 — March 1989**

	Talakawa/ Masakaita	Talakawa/ Jan Talakawa
Household Heads	6	4
Upland farms	19	7
Fadama farms	9	4
Government Acres, Rainy Season	7	0
Government Acres, Dry Season	4	0
Upland Farms/Household Head	3.2	1.8
Fadama Farms/Household Head	1.5	1
Government Acres/Household Head, Rainy Season	1.2	0
Government Acres/Household Head, Dry Season	0.7	0

**Table 5.3: Livestock Holdings of a Sub-Sample of 50
Household Heads by Socioeconomic Group,
Amarawa Village, March — May, 1989**

	<u>Attajirai</u> "wealthy" (N=3)	<u>Masakaita</u> "middle class" (N=13)	<u>Talakawa</u> "peasants" (N=28)	<u>Jan Talakawa</u> "extremely poor" (N=6)
<u>Cattle</u>				
Total Per H.H.	4 1.3	25 1.9	35 1.3	1 0.2
<u>Sheep</u>				
Total Per H.H.	8 2.7	54 4.2	48 1.7	0 0
<u>Goats</u>				
Total Per H.H.	7 2.3	45 3.5	52 1.9	7 1.2
<u>Donkeys</u>				
Total Per H.H.	0 0	6 0.5	14 0.5	0 0

H.H. = Household Head

Table 5.4: 490 Upland Farms, Amarawa Village, Means of Acquisition by Socioeconomic Class

	ATTAJIRAI/MASU DAN HALI (WEALTHY) N = 13		MASAKAITA ("MIDDLE CLASS") N = 39		TALAKAWA (PEASANTS) N = 71		JAN TALAKAWA (EXTREMELY POOR) N = 15		<u>TOTALS</u>	
	f	Percent	f	Percent	f	Percent	f	Percent	f	Percent
Gado (Inheritance)	32	41.6	92	56.1	154	68.1	16	69.6	294	60.0
Saye (Purchase)	40	51.9	58	35.4	45	19.9	0	0	143	29.2
Sunfuri/Haya (Renting)	5	6.5	14	8.5	14	6.2	1	4.3	34	6.9
Aro (Loan)	0	0	0	0	5	2.2	2	8.7	7	1.4
Riko (Holding in Trust)	0	0	0	0	5	2.2	1	4.3	6	1.2
Kyauta (Gift)	0	0	0	0	3	1.3	3	13.0	6	1.2
TOTAL	77		164		226		23		490	

rafi) was nearly 33 percent (Table 5.5). These statistics are similar to Ross's (1987) finding that 31 percent of the total hectarage of a hamlet in the Kano close settled zone had been bought. The Tudun Gudali Mai Ruwa farmers purchased only 14.7 percent of their farms (Table 5.6), a rate comparable to the 13.6 percent reported by Watts (1983) for Kaita. In Amarawa the wealthy acquired a majority of their upland holdings through purchase. The percentage of farms thus acquired diminishes across socioeconomic classes, and is zero among the poorest. The relatively wealthy of Tudun Gudali Mai Ruwa were responsible for nearly half of all farm purchases. Data on farm holdings suggest that these seven men may be more appropriately compared to the Amarawa masakaita, while the Buzu seem rather similar to that village's jan talakawa (Table 5.7). As a group, the farmers of the Gidan Alkasim hamlets cultivate somewhat fewer farms than the talakawa of Amarawa (Table 5.8).

Gandu membership in Amarawa is highest among the middle and wealthy classes. In Tudun Gudali Mai Ruwa, gandu membership is high among the wealthy and non-existent among the Buzu. Gandu is most prevalent in the Gidan Alkasim settlements. At times the household heads of Katanga work in gandu for that hamlet's patriarch, Sarkin Noma A.

Table 5.5: Gidan Alkasim Hamlets**55 Tudu, Debagi, and Rafi Farms: Means of Acquisition**

	<u>GIDAN ALKASIM</u>	<u>ZANGON TSAKUWA</u>	<u>ZANGON YAMMA</u>	<u>KATANGA</u>	<u>TOTAL</u>
	HOUSEHOLD HEADS=5	HOUSEHOLD HEADS=4	HOUSEHOLD HEADS=3	HOUSEHOLD HEADS=5	HOUSEHOLD HEADS=17
	NUMBER OF FARMS=19	NUMBER OF FARMS=9	NUMBER OF FARMS=8	NUMBER OF FARMS=19	NUMBER OF FARMS=55
	f	f	f	f	f %
GADO (INHERITANCE)	13	6	4	13	36 65.5
SAYE (PURCHASE)	6	2	4	6	18 32.7
SUNFURI/HAYA (RENTING)	0	1	0	0	1 1.8
ARO (LOAN)	0	0	0	0	0 0.0
RIKO (HOLDING IN TRUST)	0	0	0	0	0 0.0
KYAUTA (GIFT)	0	0	0	0	0 0.0

**Table 5.6: Tudu, Debagi, and Rafi Farms, Tudun Gudali Mai Ruwa
Means of Acquisition by Group, September 1989 — March 1990**

	WEALTHY (N=7) NUMBER OF FARMS=44		HAUSA TALAKAWA (N=28) NUMBER OF FARMS=93		BUZU (N=10) NUMBER OF FARMS=19		<u>TOTALS</u>	
	<u>f</u>	<u>Percent</u>	<u>f</u>	<u>Percent</u>	<u>f</u>	<u>Percent</u>	<u>f</u>	<u>Percent</u>
GADO (INHERITANCE)	33	75	77	82.8	18	94.7	128	82.1
SAYE (PURCHASE)	11	25	11	11.8	1	5.3	23	14.7
SUNFURI/HAYA (RENTING)	0	0	2	2.2	0	0	2	1.3
ARO (LOAN)	0	0	1	1.1	0	0	1	0.6
RIKO (HOLDING IN TRUST)	0	0	0	0	0	0	0	0
KYAUTA (GIFT)	0	0	2	2.2	0	0	2	1.3

**Table 5.7: Farm Holdings by Group,
Tudun Gudali Mai Ruwa, October 1989 — May 1990**

	<u>WEALTHY</u>		<u>OTHER HAUSA</u>		<u>BUZU</u>	
	<u>N</u>	<u>% OF SAMPLE</u>	<u>N</u>	<u>% OF SAMPLE</u>	<u>N</u>	<u>% OF SAMPLE</u>
HOUSEHOLD HEADS	7	15.6	28	62.2	10	22.2
TUDU FARMS	25	26.8	55	59.1	13	14.0
DEBAGI FARMS	2	11.1	11	61.1	5	27.8
RAFI FARMS	17	37.7	27	60.0	1	2.2
TUDU FARMS/ HOUSEHOLD HEAD		3.6		2.0		1.3
DEBAGI FARMS/ HOUSEHOLD HEAD		0.3		0.4		0.5
RAFI FARMS/ HOUSEHOLD HEAD		2.4		1.7		0.1

**Table 5.8: Farm Holdings, Gidan Alkasim Hamlets,
September 1989 — March 1990**

	<u>GIDAN ALKASIN</u>	<u>ZANGON TSAKUWA</u>	<u>ZANGON YAMMA</u>	<u>KATANGA</u>	<u>TOTAL</u>
HOUSEHOLD HEADS	N=5	N=4	N=3	N=5	N=17
TUDU FARMS	10	6	5	12	33
DEBAGI FARMS	4	3	0	3	10
RAFI FARMS	5	0	3	4	12
TUDU FARMS/ HOUSEHOLD HEADS	2	1.5	1.7	2.4	1.9
DEBAGI FARMS/ HOUSEHOLD HEADS	0.8	0.75	0	0.6	0.6
RAFI FARMS/ HOUSEHOLD HEADS	1	0	1	0.8	0.7

Climatic Variation, Yields, and Self-Sufficiency

Interannual variations in rainfall, crop yields, and levels of self-sufficiency in staple foods are hallmarks of rural life in the West African Sahel. This section illustrates the magnitude of these variations over the period 1987-89.

Figure 5.1 presents monthly rainfall at Birnin Konni, Niger, for 1987, 1988, and 1989, and the monthly averages for the period 1933-1991. Annual rainfall in 1988 was above the long-term mean, and on the whole, very favorable for food production. In contrast, totals for both 1987 and 1989 were nearly 200mm below the average. Yet the deficiencies in these two rainy seasons were markedly different, 1987 having been marred by the lowest June total on record, and 1989 by the driest August in the entire series. June rainfall is considered crucial for the germination of grain crops. According to Watts (1983), a droughty August may not be inimical to crop development. Nevertheless, this month is on average the wettest, and good harvests in past years have been associated with relatively abundant, or at least well distributed, August rainfall.

Grain yields for three study area settlements are presented together with basic descriptive statistics in Tables 5.9-5.11. The unit reported is the bundle, which farmers consistently state contains from five to seven kwano (~2.5 kilograms) of grain. Upon threshing, a bundle of

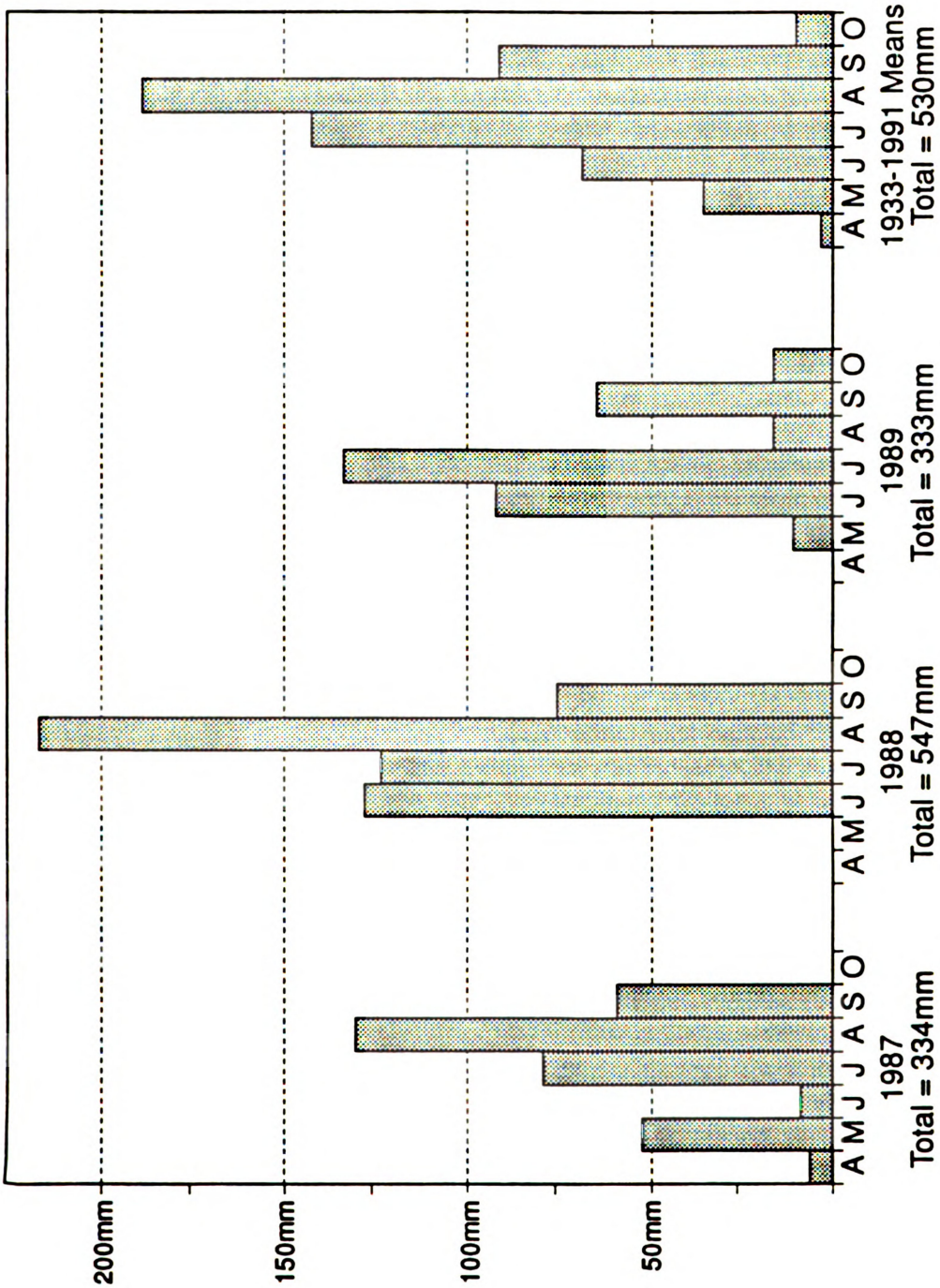


Figure 5.1: Birmin Konni Monthly Rainfall, 1987-89, and 1933-91 Monthly Means
Source: Hulme (1992)

**Table 5.9: Reported Grain Yields, Amarawa
(Bundles of Millet and Sorghum)**

<u>Attajirai (Wealthy)</u>						
	<u>N</u>	<u>total</u>	<u>$\bar{x}$</u>	<u>median</u>	<u>s</u>	<u>range</u>
1987	11	1995	181.4	100	122.1	15-700
1988	12	5549	462.4	220	447.3	44-1450
<u>Masakaita ("Middle Class")</u>						
1987	39	4281	109.8	100	80.7	9-330
1988	39	7802	200	190	119.8	10-500
<u>Talakawa ("Peasants")</u>						
1987	67	4081	60.9	49	51.3	0-300
1988	67	6868	102.5	90	72.6	15-408
<u>Jan Talakawa (Extremely Poor)</u>						
1987	15	302	20.1	18	16.3	0-55
1988	15	322	21.5	15	12.2	0-47

**Table 5.10: Reported Grain Yields, Tudun Gudali Mai Ruwa
(Bundles of Millet and Sorghum)**

<u>Wealthiest</u>						
	<u>N</u>	<u>total</u>	<u>$\bar{x}$</u>	<u>median</u>	<u>s</u>	<u>range</u>
1987	6	524	87	72.5	71.3	14-200
1988	7	1275	182	140	128.3	30-450
1989	7	600	86	70	48.9	40-200
<u>Other Hausa</u>						
1987	26	1097	42	36	37.7	0-135
1988	28	2163	77	70	40.4	30-200
1989	27	1343	50	42.5	23.2	7-100
<u>Buzu</u>						
1987	8	156	20	26	8.8	8-34
1988	8	369	46	42	21.1	15-80
1989	8	265	33	25.5	14.8	20-64

**Table 5.11: Reported Grain Yields, Gidan Alkasim Hamlets
(Bundles of Millet and Sorghum)**

<u>Wealthy</u>						
	<u>N</u>	<u>total</u>	<u>$\bar{x}$</u>	<u>median</u>	<u>s</u>	<u>range</u>
1987	3	190	63.5	60	28.7	30-100
1988	4	485	121	115	17.5	105-150
1989	4	154	38.5	37	15.1	20-60
<u>Others</u>						
1987	13	409	31.5	20	21.7	6-80
1988	13	1764	136	100	105.2	20-409
1989	13	626	48	50	26	4-100

sorghum normally renders slightly more grain than a bundle of millet.

At the very least, the yields data reflect farmers' perceptions of the impacts of interannual, or first order, climatic variations.¹² These data therefore provide a cognitive anchor for appreciating the effects of a worst-case June, a good rainy season, and a worst-case August. The following conclusions may be drawn:

- the good rains of 1988 resulted in an approximate doubling of yields over those of the previous year.
- for a large majority of farmers, the 1989 agricultural season, with the lowest August rainfall in at least 57 years, resulted in higher yields than 1987, with the driest June on record.¹³ The differences in the character of these two rainy seasons seemingly had little effect on the yields of the wealthier Tudun Gudali Mai Ruwa farmers. The extraordinarily deficient August was apparently worse than the poorest June only for the relatively wealthy of the Gidan Alkasim hamlets.
- the highest rate of increase in grain yields from 1987 to 1988 was realized by the non-wealthy of the Gidan Alkasim hamlets. In Amarawa, rates of increase diminished from the wealthy to the extremely poor.
- for the extremely poor of Amarawa, the impacts of a good (or deficient) rainy season appear negligible. The average production of the Tudun Gudali Mai Ruwa Buzu, on the other hand, more than doubled from 1987 to 1988.
- the relatively high standard deviations for 1988 yields suggest that individual farmers have considerably different capacities for taking advantage of a good growing season.

Interannual variations in harvests are, in one of Kates's (1985) schema, important examples of biophysical, or

first order, climate impacts. In the Sahel, the most basic and most significant second order impact is upon self-provisioning. Higher order impacts, manifested in coping strategies and the more conventional and constant forms of adaptation, stem in large measure from a chronic lack of, and year-to-year variations in, food self-sufficiency.

The proportion of farmers capable of provisioning themselves and their families from their own production for an entire year also varies among regions, localities, and villages. A map portraying the distributions of different levels of self-sufficiency would be a major contribution to an effective monitoring system. Unfortunately, knowledge is limited to a few scattered and methodologically uneven case studies. The available data indicate that during non-drought years, the village-to-village variation in the percentage of households self-sufficient in grains ranges from 15 to 75 (Table 5.12). To these case study findings could be added what are apparently non-quantitative assessments, such as Swinton's (1988), that farmers in study villages near Maradi usually "approach" self-sufficiency in grains, and IFPRI's (in USAID, 1992), that a good harvest (1983) in western Niger villages sustained most families for at least 12 months.

The extent to which individual study area households are self-sufficient in grains, as well as the magnitude of interannual variations in self-sufficiency, are represented

**Table 5.12: Case Studies of Self-Sufficiency in Grains,
Niger and Northern Nigeria**

<u>Source</u>	<u>Village</u>	<u>Latitude/ Longitude</u>	<u>Year(s)</u>	<u>N</u>	<u>Percent Self-Sufficient</u>
Sutter(1982)	Yelwa	13°10'N, 7°45'E	1977-78	42	75
Painter(1986)	Loutou Kwara	12°40'N, 3°15'E	1982	26	15.4
Watts(1983)	Kaita	13°05'N, 7°45'E	1976-78	?	53
Arnould(1982)	Maidoki	13°25'N, 9°15'E	1976-77	16	75
			1977-78	16	50
			1978-79	16	43.8
			1979-80	18	44.4
	Kadafan Tulu	13°50'N, 9°00'E	1978-79	16	43.8
			1979-80	11	45.5

in Appendix 4. In 1988-89, approximately 43 percent of sample farmers in Amarawa produced enough grain to feed themselves and their dependents until or beyond the next year's harvest, but only 22 percent were able to do so in 1987-88 (Table 5.13). Smaller minorities achieved self-sufficiency in Tudun Gudali Mai Ruwa and the Gidan Alkasim hamlets (Tables 5.14 and 5.15). Apart from some of the wealthier households, no families in these settlements were self-sufficient during 1987-88 and 1989-90.

The figures in Appendix 4 illustrate for most households a gap of several months duration between grain production and consumption requirements, and therefore the extent to which households must rely on earnings from other economic activities in order to sustain themselves, largely through au (buying grain, often by the measure). These representations are probably more accurate for Amarawa than for the other two settlements. Owing to opportunities for follow-up interviews, a triangular system of cross-checking was possible based on reported yields, estimates of household grain consumption, and recollections of the season when grain stores had been exhausted. A more accurate portrayal would require precise data on grain transactions, a sensitive and multi-faceted issue (Appendix 5).¹⁴

The tables in Appendix 6 were compiled in an attempt to identify patterns that may be associated with self-

**Table 5.13: Self-Sufficiency in Grains,
Amarawa Village, 1987-89**

<u>Socioeconomic Class</u>	<u>Year</u>	<u>N</u>	<u>Percent Self-Sufficient</u>
Attajirai (wealthy)	1987-88	12	41.7
	1988-89	12	66.7
Masakaita ("middle class")	1987-88	38	28.9
	1988-89	38	57.9
Talakawa ("peasants")	1987-88	68	19.1
	1988-89	68	39.7
Jan Talakawa (extremely poor)	1987-88	15	0.0
	1988-89	15	0.0
Overall	1987-88	133	21.8
	1988-89	133	42.9

**Table 5.14: Self-Sufficiency in Grains,
Tudun Gudali Mai Ruwa, 1987-1990**

<u>Group</u>	<u>Year</u>	<u>N</u>	<u>Percent Self-Sufficient</u>
Wealthy	1987-88	666	16.7
	1988-89		50.0
	1989-90		16.7
Other Hausa	1987-88	22	0.0
	1988-89	25	12.0
	1989-90	25	0.0
Buzu	1987-88	6	0.0
	1988-89	6	0.0
	1989-90	6	0.0
Overall	1987-88	34	2.9
	1988-89	37	16.2
	1989-90	37	2.7

**Table 5.15: Self-Sufficiency in Grains,
Gidan Alkasim Hamlets, 1987-1990**

<u>Group</u>	<u>Year</u>	<u>N</u>	<u>Percent Self-Sufficient</u>
Wealthy	1987-88	2	0.0
	1988-89	3	33.3
	1989-90	3	0.0
Others	1987-88	10	0.0
	1988-89	10	33.3
	1989-90	10	0.0
Overall	1987-88	12	0.0
	1988-89	13	30.7
	1989-90	13	0.0

sufficiency and interannual variations in degrees of self-sufficiency. Data on farm holdings suggest conclusions that seem counter-intuitive, such as: 1) that a greater number of upland farms per household head is associated with higher interannual variations in self-sufficiency; 2) that the number of fadama or rafi farms and access to government acres have little influence on self-sufficiency. The data on gandu membership bear little relationship to self-sufficiency or interannual variations. This also appears to be the case regarding reports of farm abandonment and flooding, although for some extremely poor households in Amarawa, flooding may have been responsible for their inability to increase levels of self-sufficiency. Perhaps the only significant insight is that self-sufficient households as a group have lower grain consumption requirements and, logically, fewer members. A small number of farmers experienced higher levels of self-sufficiency in 1987-88 than in the following year. This they attributed to their farms having lisso soils.¹⁵

Greater insight into the causes of interannual variations in yields and self-sufficiency might require more detailed information on soil types, manuring practices, the sizes of farms, and even micro-scale variations in rainfall. More precise data on year-to-year changes in farm holdings and pests might also be necessary. (Only five farmers in the study villages cited adding or reducing farmland as a cause for differences in yields, and only three cited

caterpillar infestation.) Yet even if all of these data sets were available, analyses would probably still fall short of achieving a satisfactory explanation.

Seasonality

As the figures in Appendix 4 portray, and as numerous other studies in the rural Sahel have found, the gap between household grain supplies and consumption requirements corresponds to bazara (the hot dry season), and especially to damuna (the rainy season), when demands for agricultural labor reach peak levels. The often severely debilitating impacts of this "hungry season" may perpetuate a "positive" feedback loop. Illness and malnutrition during the rains substantially reduce the productivity of household labor, resulting in lower crop yields and food supplies, further nutritional stress, and heightened susceptibility to malnutrition-related diseases. Also of critical significance is that in the event of harvest failure, famine evolves from this annual period of hardship and deprivation (Campbell and Trechter, 1982; Watts, 1983; Mesfin, 1984, 1987). Glantz (1989) has argued that assessments of vulnerability to famine must focus explicitly on hungry season impacts.

Case studies of energy intake among farming populations in semiarid Africa have revealed seasonal variations ranging from more than 1000 to approximately 250 calories (Annegers, 1973). Hunter (1967) used anthropometry to quantify the impacts of seasonality on the adult population of a region

in extreme northeastern Ghana. Twenty-three percent of the women, and 21 percent of the men, lost at least 10 percent of their bodyweight during the hungry season. Forty-one percent of the people surveyed lost between five and nine percent of bodyweight. Only six percent did not lose weight. The magnitude of aggregate seasonal weightloss varied considerably among the region's settlements. Extremes of 8.9 percent and 3.1 percent of bodyweight were recorded for women. Men's weightloss ranged from 8.1 percent to only 2 percent of bodyweight. Subsequent studies in Senegal and Gambia determined that infants, children, and even pregnant women lose weight during the rains (Rowland et al., 1981; Jancloes and Van De Velden, 1982).

The highest incidence of several major infectious diseases occurs during the hungry season. These diseases exacerbate seasonal nutritional stress. Nutritional stress resulting from food deficits may also increase vulnerability to the effects of infection. Compendia of the seasonal elements of the ecology of disease include Chambers et al. (1981) and Schofield (1974). Diarrhea (zawo), malaria (zazzabi), and guinea worm (kurkunu) peak during the rains. Measles (dussa or kyanda) and cerebro-spinal meningitis (sankarau) are predominantly diseases of the hot dry season.

Several indicators of seasonal hardship are readily observable in study area villages. Witnessing the preparation of tiny burial shrouds is a heartsickening experience. In March, 1990, four Katanga children died of

measles. In Amarawa during April of the previous year, cerebro-spinal meningitis claimed at least two very young lives.

During intervals of damuna, mendicancy is practiced by a few emaciated adult and teenage males. On two occasions during the 1988 rainy season, serious fights erupted as prepared food (red sorghum paste and lalau sauce) was being distributed to the many young men who had participated in gayya. Skin ulcers that seemingly refuse to heal afflict a substantial proportion of farmers. Rooms and granaries collapse from heavy rains, and may require immediate repair. Pools of stagnant water form within and on the outskirts of villages, providing breeding media for mosquitoes. In villages with desiccated wells, guinea worm infections are immediately obvious. People were seen limping to expansive nearby puddles to fetch water. Research elsewhere in rural Northern Nigeria has demonstrated that diarrheal diseases among children are more frequent and more severe in settlements such as these (Tomkins et al., 1978).

Locally Generated Non-Farm Incomes

Non-farm economic activities are crucial for the majority of study area households. In most years grain purchases at least partially redress the gaps in self-provisioning, and may to varying degrees mitigate hungry season hardships. The ability to earn incomes locally through trade, crafts production, and labor is for Mortimore

(1989) a key facet of Sahelian farmers' "resilience" to climatic variation, low levels of food self-sufficiency, demographic pressures, and environmental degradation. Constituting another key facet of resilience are dry season migration and other extra-village income-generating pursuits. An alternative view is that the necessity for cash, and the myriad but often tenuous opportunities for earning it, are not indications of development, adaptation, or resilience, but are instead symptoms of a retrograde phase of economic involution and dependency (Painter, 1986; Arnould, 1982).

Cash income is a very sensitive, and often times a seemingly inscrutable topic. Socioeconomic class, gender, age, patronage, and centuries-old traditions combine to influence the magnitude and means of an individual's income. Further complicating the issue in the study area is the pervasive unlicensed trade across what is among the most porous borders in the world. Data on the trade's macroeconomic significance, its importance in regional or local economies, and its contribution to household budgets are virtually unobtainable. One can achieve a general understanding through informal discussions and observation.

Relatively wealthy men from villages on the Nigerian side of the frontier may garner impressive profits by transporting to Niger a camionette-load of grain, several hundred liters of gasoline or kerosine, a few dozen sacks of cement, or other Nigerian manufactured goods such as cooking

utensils, rubberware, or mattresses. A poorer man may sell a small quantity of gasoline, a few bottles of peanut oil, or a headload of a particular type of clay favored in traditional building construction.

Apart from the opportunities for profit through the international trade, people in study area villages have as another advantage the proximity of the Illela market. More than half of the informants in the study villages earn incomes there (Appendix 7). Participation is proportionately greatest among the wealthiest and "middle" classes, and lowest among the extremely poor of Amarawa and the "other Hausa" of Tudun Gudali Mai Ruwa. About half of the Amarawa talakawa trade in Illela.

The scale of marketing operations, influenced so much by patronage ties and access to credit, also differs among socioeconomic classes. Amarawa farmer-traders from the upper two strata spend hours each day in Illela, dealing from their stalls in sacks of grain, large baskets of cola nuts, or 20 liter tins of peanut oil or kerosine. Most of the peasant traders attend the market only on Sundays, and sell considerably smaller quantities of these goods. Petty trade in miscellaneous items, including individual cigarettes, hard candies, cola nuts, and mosquito coils, and other less remunerative trades in firewood, fodder, and rope, are practiced by poorer peasants. Trade in higher priced wares, such as foam mattresses, pots and pans, and enamelware, is generally the province of the relatively wealthy.

In addition to the potential for profits through the production and sale of wheat, the Lake Kalmalo fadama lands afford opportunities for local trade in tobacco, vegetables, and condiments. The lake's fishery is a major source of non-farm incomes for several households. Elsewhere in the study area vegetable and fruit production in the rafi corridors are means of generating cash. The other opportunities for incomes through marketing may be available to individuals in settlements without dry season farmlands or access to fisheries.

Dilancin bisashe, the local trade in livestock, is conducted by study area informants in Illela or at the two other, much smaller, markets in nearby Gada (Tuesdays) or Mamman Nsuka (Fridays). Windfall profits are realized from the sale of rams before Id El Kabir, and in December from the sale of goats to Christian Nigerians. Livestock trading is often an inherited occupation. Success in the trade requires considerable acumen in addition to capital. Household heads in Tudun Gudali Mai Ruwa and the Gidan Alkasim hamlets depend on livestock trading to a greater extent than Amarawa informants. As was noted previously, animal husbandry and trade accounts in part for dispersed settlement patterns.

Koranic scholarship and teaching is for 16 household heads a means of filling the self-provisioning gap. A scholar can expect tribute in kind (in the form of zakkat, the Islamic tithe) or in cash. Among the occupations listed

in Appendix 7, barbering is the most strongly hereditary. A father will pass the title of Sarkin Aske (head of the barbers' "guild") to his son(s). A good barber may be able to earn enough cash in one day to feed his family. The title Sarkin Fawa (head of the "butchers' guild") is also inherited, but others may practice this trade as entry is fairly easy. Despite the fact that some butchers rank among the "middle class," the trade is, for religious and cultural reasons, considered to be of very low social status. Entry into the tailoring trade requires capital, initially to pay for an apprenticeship and eventually to procure a sewing machine. Tailors' earnings depend on their skill, and consequently, their ability to attract major accounts for weddings and holidays. The meager earnings of some tailors are derived mainly from minor repairs or alterations of women's and little girls' clothing.

Other income-earning strategies listed in Appendix 7, such as cobbling and the manufacture of sorghum-stalk beds, mats, and clay bricks, may generate only small incomes. For individuals without even these modest sources of cash, wage labor is of paramount importance. In addition to seasonal opportunities for agricultural wage labor, men may find work as water carriers, porters, tobacco sorters and packers, and factota for wealthier household heads. Aikin laka, or traditional construction, is the most significant non-agricultural employment opportunity.

Extra-Local Incomes: Long-Distance Dry Season Migration,
Long-Distance Trade, and "Commuting"

Many of the local non-farm economic activities are also pursued beyond the study area. Long-distance dry season migration, usually undertaken for two or more months, is the most prevalent extra-local means of earning incomes. Two other strategies involve relatively brief absences from home: fatauci, or long-distance trade, and what Chapman and Prothero (1983) term "commuting," which entails trips of several days duration to destinations in Sokoto State and adjacent areas of Niger.

Fatauci requires capital to purchase merchandise and to secure space in a lorry. All but one of the 15 Amarawa sample household heads involved in long-distance trading are from the "wealthy" and "middle" socioeconomic classes. Six household heads from Tudun Gudali Mai Ruwa practice fatauci, three being from the wealthier group. Two sons of Gidan Alkasim's "village area" head and two household heads from Katanga are also involved in this type of commerce.

Livestock, chickens and guinea fowl, and cowpeas are the northern commodities transported most frequently to Ibadan and elsewhere in "Kurmi," the Hausa designation for southwestern Nigeria. Cola nuts, oranges, and yams are brought to the study area from the south. Fataucin hatsi, the transport and trading of grains, is probably at least as significant in monetary terms as the commerce with Kurmi. Areas in southern Katsina and southern Sokoto States, as

well as the Zaria and Kaduna regions, are among the most important sources of grains for locally based long-distance traders. Trade in manufactured goods and "modern" clothing may be considered a non-traditional form of fatauci.

Agricultural labor and traditional construction work are examples of income-earning opportunities pursued through commuting. Although commuter laboring is practiced predominantly by younger men, the desire to maintain a measure of self-respect motivates some poorer senior household heads to seek these opportunities outside their locality. Harvest work from September to November in sub-humid regions to the south is extremely important to many study area households, especially those in villages without fadama lands. Men work for two or more weeks cutting and threshing sorghum and millet, and are often paid in 50 kilogram sacks of these grains. Periods of itinerancy embarked upon during the dry season by Koranic teachers, petty traders, specialists in traditional medicines, and part-time fishermen, are also forms of commuting.

Long-distance dry season migration is known in Hausa as cin rani, which has been translated as "eating away the dry season." An oft-cited advantage of cin rani, in addition to the cash or goods procured from afar, is that for a protracted period migrants are not eating from household grain stores. One trend in dry season migration, observed in the study area and elsewhere in Hausaland (Mortimore, 1989), is for men to make two or more journeys during a

single dry season, sometimes to multiple destinations. Another is a general reduction in cin rani participation from some study areas settlements. The expanding market and economy of Illela was the most frequent explanation, while some informants added that opportunities afforded by the Kalmalo scheme also played a role.

In the view of most informants, the majority of dry season migrants are males in their late teens and twenties. Fathers often believe that as they grow older, they should be able to "retire" from cin rani and perhaps pursue local non-farm economic activities. Their sons should then assume the burden of seasonal migration. Yet the considerable number of senior household heads who recently practiced cin rani suggests a persistent reliance on this type of extra-local income generation to fill gaps in self-provisioning (Appendix 8). Reliance on dry season migration is most pronounced among the Amarawa talakawa and the majority of Tudun Gudali Mai Ruwa farmers.

Kurmi has been and remains the dominant destination overall, and especially for seasonal migrants from Tudun Gudali Mai Ruwa. Destinations for Amarawa migrants are more diversified, in that they include, inter alia, southern Sokoto State, the "Middle Belt," and the Adar region of Niger (Appendix 9). Agricultural wage labor and traditional building construction are the major employment opportunities (Appendix 10). Other occupations practiced within the

locality and in commuting also earn money for migrants at their cin rani destinations.

The household heads' cin rani reported in Appendix 8 almost certainly represents less than half of the total participation in seasonal migration from the study settlements. The data are from sub-samples of informants with apparently good memories, and who were forthcoming about the often harsh living conditions and generally unprestigious work they perform at their destinations. But more important in this regard is the prevalence of participation by younger men who were not systematically interviewed.

Inquiries of senior men concerning their sons' contributions to household budgets sometimes evoked condemnation of, and even tirades against, these junior family members. Some household heads communicated their indignation with a peevish silence. Others responded that they simply did not know their sons' cin rani destinations, what type of work they usually find, or the magnitude of their earnings. On the other hand, 25 Amarawa household heads provided substantive information about their sons' migrations. A rather interesting and remunerative activity is gardening on government lands in Lagos. Five sons from one "middle class" and two "peasant" households spend the entire dry season cultivating and marketing vegetables. One senior household head, a "peasant," proudly declared that his two sons send ₦100 to him every month from Lagos. A

"middle class" informant has two sons who trade in modern manufactured clothes in Borno. The son of another man from the same social stratum has rights to a stall in a Jos market, from which he sells enamelware throughout the dry season. Two sons from a "peasant" household earned incomes in Niamey by embroidering hats (hula) and gowns (riga). A majority of the junior men, however, are engaged in agricultural wage labor and construction work, in addition to work as laundrymen. Most of these individuals spend the dry season in Kurmi.

Summary

This chapter has shown that a chronic lack of food self-sufficiency and the annual hungry season have led to the development of a complex of adaptive strategies. Famine coping strategies are in most instances intensified or altered adaptive strategies.

Use of crop by-products and some wild foods is typical during non-crisis years. This strategy assumes greater importance after harvest failure. The persistent lack of self-sufficiency in grains requires that most households earn off-farm incomes. Mobility is essential in many of these endeavors. Annual dry season migrations, practiced in "normal" years predominantly by younger men, may be considered the basis for distress migration involving entire families.

Levels of food self-sufficiency vary from village to village and within villages according to socioeconomic status. Opportunities for redressing gaps in self-sufficiency also vary, as does the reliance on off-farm income, including extra-village income. The impacts of seasonal hunger, and logically, vulnerability to famine, are greater in villages and among groups that face major self-provisioning deficits and have fewer or less effective income-earning opportunities. Baseline maps portraying levels of food self-sufficiency and the character and robustness of adaptive strategies would constitute a major improvement to famine early warning and mitigation programs.

More research concerning the impacts on crop yields of rainy seasons with different attributes also would result in major improvements in these programs. This chapter has demonstrated that deficient June rainfall results in lower yields than does a droughty August. However, interannual variations in yields may also be attributed to soil characteristics, labor supply, and pests. Crop yield models incorporating rainfall and other variables could have a significant role in signaling incipient famine.

Chapter six will examine the impacts of twentieth century famines and their importance for the theoretical concerns of this study and for the development of an effective famine early warning and mitigation program. Famine-driven distress migration, both into and out of the Sahel study area, is the principal focus. Cases of return

migration, prompted or made possible by improved agro-climatic conditions, are documented.

NOTES FOR CHAPTER FIVE

1. These statistics were brought to my attention by an undergraduate student in the geography department at Usman Danfodio University. His source was a Ministry of Agriculture and Natural Resources report on the Nigerian government's Accelerated Wheat Production Programme (AWPP).

2. Ibid.

3. The labor required to irrigate red sorghum, especially to dig channels from the main ditches into the acres, is probably beyond the physical and/or financial means of most local farmers. Moreover, a series of good rain events, coupled with irrigation, could result in crop failures due to saturation.

4. The amount of compensation, or whether farmers were compensated at all, are extremely controversial and sensitive subjects. Irrigation officers insisted that farmers whose lands were taken certainly must have been compensated, although they have no personal knowledge of events leading to the scheme's opening in 1972. The few farmers who were asked directly about compensation averred, in the course of wide-ranging tirades against the government, that they had not received even one kobo (cent). On different occasions, however, several of these same farmers stated unequivocally that Yakubu Gowon's administration (1966-75) was the only Nigerian government that treated peasants fairly (or even benevolently). In their words, "Ban da zamanin Gowon ba mu taba ga amfanin gwamnanti ba" (Apart from Gowon's time, we have never seen the usefulness of the government).

5. According to their Hausa neighbors, a Fulani household herd comprising 100 head of cattle is not unusual.

6. Hausa farmers differ as to whether a talaka (peasant) can afford the services of these Fulani. The majority opinion is that a farmer must be at least "middle class" to secure the benefits of what used to be a "symbiosis," i.e., a simple exchange of crop stubble for manure.

7. That herders have been penetrating farther south, and remaining in these relatively moist regions for longer periods of time, has been documented in Ivory Coast (Bassett, 1986, 1988), Chad (Clanet, 1982), and the Central African Republic (Boutrais, 1990).

8. According to some authors, Udawa (sing. Baudi) are a Fulani clan. Delehanty (1988) reported that this term applies to a Fulani group in south-central Niger. Abraham

(1962) indicated that the Udawa Fulani are residents of the Timbuktu region of Mali.

9. Farm abandonment is also a major problem in the Gusau region of Sokoto State. According to Iliya (1988), the major causes are labor shortages, abundant rainfall, and over-application of chemical fertilizers.

10. See Iliya (1988) for details. Professor Iliya is continuing to investigate the pervasiveness of drug use in rural areas and its impacts on Nigerian agriculture. Both stimulants and depressants are readily available in study area villages.

11. Gozoro is an "early" locust that eats ripening millet but usually dies by the time this grain matures. Kafadda and kafuru are "late" varieties of locust that are most destructive to sorghums and the cowpea crop. Lindi and hurduddu are other varieties of late locust. Zulut, qwangiya, and akalaya infest the janjare crops on the lowlands. Other terms for locust varieties include dakare, danku, lalace, and kanaruwa. None of these names is included among the 40 listed by Bargery (1951) under the generic term fara (locust or grasshopper).

12. Asking farmers to report their yields might be tantamount to requesting of an American information about his/her salary, bank account, or income tax return. Unfortunately, no viable methodological alternative exists. An inventory of the contents of granaries is, for cultural and social reasons, thoroughly impossible. Several other researchers have relied on Sahelian farmers' recollections to obtain data on crop yields. Painter (1986), for example, asked farmers to recall the number of bundles harvested in as many previous years as memory allowed. Faulkingham (1975) found that yields were "reported immediately" and "long remembered." Sutter (1982:82) perhaps had a more accurate method for determining yields, in that he had measured farm holdings, weighed samples of bundles, and observed the number of bundles set outside compounds "for purposes of drying and some form of harvest evaluation connected with Islamic law..." Yet "producers' declarations" were the principal basis of his harvest assessments. In my view, Mortimore's (1989:57) summary of the significance of declared yields is most insightful, viz., that these data "provided a basis for evaluating the perceived impact of drought, which was the starting point for adaptive strategies."

13. Apart from additional group interviews, fieldwork in Amarawa had been completed before the 1989 harvest. This conclusion is therefore based on the reports of informants in Tudun Gudali Mai Ruwa and the Gidan Alkasim hamlets.

14. As is the case with yields, food consumption and the status of granaries may often be sensitive areas of inquiry. The congruity observed in cross-checking the responses to these questions was nonetheless encouraging. A few farmers expressed mild indignation when asked to address food stores and requirements. Most rather stoically supplied the requested information. Other informants answered in great detail, offering explanations of, inter alia, how they selected and stored grain for planting the next year, and how the amount of grain contained in bundles was likely to vary, especially in years of severe drought. Some of these forthcoming individuals augmented their estimates of weekly grain consumption with information on the number, gender, and general age of the people they support in addition to themselves. (Examples include: 1 wife, no children, <1 bundle/week; 1 wife, 1 divorced daughter, 1 bundle/week; 1 wife, 1 teenage son, 1½ bundles/week; 2 wives, 3 small children, 2 bundles/week; 2 wives, 4 children of different ages, 3 bundles/week; 1 wife, 1 junior brother and his wife, and "many" children of different ages, 4 bundles/week. These estimates fall within the range of consumption requirements cited in Hill, 1972, for a mixed population of men, women, and children in Hausaland, i.e., from 0.5 to 1 kg of grain per head per day.) The lack of more precise data on grain transactions may, for several reasons, compromise the accuracy of the representations of self-sufficiency. For example, a farmer who was able to purchase grain at harvest time may have included these bundles in his yield declarations. The response "sell grain to pay for camel portorage" could have been camouflage for more substantial grain sales that were necessary in order to cancel debts. In both of these cases self-sufficiency could have been overestimated. An example of the potential for underestimation might be the case of individuals who sold too much of their own production in the post-Harmattan seller's market and later had to purchase grain as a result of their miscalculation.

15. Examples of farmers' assessments of the agro-climatic parameters of lisso soils include: 1) "I get the best yields with one good rain every 7 or 10 days. My farms don't like more frequent and closely spaced (kusa-kusa) rainfall;" 2) "If rainfall is abundant, I harvest 40 bundles. If it is like the year before last [1987], I harvest 60 or more;" 3) "I'm not able to manure my farms heavily. This was good in the year before last [1987], when I got 50 bundles. Last year [1988] it was bad. I got only 10."

CHAPTER SIX: FAMINE-RELATED MIGRATION AND THE
1983-85 FAMINE IN THE SAHEL STUDY AREA

This chapter presents case-by-case data concerning distress migration, as well as information on other famine impacts. Although the narrative style might seem "particularistic" and repetitive, it is justified because migration during famine has been for most people an agonizing ordeal. Partly for this reason, interview data provided by former famine refugees are rare. Each informant's detailed recounting of his experiences certainly merits a two or three sentence summary, while the apparent repetitiveness drives home the point that many famine refugees have recovered and returned. This information is summarized in the series of maps depicting famine-related migration, and in the concluding section of the chapter.

For each crisis in the Illela-area chronology (Table 6.1), three general types of famine-related migration are discussed: reported permanent out-migration, out-migration – subsequent return, and immigration to the study settlements. Data on the first two types address the research question concerning the prevalence of return migration by refugees. Overall, the ratio of reported permanent out-migration to incidents of out-migration – subsequent return is 3:1. Household heads have abandoned their wives and children, but family distress migration has occurred more frequently. Although only about 20 percent of

Table 6.1: Famine Chronology for the Sahel Study Area

<u>Year</u>	<u>Name</u>
1904	Makaji
1913-14	Saketariya
1920-22	Kyalle Zumunka, 'Yar Kirit, Buda Bai, 'Yar Kuzut
1926-27*	Not Recalled
1931-32	Shekara Kyamro
1942-43	Takesharbo, Mazarkwaila
1953-54	Muda
1965-67	Mai Zobe
1973-74	Muna Sane, Shekara Karmami, 'Yar Taralle
1983-85	Buhariyya

* Evidence from archival sources only

individual informants were willing or able to discuss their own or their forebears origins, such information is important in evaluating this study's second principal research question regarding recovery from famine. Data on immigration and out-migration not related to famine are presented in Appendix 11.

Additional data on famines that occurred prior to the 1980s include recollections of recourse to various wild or famine foods, and reports of localities to which household heads traveled in search of work or grain. For the 1983-85 famine Buhariyya, accounts of migration and reliance on alternative foods are augmented with specific data on grain crop yields and famine impacts and coping strategies. Data on asset liquidation provide only equivocal support for the ratchet effect.

Some of the data on population movements and other famine impacts indicate that famine spreads within individual communities and from village to village. Data on distress migration during the 1983-85 crisis also reveal local-scale variations in vulnerability to famine. Household distress migration was most pervasive from Lakoda, a water deficit village. Such spatial variations are also indicated by the data pertaining to the famines of 1953-54, 1965-67, and 1972-74.

Makaji (1904)

Makaji prompted the first "shigowa Adarawa," or influx of people from the Adar region of Niger, and also may have played a role in the founding of the Gidan Alkasim hamlet. The only other information on the impacts of the 1904 famine was provided by two elders' testimony on alternative foods, which included the only instance of reliance on wild cassava or yam (Table 6.2).

Saketariya (1913-14)

Alternative foods reportedly consumed during Saketariya included what are truly famine foods, such as domestic calabashes and leather apparel (Table 6.3). Informants were not able to recall specific instances related to this famine of permanent out-migration or return migration. They remembered, however, that able-bodied men from Amarawa rushed to nearby settlements to avail themselves of opportunities to labor in exchange for prepared food. Donkey caravans set out for Silame or Binji in attempts to procure grain (Figure 4.1). A minimum of twenty armed men were required; a smaller party would have been attacked.

The parents of three Amarawa informants migrated from villages in Adar during this crisis (Figure 6.1). M, a "peasant" whose parents came from Mogheur, had the resources to cultivate wheat on his own initiative during the 1989-90 dry season (chapter five). H is a member of the "middle class" and trades in grain from his stall at the Illela market several days per week. Al Haji A's parents had told

Table 6.2: Alternative Foods Reported Consumed During Makaji, c. 1904
Total Informants N=2

<u>Hausa</u>	<u>English</u>	<u>Latin</u>	<u>Part Eaten</u>	<u>Informants Reporting (N)</u>	<u>Remarks</u>
<u>rogon daji</u> or <u>tsibiri kinkini</u>	"bush cassava"	<u>Ampelocissus Grantii</u>	tuber	2	Could also have been a wild species of yam (<u>Dioscorea</u>)
<u>tafasa</u>		<u>Cassia tora</u>	leaves	1	Leaves used to make 'yar unguwa, now a common snack food
<u>anza</u>		<u>Boscia augustifolia</u> <u>Boscia senegalensis</u>	berries	1	
<u>sabe</u>		<u>Panicum albidulum</u>	grains	1	
<u>loda</u>		<u>Rogeria adenophylla</u>	?	1	Not identified as edible by Dalziel (1916)
<u>danya</u>		<u>Spondias sp.</u>	fruit	1	

Table 6.3: Alternative Foods Reported Consumed During Saketariya, 1913-14
Total Informants N=5

<u>Hausa</u>	<u>English</u>	<u>Latin</u>	<u>Part Eaten</u>	<u>Informants Reporting (N)</u>	<u>Remarks</u>
<u>doruwa</u>	locust bean tree	<u>Parkia filicoidea</u>	seeds, pods	2	Cakes made from seeds commonly eaten
<u>lalau</u>		<u>Corchorus tridens</u>	leaves	1	Common sauce ingredient
<u>tsaida</u>	caltrop	<u>Tribulus terrestris</u>	fruit (?)	2	Described by Dalziel (1916:94) as "a prostrate yellow-flowered weed with a strongly spined fruit that injures the foot." Not identified as edible.
<u>kinciya</u>		<u>Stylochiton Dalzielii</u>	leaves & root	1	Prolonged boiling required to remove bitterness (Dalziel, 1916)
<u>kauci</u>	West Indian mistletoe	<u>Loranthus pentagona</u>	?	1	A tree parasite
<u>dusa</u>	grain bran			2	
<u>walki</u>	leatherware			1	Leather sandals, aprons, etc. boiled and eaten
<u>kwariya</u>	domestic calabash			4	Calabashes ground up, boiled, and made into <u>tuwo</u> (paste)
<u>abincin</u> <u>bishashe</u>	animal feed			1	Brought from Tahoua

KEY TO FIGURE 6.1

Map ID #	Migrants	Migrated From	Time	Reason(s) Stated for Migration	Other Long-Term Migration(s)	Present Socioeconomic Class
1	informant's mother, father, other relatives	Mogheur village	1913-14	famine	Shekara Kyamro (1931-32); Muda (1953-54)	talaka (peasant/commoner)
2	informant's mother, father	village near llela-Umani (Adar)	1913-14	unrecollected	no	masakaita ("middle class")
3	informant's mother, father	village near llela-Umani (Adar)	1913-14	famine	no	attajiri (wealthy)
4	informant, informant's mother, father, other relatives	Gidan Bango village	1931-32	famine	no	masakaita ("middle class")
5	informant, informant's mother, father	Luguhuru village	1953-54	famine, kinship ties, opportunities for labor on fadama	no	talaka (peasant/commoner)
6	informant, informant's mother, father	Luguhuru village	1953-54	famine, patronage ties to wealthy man	no	talaka (peasant/commoner)
7	informant, informant's mother, father	Luguhuru village	1953-54	not stated	seasonal migration with family, 1973-74	masakaita ("middle class")
8	informant	Issa town	1953-54	opportunities for commerce in fish	no	attajiri (wealthy)
9	informant, informant's mother	Gidan Nashayau village	1953-54	mother's divorce	no	talaka (peasant/commoner)

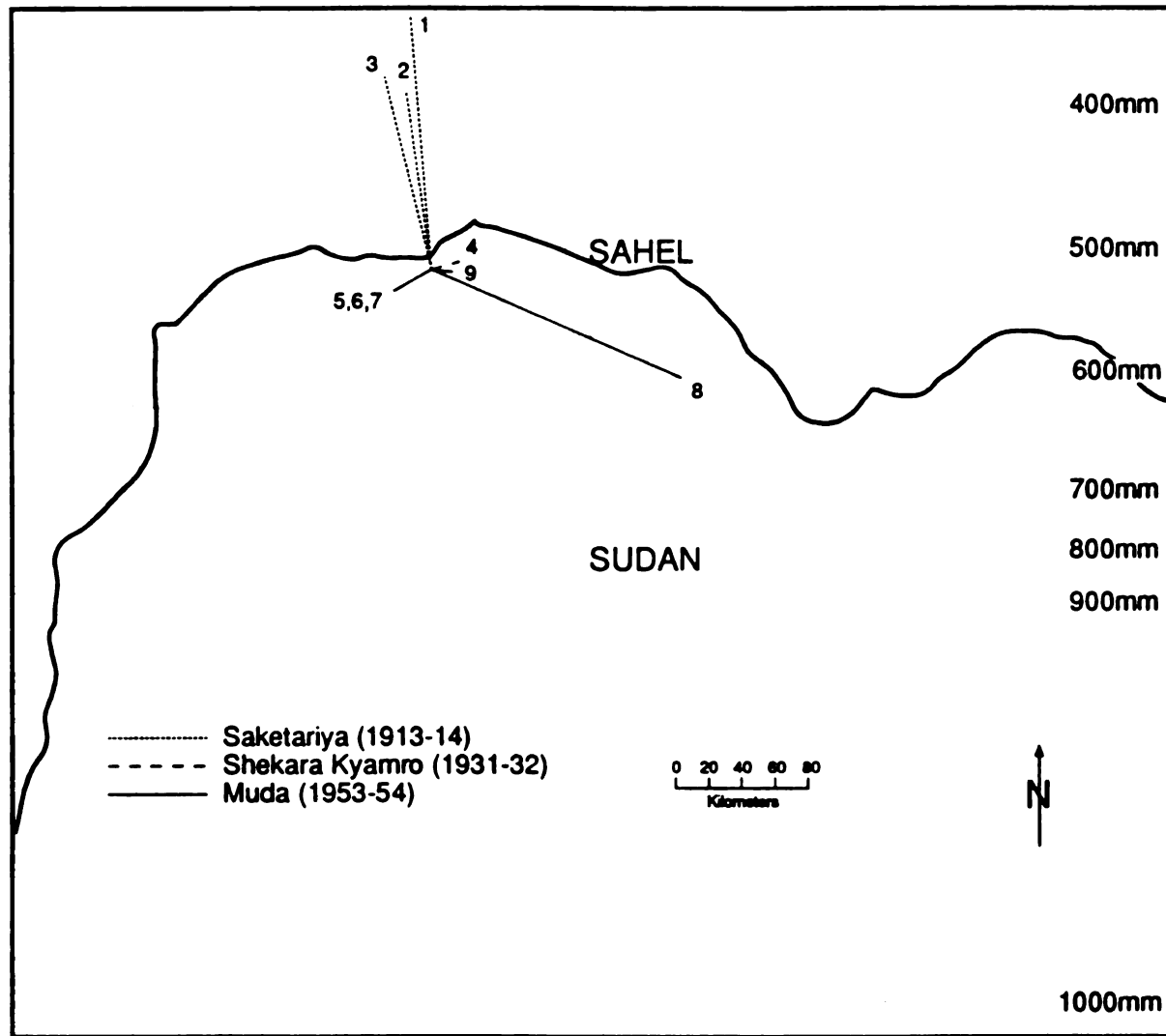


Figure 6.1: Famine-Related Immigration to Amarawa Village, 1913-54

him that before their flight from an Adar village, they resorted to eating calabashes. An intermediate destination together with other refugees was the Munlela ward of Gwadabawa. From here they migrated to Amarawa after securing farmland and a plot on which to construct a compound. Al Haji A is now the wealthiest person in Amarawa. His compound is built of cement and metal roofing material, and he owns two lorries which he uses to practice long-distance trade. His son owns an automobile. How representative these household heads are of the offspring of this second "shigowa Adarawa" cannot be judged, yet their current status demonstrates that recovery from famine is possible, at least over the course of a generation.

Shekara Kyamro (1931-32)

For Shekara Kyamro, the 1931-32 crisis catalyzed by locust attacks, consumption of true famine foods was not recollected. Kalgo and karanqiya, however, may be considered only marginally edible (Table 6.4). Tahoua and settlements in its vicinity were the most frequently cited destinations for labor migration and for procuring grain.

S, a member of the "middle class" and a dealer in cowpeas, was brought to Amarawa as a child by his parents as a result of Shekara Kyamro (Figure 6.1).

Two families emigrated from Amarawa to villages in Niger. As a child G migrated with his family to Bazzazaga, where they remained for the 1932 rainy season (Figure 6.2).

Table 6.4: Alternative Foods Reported Consumed During Shekara Kyamro, 1931-32
Total Informants N=5

<u>Hausa</u>	<u>English</u>	<u>Latin</u>	<u>Part Eaten</u>	<u>Informants Reporting (N)</u>	<u>Remarks</u>
<u>kalgo</u>		<u>Bauhinia reticulata</u>	Pods	1	Not identified as edible by Dalziel (1916)
<u>karangiya</u>	burr grass	<u>Cenchrus catharticus</u>	grains	1	
<u>tafasa</u>		<u>Cassia tora</u>	leaves	2	
<u>sabe</u>		<u>Panicum albidulum</u>	grains	2	
<u>lalau</u>		<u>Corchorus tridens</u>	leaves	1	
<u>anza</u>		<u>Boscia augustifolia</u>	berries	2	
		<u>Boscia senegalensis</u>			

They did not farm, however, but relied for their subsistence on fodder and firewood collection and wage labor. The only recollected reason for this choice of destination was the availability of food, including anza. The migrant family had no kinship ties with their hosts. M, whose parents had migrated to Amarawa 18 years before during Saketariya, returned with his extended family to Mogheur after the disastrous 1931 harvest (Figure 6.2). The village head allocated bushlands to them to clear and cultivate. M and his family remained in Mogheur for seven farming seasons. Each year one of his uncles traveled to Amarawa to pay taxes, so that their farmlands might not be redistributed to others. M did not recall the reason for his family's return in 1938.

Neither informant cited specific examples of other migrations related to the hardship of Shekara Kyamro, although both stated that emigration from the study area to Adar had been extensive. Some migrants remained permanently in Niger while others returned.

Takesharbo/Mazarkwela (1942-43)

Gidan Alkasim informants were the only group to report that famine-related migration occurred in the early 1940s. One extended family emigrated from Gidan Alkasim as a consequence of Mazarkwela (Figure 6.3). The hardship brought about by this famine, and the death the following year of the senior compound head, caused the dissolution and dispersal of this family.

KEY TO FIGURE 6.2

Map ID #	Migrants	Destination	Years of Absence	Reason Stated for Migration	Reason Stated for Return	Other Long-Term Migration(s)	Present Socioeconomic Class
1	informant, informant's mother, father, other relatives	Bazazaga village	c. 1931-33	famine	end of famine	no	talaka (peasant/commoner)
2	informant, informant's mother, father, other relatives	Mogheur village	c. 1931-38	famine	unrecollected	Saketariya (1913-14); Muda (1953-54)	talaka (peasant/commoner)

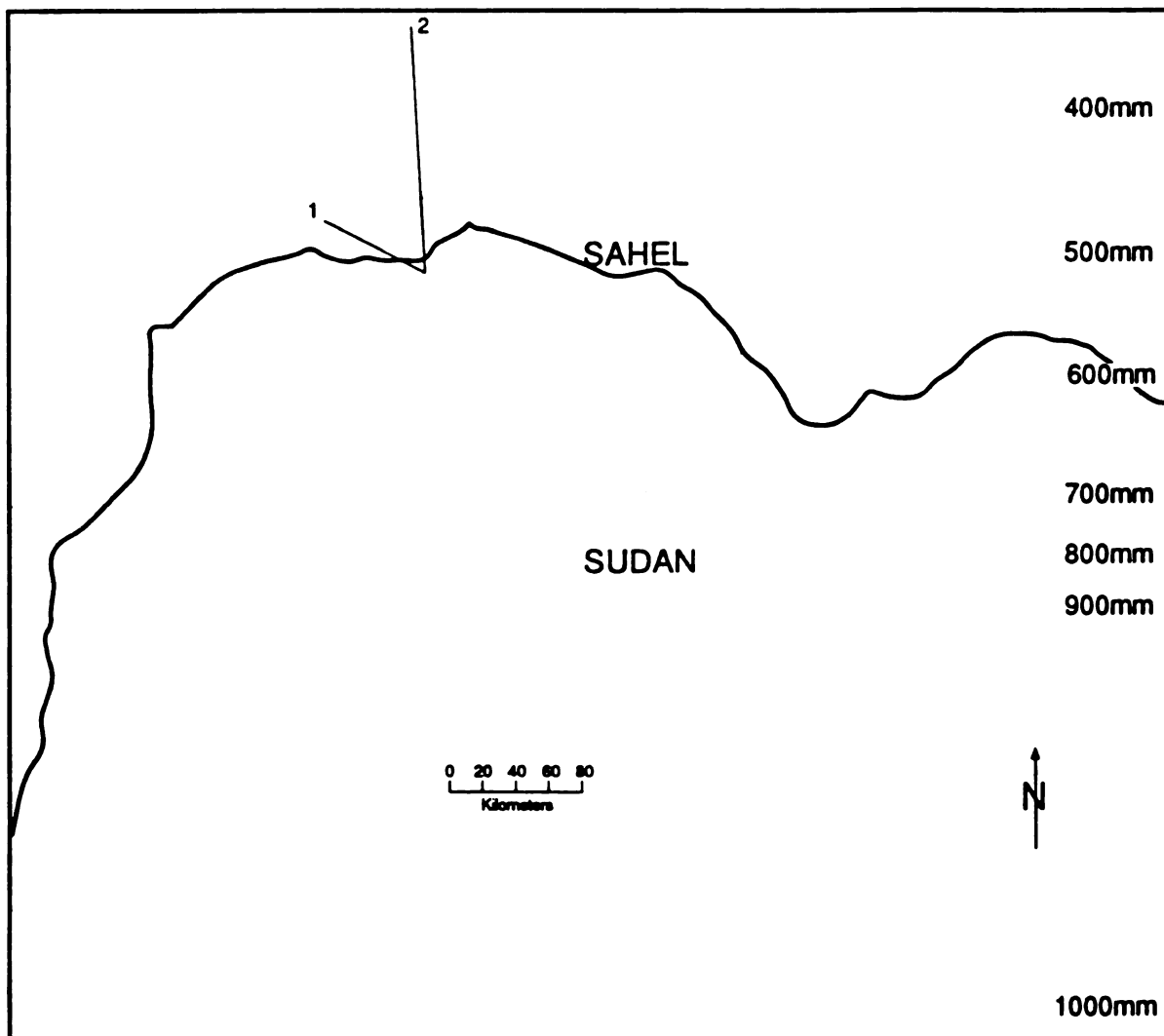


Figure 6.2: Out-Migration from Amarawa Village and Subsequent Return, Shekara Kyamro (1931-32)

T migrated as a boy with his family from Dan Makeri village, Niger. Locust attacks and famine were the reasons he recalled for their migration. T must be considered a successful agro-pastoralist. He produced nearly 100 bundles of grain in 1988; he owns two upland farms and a large flock of sheep and goats; and he trades intermittently in modern manufactured rope at the Illela and Gada markets. When a son of the emigrant family discussed above returned in 1986 to sell his farm, T was able to purchase it for ₦800.

Amarawa informants related that they or their parents made repeated trips to Gwadabawa attempting to procure food. The only other specific information on the impacts of the 1942-43 famine is recorded in Table 6.5. Cassava bark should be considered a true famine food as its consumption may be hazardous. The first use of cassava flour as an alternative food was reported.

Muda (1953-54)

According to the few informants with whom the topic of famine-related deaths was discussed, Muda was the most recent "famine that killed" in the Illela area. Deaths were not attributed to yunwa (hunger), but to kumbura (swelling). Table 6.6 includes three veritable famine foods: livestock blood, cassava bark, and uncookable and undigestible cowpeas. These latter two may well have contributed to the swelling and increased rates of mortality.

A few informants related that they were able to find work and food in Birnin Konni, Kalmalo, and Darna (a village

Table 6.5: Alternative Foods Reported Consumed During Takesharbo, 1942-43
Total Informants N=7

<u>Hausa</u>	<u>English</u>	<u>Latin</u>	<u>Part Eaten</u>	<u>Informants Reporting (N)</u>	<u>Remarks</u>
<u>tafasa</u>		<u>Cassia tora</u>	leaves	3	
<u>lalau</u>		<u>Corchorus tridens</u>	leaves	3	
<u>anza</u>		<u>Boscia augustifolia</u> <u>Boscia senegalensis</u>	berries	1	
<u>tsaida</u>	caltrop	<u>Tribulus terrestris</u>	fruit (?)	1	
<u>dusa</u>	grain bran			2	
<u>kwalfan rogo</u>	cassava bark			2	
<u>garin rogo</u>	cassava flour			1	

Table 6.6: Alternative Foods Reported Consumed During Muda, 1953-54
Total Informants N=14

<u>Hausa</u>	<u>English</u>	<u>Latin</u>	<u>Part Eaten</u>	<u>Informants Reporting (N)</u>	<u>Remarks</u>
<u>tafasa</u>		<u>Cassia tora</u>	leaves	7	
<u>lalau</u>		<u>Corchorus tridens</u>	leaves	4	
<u>dorowa</u>	locust bean tree	<u>Parkia filicoidea</u>	seeds, pods	3	
<u>kuka</u>	baobab tree	<u>Adansonia digitata</u>	leaves, fruit	1	Leaves are a common sauce ingredient
<u>aduwa</u>	desert date tree	<u>Balanites aegyptiaca</u>	flowers	2	<u>Dubagira</u> , the flower of the desert date tree, is commonly eaten
<u>sabe</u>		<u>Panicum albidulum</u>	grains	2	
<u>intaya or acca</u>	"hungry rice"	<u>Digitaria exilis</u>	grains	2	Has been cultivated as a crop
<u>anza</u>		<u>Boscia augustifolia</u> <u>Boscia senegalensis</u>	berries	3	Was sold at the Illela market
<u>tsaida</u>	caltrop	<u>Tribulus terrestris</u>	fruit (?)	4	
<u>kabushi</u>	squash	<u>Cucurbita Repo</u>	flesh	1	Is a cultivated crop
<u>garin rogo</u>	cassava flour			2	
<u>kukuma</u>	very hard cowpeas			3	The cowpeas are so hard that they will not cook. When eaten, cause major gastro-intestinal distress and "swelling."
<u>inin bishaske</u>	livestock blood			4	Contrary to the rules of Islam, the blood of slaughtered livestock was cooked and ingested.
<u>kwalfan rogo</u>	cassava bark			9	

KEY TO FIGURE 6.3

Mao ID #	Hamlet	Migrant(s)	Time	Destination(s)	Reported Outcome
1	Gidan Alkasim	extended family	1942-43	Kira/Gidan Dandedi village	some family members remained Kira/Gidan Dandedi, got farms; family head, wife, son, other family members returned Gidan Alkasim after one farming season; family head died, wife remarried man from Tudun Gudali Mai Ruwa; son emigrated to Bakura to attend adult Koranic school, returned Gidan Alkasim 1986 to sell farmland
2	Gidan Alkasim	family head	1953-54	Mara village	got farms Mara by cutting bush; returned Gidan Alkasim to collect family; became Koranic scholar; returned Gidan Alkasim c. 1980 to sell farmland to brother
3	Zangon Tsakuwa	family	1972-74	Takar village	ND
4	Zangon Yamma	family	1984	Kaduna city	returned Zangon Yamma for 1988 farming season (first time since 1983); continued dry season residence Kaduna
5	Katanga	family head	1983	Koko town	returned to collect some family members 1984; rents six farms in Koko for cultivating cassava

ND = no data

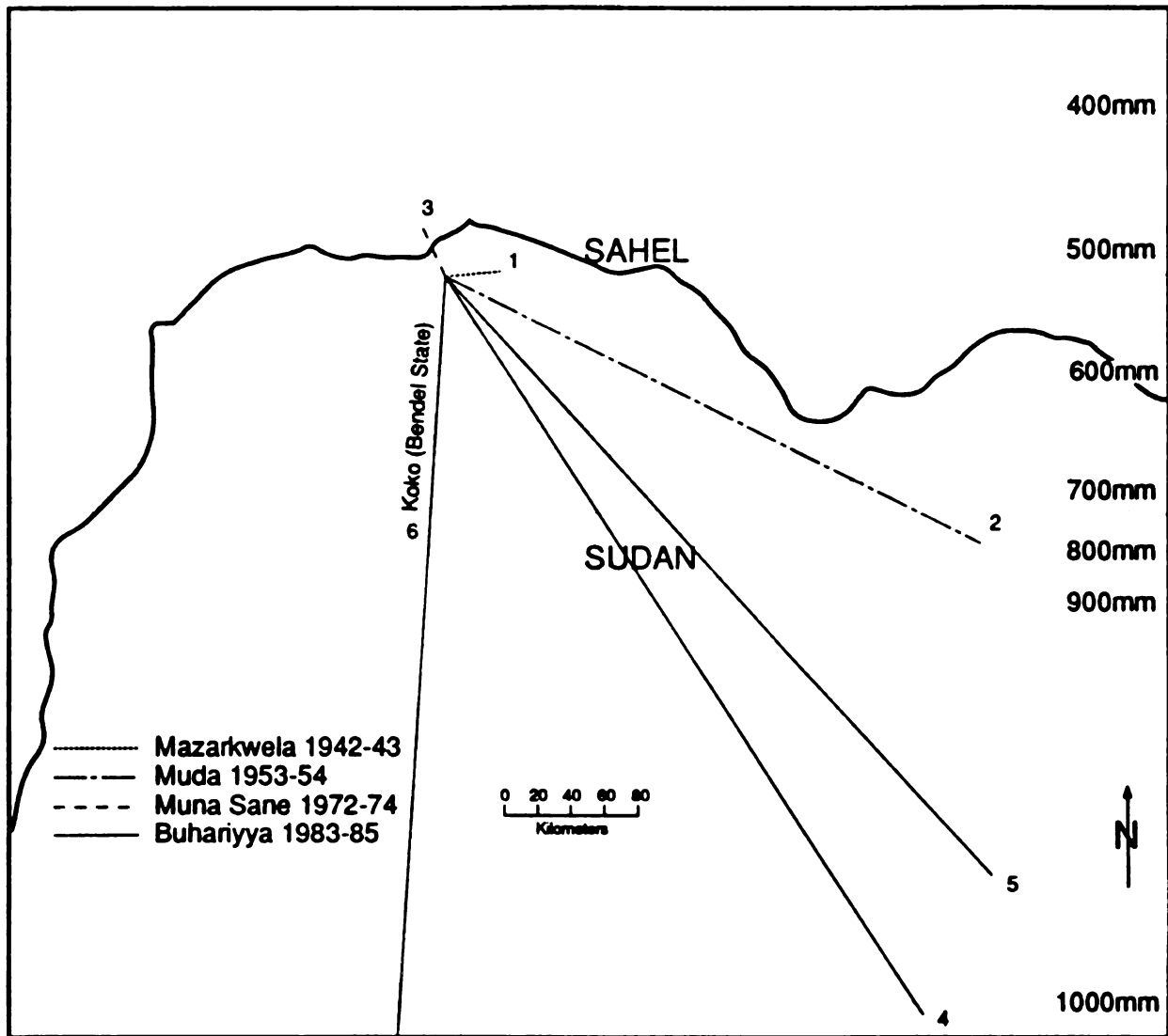


Figure 6.3: Reported Permanent Out-Migration during Famines from Gidan Alkasim Hamlets

near Gwadabawa). Some women also sought local opportunities for wage labor. Tudun Gudali Mai Ruwa informants related that they were able to obtain grain in Tarike, and that people from other villages converged on their settlement "to eat cassava." Most informants, however, recalled that much greater distances had to be negotiated on foot in order to procure food. The unavailability of motorized transport was seen as a major reason for the severity of Muda. Tahoua and Gidan Ider were the most frequently cited destinations in Niger. In Nigeria, informants brought grain back from Gusau, Wanke, and Dutsen Ma. Two informants attested that during the worst interval of Muda, food was completely unobtainable until they reached Dandume.

Five informants reported immigrating to Amarawa after the 1953 harvest failure. Lughuru, one day's journey on foot from Amarawa, was the village of origin of three informants (Figure 6.1). These men, who were boys or young adults at the time, trekked together with their parents and other family members. Opportunities for wage labor, and patronage and kinship ties, influenced the choice of Amarawa as their destination. Their farms in Lughuru were not sold, but after several years were reallocated to others by the village head. In Amarawa the informants' parents were able to secure farms. The informant classified as masakaita inherited two farms from his father and has purchased an additional six. The other two "peasant" informants each

inherited a farm. One has purchased an additional parcel, and the other was renting two farms in 1988 and 1989.

Al Haji B's migration to Amarawa avowedly was not motivated by the hardships of Muda, but by the opportunity for increasing his profits in the fish trade. Patronage ties to the District Head, Sarkin Gobir Gwadabawa, made it easy for him to re-establish himself as a farmer-trader. L's migration as a boy after his mother's divorce suggests that the name Muda does not epitomize apocryphal events (Figure 6.1).

The only other reported immigration during the 1953-54 famine was to Tudun Gudali Mai Ruwa. Five families from Cilgo, a Nigerien village near the border, may have been among those who came "to eat cassava." They remained in Tudun Gudali Mai Ruwa for 12 or 13 years, until Mai Zobe.

As a result of Muda, one man, and later his family, emigrated permanently from Gidan Alkasim (Figure 6.3). He is perceived as having been successful at his destination. The only famine-induced out-migration acknowledged by Tozai elders occurred after the 1953 harvest. It was evidently a mass migration. One group of Tozai families established a new village near Funtua, which they named Mashe. (The founder and village head had visited Tozai only a few days before the second group interview.) Four existing settlements received refugees from Tozai: Sabon Layi (west of Dandume), Gidan Boka (east of Kaura Namoda), Tsantsomawa (south of Gusau), and Kadauri (near Maru, Sokoto State).

No one was recalled as having migrated from Tudun Gudali Mai Ruwa during Muda. Amarawa, on the other hand, experienced considerable permanent out-migration (Figure 6.4). Five families reportedly undertook the overland Hajj to Mecca, and are thought to be residing in a Hausa community in Sudan. Another family emigrated to a village in Adar. Two men of uncertain civil status, and one man who divorced his wife, also emigrated.

Five incidents of out-migration and subsequent return occurred as a result of Muda (Figure 6.5). Two Amarawa families left immediately after the 1953 harvest failure. D.B.'s family sold one farm before their departure. Both families traveled to Sokoto on foot, where they got space on a lorry bound for Gusau. From here they decided to trek to Dansadau together with refugees from Makina, Gaidau, Mamansuka, Koringo, and other study area villages. These families formed a village near the isolated compound of an indigenous extended family headed by a man named Gwandu. The village was accordingly named Unguwar Gwandu. Both Amarawa families passed three farming seasons in this new settlement, enjoying good yields and general prosperity after the first year. M, whose family had been involved in two previous famine-related migrations, returned to Amarawa at his mother's behest. D.B. stated simply that Amarawa was his family's home, and asked in mock indignation whether I expected ever to return to America.

KEY TO FIGURE 6.4

Map ID #	Migrant(s)	Reported Domestic Situation at Time of Departure	Destination(s)	Reported Outcome
1	family head	divorced wife in Amarawa	Kagara More village	got farms, remarried
2	man	ND	Tera village	got farms, has a family, became a tailor
3	family		unrecollected village in Adar	ND
4	man	ND	Dansadau area	ND
5, 6, 7, 8, 9	families		Mecca	living in a Hausa community in Sudan

ND = no data

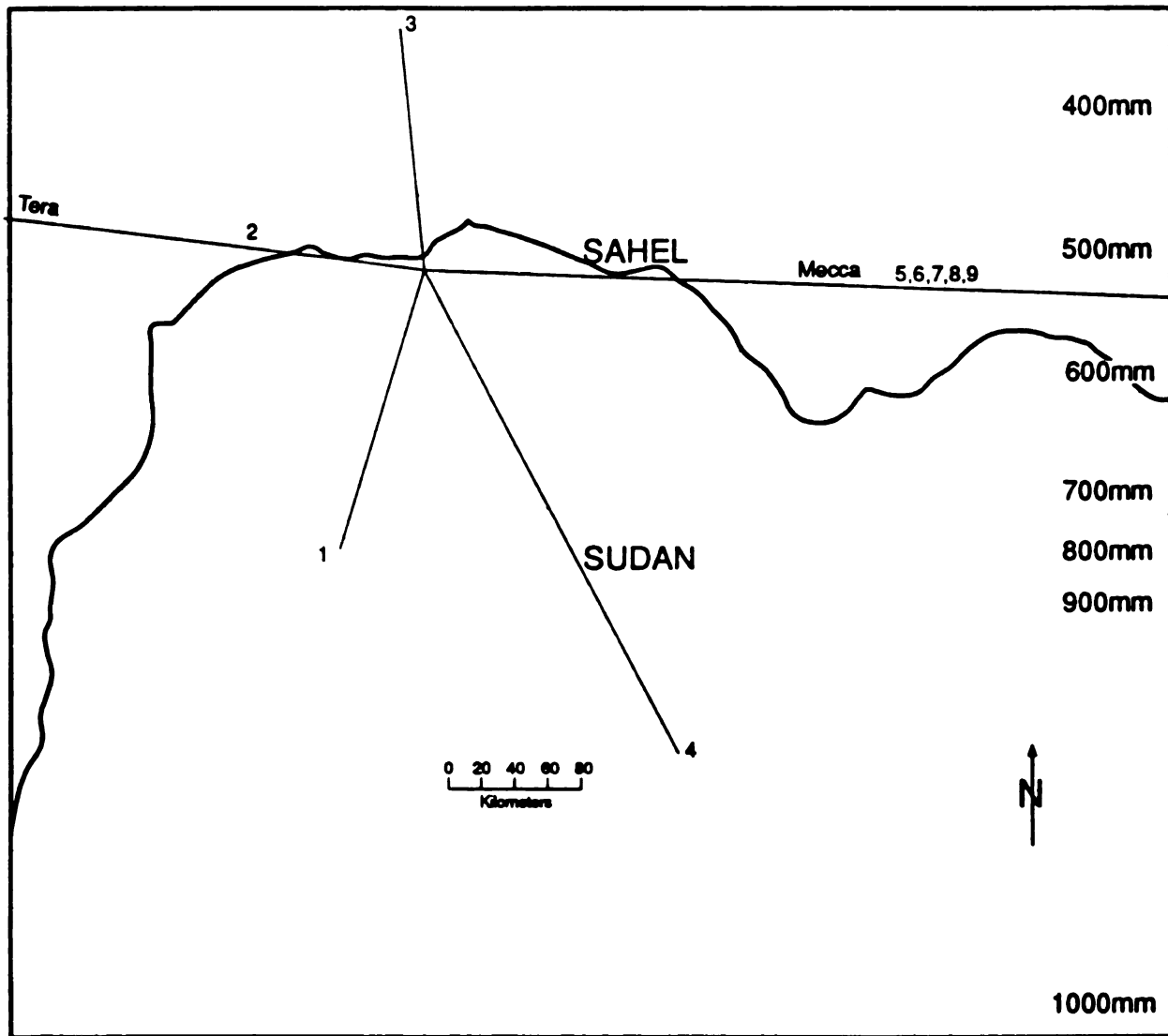


Figure 6.4: Reported Permanent Out-Migration from Amarawa during Muda (1953-54)

KEY TO FIGURE 6.5

<u>Mao ID #</u>	<u>Migrants</u>	<u>Destination(s)</u>	<u>Years of Absence</u>	<u>Reason Stated for Migration</u>	<u>Reason Stated for Return</u>	<u>Other Long-Term Migration(s)</u>	<u>Present Socioeconomic Class</u>	<u>Other Information</u>
1	informant, informant's mother, father, wife, children, other relatives	Unguwar Gwandu village	1953-56	famine	Amarawa is home	no	talaka (peasant/commoner)	sold one Amarawa farm before migration
2	informant, informant's wife, children, other relatives	Unguwar Gwandu village	1953-56	famine	pressure from parents	Saketariya (1913-14); Shekara Kyamro (1931-32)	talaka (peasant/commoner)	
3	informant	Dan Musa village (after 3 years as itinerant laborer)	1953-80	famine	not stated	no	jan talaka (extremely poor)	married in Dan Musa, built compound, was loaned farms, had children, worked as a water seller; divorced wife 1980, returned Amarawa with one son, reclaimed one farm from brother
4	informant	Kano, Kaduna, Bomo as itinerant laborer	1953-63	famine	desire to marry	no	talaka (peasant/commoner)	sold all farms upon return Amarawa to pay marriage expenses; fishes and trades in fish
5	informant, informant's wife	Sokoto city	1953-57	famine	not stated	c. 1941-53 (Mecca, Bomo); Muna Sane (1972-74)	talaka (peasant/commoner)	

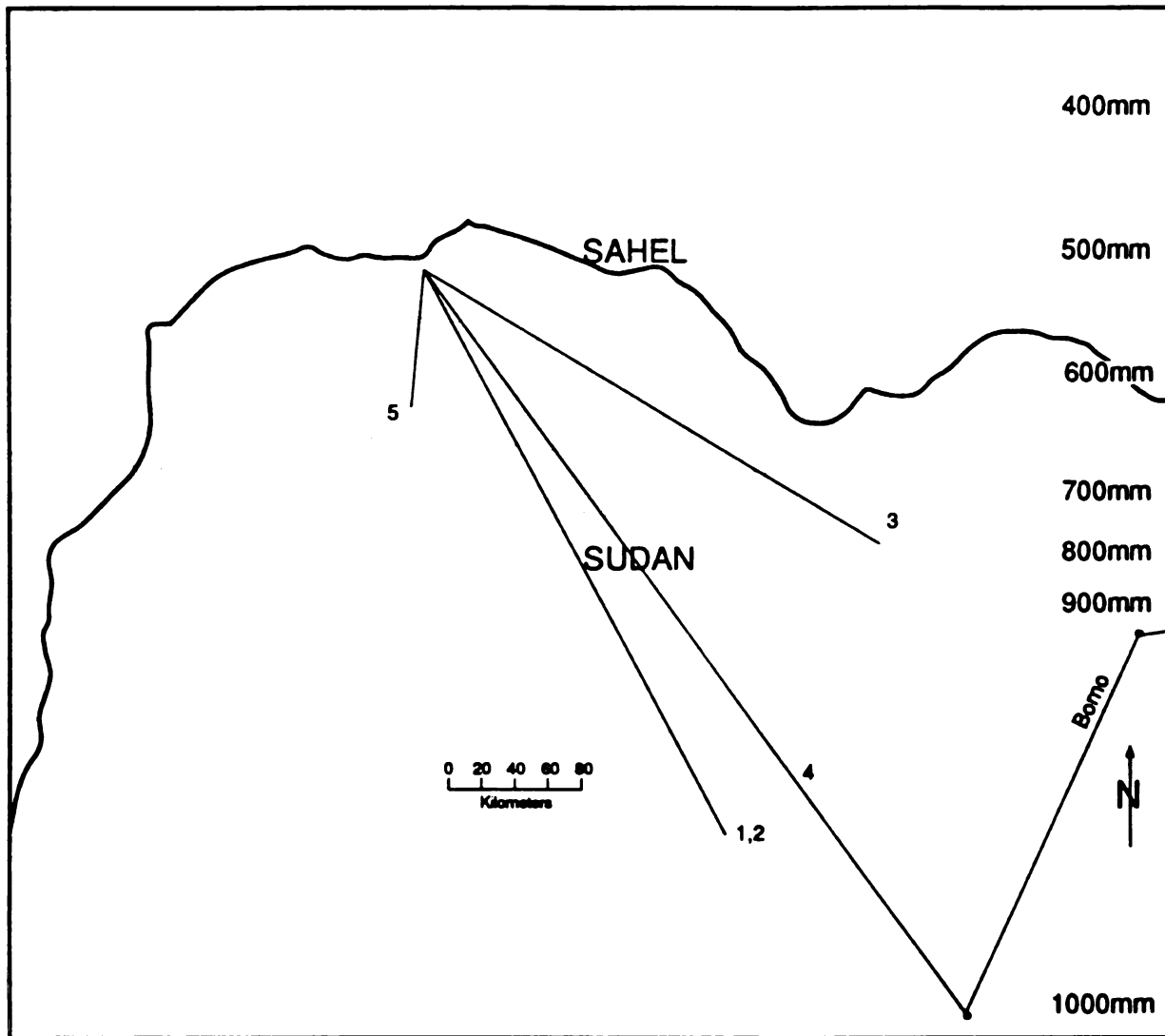


Figure 6.5: Out-Migration from Amarawa Village and Subsequent Return, Muda (1953-54)

In late 1953 or early 1954 Al Haji M W returned to Amarawa from a nearly ten-year pilgrimage (Appendix 11). He had married a woman from Wurno while in Mecca. This couple's return was punctuated by sojourns in Khartoum and in Yelwa, Borno State, where they rented a rice farm and cultivated during the 1953 rainy season. Because of the famine, Al Haji and his wife stayed only briefly in Amarawa before trekking to Sokoto, where they were to live for three years. The couple subsisted principally from Al Haji's earnings as a tea seller. Upon his return, he reclaimed one upland and one fadama farm.

Two informants who were young men at the time of Muda struck out on their own. One spent his entire ten year absence as an itinerant laborer. Shortly after his return to Amarawa he sold all of this farms to meet marriage expenses, an act that he now judges to have been foolish and unnecessary. Although he is still landless, he ranks as a member of the "peasant" class because of his success as a fisherman and low-level fish trader. The other informant, after three years of itinerant labor, found a home and a wife in Dan Musa village, Katsina. Here he was loaned farmland and worked as a water seller. He returned to Amarawa, together with one son, after his divorce in c. 1980. His brother had sold one of his farms during Mai Zobe (1965-67), but he was able to reclaim his only other farm, which he works in addition to a small parcel loaned to him

by the woman he remarried. He is considered a jan talaka (extremely poor).

A phenomenon that may be termed "multilocality" began for one "peasant" informant during Muda. After repeated trips for wage labor, he eventually found reasonably steady work in crafts production in Birnin Konni, where he later married a second wife. He spent most of the next 30 years living with her, cultivating her farms, and continuing his traditional manufacturing. Nevertheless he maintained in Amarawa his first family and his farmland. He stated that his decision in 1985 to spend more time in his natal village was motivated by his Amarawa sons' poor agronomic performance.

Mai Zobe (1965-67)

People again had to travel long distances to buy and bring back food. No destinations in Niger were cited; rather, informants related that Nigeriens headed for Zamfara, Dandume, Kaduna, and Gusau, the same food-surplus regions relied upon by the people of the study area. During the rainy season household heads sought wage labor at these destinations, as well as comparatively rare opportunities for work within the Illela locality. Women, in exchange for a measure of grain, pounded millet in the compounds of wealthier families in nearby villages. Groups of children traveled with their Koranic school teachers to Gusau and settlements in its vicinity, where they stayed for several

weeks. No true famine foods were reportedly consumed during Mai Zobe (Table 6.7).

Not even one instance of immigration to the three study settlements was recounted. No migrations, apart from temporary or seasonal migrations, were reported from the Gidan Alkasim hamlets. In Amarawa, in contrast, 17 instances of permanent out-migration were attributed to the famine Mai Zobe (Figure 6.6). At least nine of these were the emigration of entire families.

Only three informants emigrated during 1965-67 and subsequently returned (Figure 6.7). Z abandoned his wife after the 1965 harvest, migrated to Abingulu village (Adar, Niger), reclaimed his mother's farms, and married. Two years later his sister, by way of her contacts in the salt trade, learned of his marriage and his whereabouts, traveled to Abingulu, and forced him to return. G's migration alone to Allela village (Niger) was a case of short-distance migration made possible by family ties. He attested that he farmed for 11 years with his relatives in this village, but periodically brought food to his wife and children in Amarawa. He did not state his reason for returning, but perhaps it was because his socioeconomic status in Allela was even more marginal than in Amarawa, where he lives in a sorghum stalk hut and cultivates only one upland farm, which is on loan to him from his sister. S and his family migrated to Kurfaya village (near Birnin Konni) after the 1965 harvest. His uncle loaned him farms, and he remained

Table 6.7: Alternative Foods Reported Consumed During Mai Zobe, 1965-1967
Total Informants N=11

<u>Hausa</u>	<u>English</u>	<u>Latin</u>	<u>Part Eaten</u>	<u>Informants Reporting (N)</u>	<u>Remarks</u>
<u>tafasa</u>		<u>Cassia tora</u>	leaves	1	
<u>lalau</u>		<u>Corchorus tridens</u>	leaves	2	
<u>doruwa</u>	locust bean tree	<u>Parkia filicoidea</u>	seeds, pods	4	
<u>intaya or acca</u>	"hungry rice"	<u>Digitaria exilis</u>	grains	1	
<u>aduwa</u>	desert date tree	<u>Balanites aegyptiaca</u>	leaves	2	Dalziel (1916) did not indicate that the leaves of the desert date are edible
<u>tsaida</u>	caltrop	<u>Tribulus terrestris</u>	fruit (?)	2	
<u>ganyen wake</u>	cowpea leaves			2	Cowpea leaves are consumed regularly in other West African regions, but not in Hausaland
<u>garin rogo</u>	cassava flour			2	
<u>dusa</u>	grain bran			5	

KEY TO FIGURE 6.6

<u>Map ID #</u>	<u>Migrant(s)</u>	<u>Reported Domestic Situation at Time of Departure</u>	<u>Destination</u>	<u>Reported Outcome</u>
1	family head	divorced wife in Amarawa	Gashua town (western Borno)	got a rice farm
2	family head		Nlamey city	returned Amarawa to collect family
3	family		Dan Maru village (near Dandume)	ND
4	family		Dandume area	ND
5	man	ND	Gusau area	ND
6	man	ND	Ibadan city	married, had family
7	man	single	Zaria city	ND
8	man	ND	Dan Kurmi village	ND
9	man	ND	Abuja area	married, had family
10	family		Kaduna city	family head steady employment as construction worker
11, 12, 13	families		Tunga Gero village	got farms
14	family		Talata Mafara area	ND
15	man	ND	Talata Mafara area	ND
16	man	ND	Talata Mafara area	ND
17	family		Sabon Birni town	ND

ND = no data

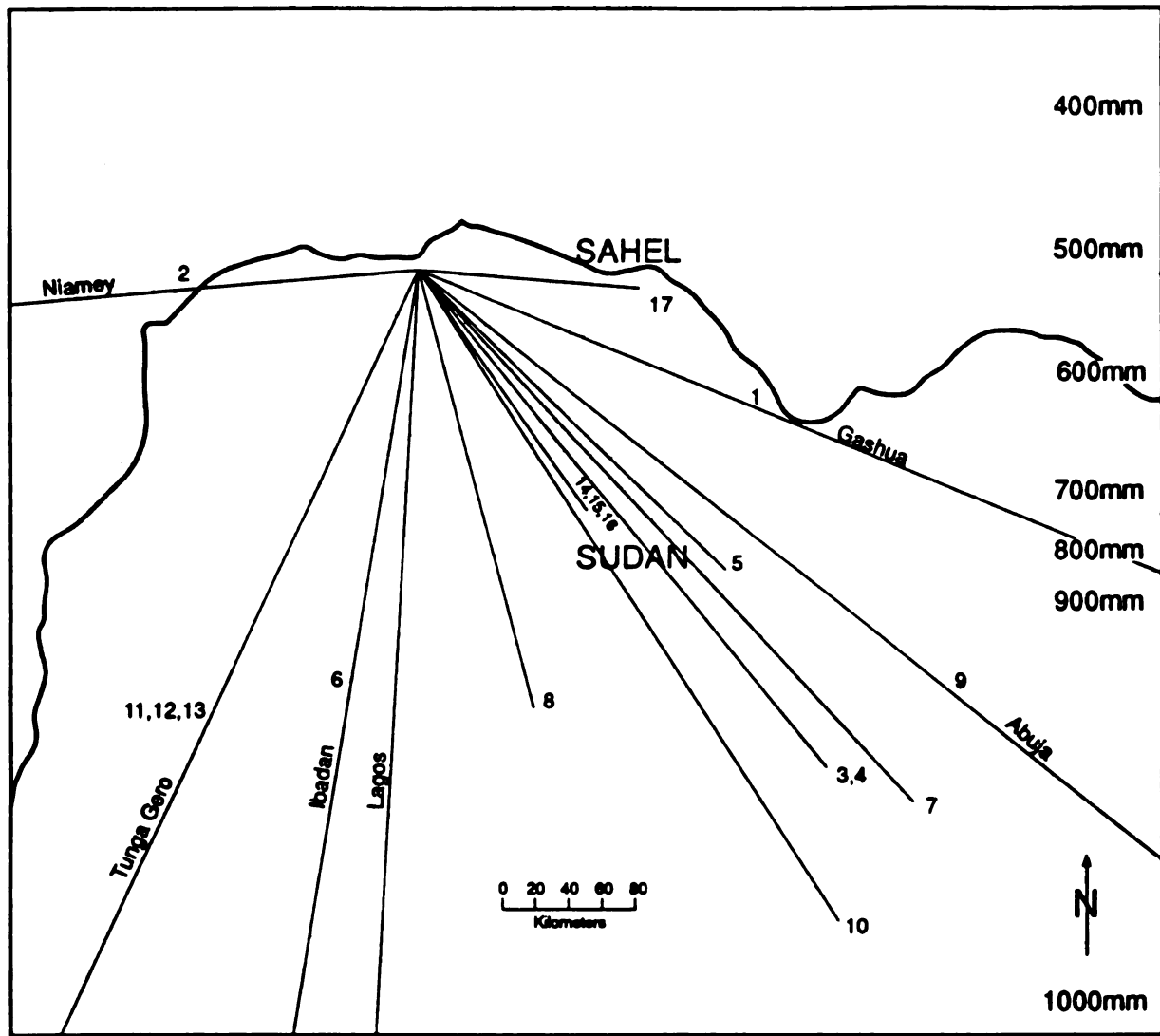


Figure 6.6: Reported Permanent Out-Migration from Amarawa Village during Mai Zobe (1965-67)

KEY TO FIGURE 6.7

<u>Map ID #</u>	<u>Migrants</u>	<u>Destination</u>	<u>Years of Absence</u>	<u>Reason Stated for Migration</u>	<u>Reason Stated for Return</u>	<u>Other Long-Term Migration(s)</u>	<u>Present Socioeconomic Class</u>	<u>Other Information</u>
1	informant	Abingulu village	1965-67	famine	sister forced return	c. 1960-64 (Kano); Buhariyya (1984-85)	talaka (peasant/commoner)	abandoned wife Amarawa; reclaimed mother's farms and received food aid, Abingulu
2	informant, informant's wife, children	Kurfiya village	1965-84	famine	famine	no	talaka (peasant/commoner)	
3	informant	Alela village	1965-80	famine	not stated	no	jan talaka (extremely poor)	left wife, children, Amarawa; farmed with mother's relatives, Alela; brought food occasionally to family, Amarawa
4	informant, informant's wife, children	Darange village	1972-74	famine	soil losing fertility; no sons to clear bushlands for new farms; desire to live among Muslims	c. 1941-53 (Mecca, Borno); Muda (1953-54)	talaka (peasant/commoner)	

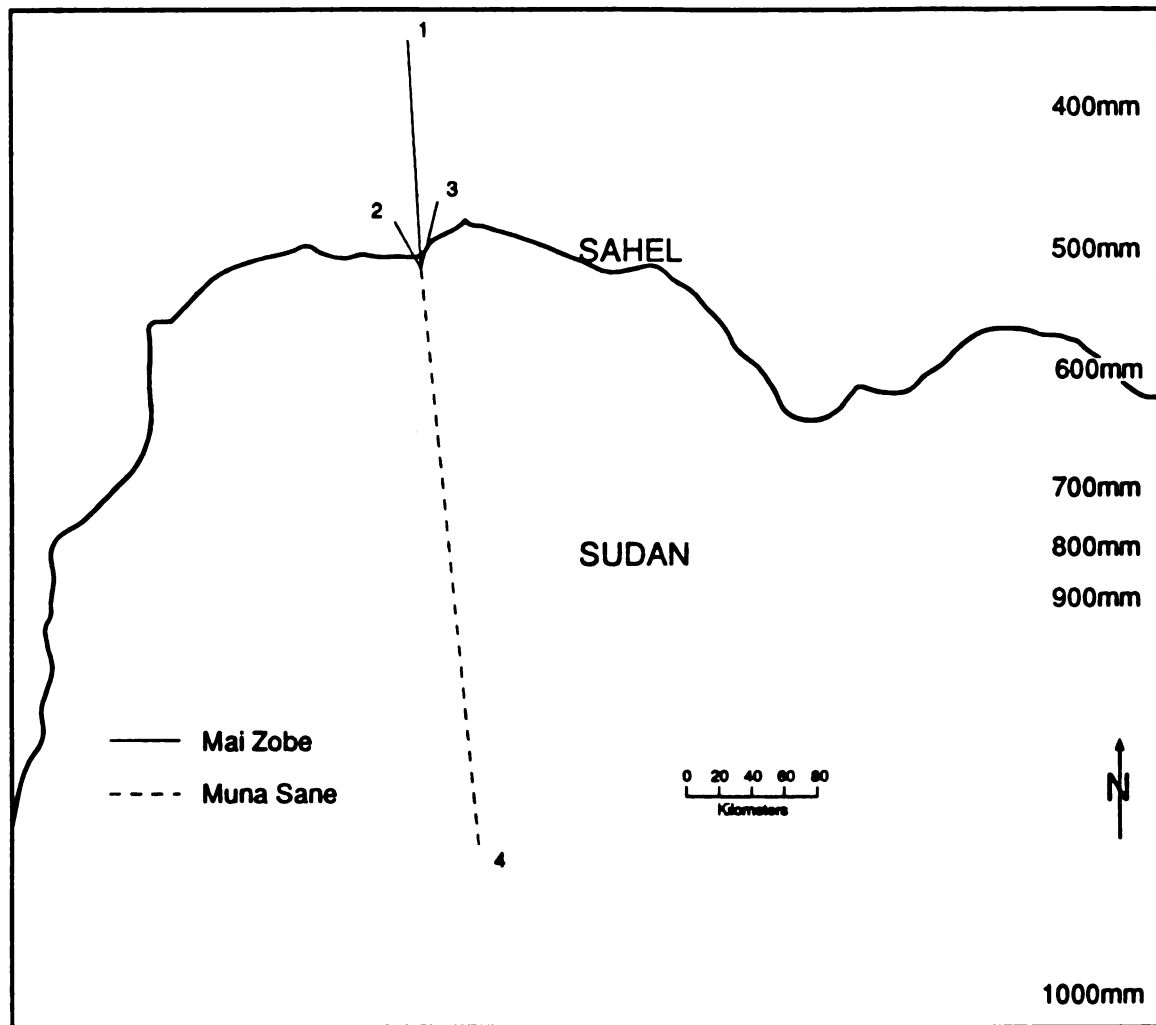


Figure 6.7: Out-Migration from Amarawa Village and Subsequent Return, Mai Zobe (1965-67) and Muna Sane (1972-74)

in Kurfaya until 1984, when he returned to Amarawa with his wife and some dependents. S's migration experience is the only example of famine-impelled out-migration and return migration impelled by a subsequent famine. S did not acknowledge selling farmland before his departure, but the three farms that he cultivated during the 1988 rainy season (two upland and one fadama) were all loaned to him by a relatively wealthy household head. Although his compound is a gidan kara (clay brick rooms enclosed by sorghum stalks) on the periphery of Amarawa, S is considered a talaka. He is a dan tauri in good standing, has a regular job as a security guard in Illela, and frequently does agricultural wage labor on the Kalmalo scheme during the dry season. He secured rights to one acre on the scheme for the 1989 rainy season.

Seven families emigrated permanently from Tudun Gudali Mai Ruwa during Mai Zobe (Figure 6.8). The five families that had immigrated from Cilgo, Niger during Muda set out together with one other family for Godel Jeddawa village, where they reportedly secured farmland. Godel Jeddawa was the destination of a family that emigrated during the famine-free period 1955-1965 (Appendix 11, Figure A11.5). Another family migrated to Bakura in February 1966.

Muna Sane/Shekara Karmami (1972-74)

Of the informants who described 1972-74 as a famine, virtually all agreed that Mai Zobe was much more severe. Harvest failures were only partial, the government of

KEY TO FIGURE 6.8

Map ID #	Migrants	Time	Destination(s)	Reported Outcome/Other Information
1	family	1965-67	Godel Jeddawa village	got farms; migrated together with five families that had arrived TGMIR from Cilio, Niger, during Muda (1953-54)
2	family	1965-67	Bakura village	got farms
3	family head	1972-74	Silame town	abandoned family TGMIR; got farms Silame
4	man	1972-74	Kaduna city	became successful trader
5	man	1972-74	Makwala initially; later continued to unknown destination	ND
6	family	1983-85	Yar Kofoji village	got farms; earn income by camel portage
7	family head	1983-85	Gidan Ider town	abandoned family TGMIR; rents farms, trades in cola nuts and tobacco

ND = no data

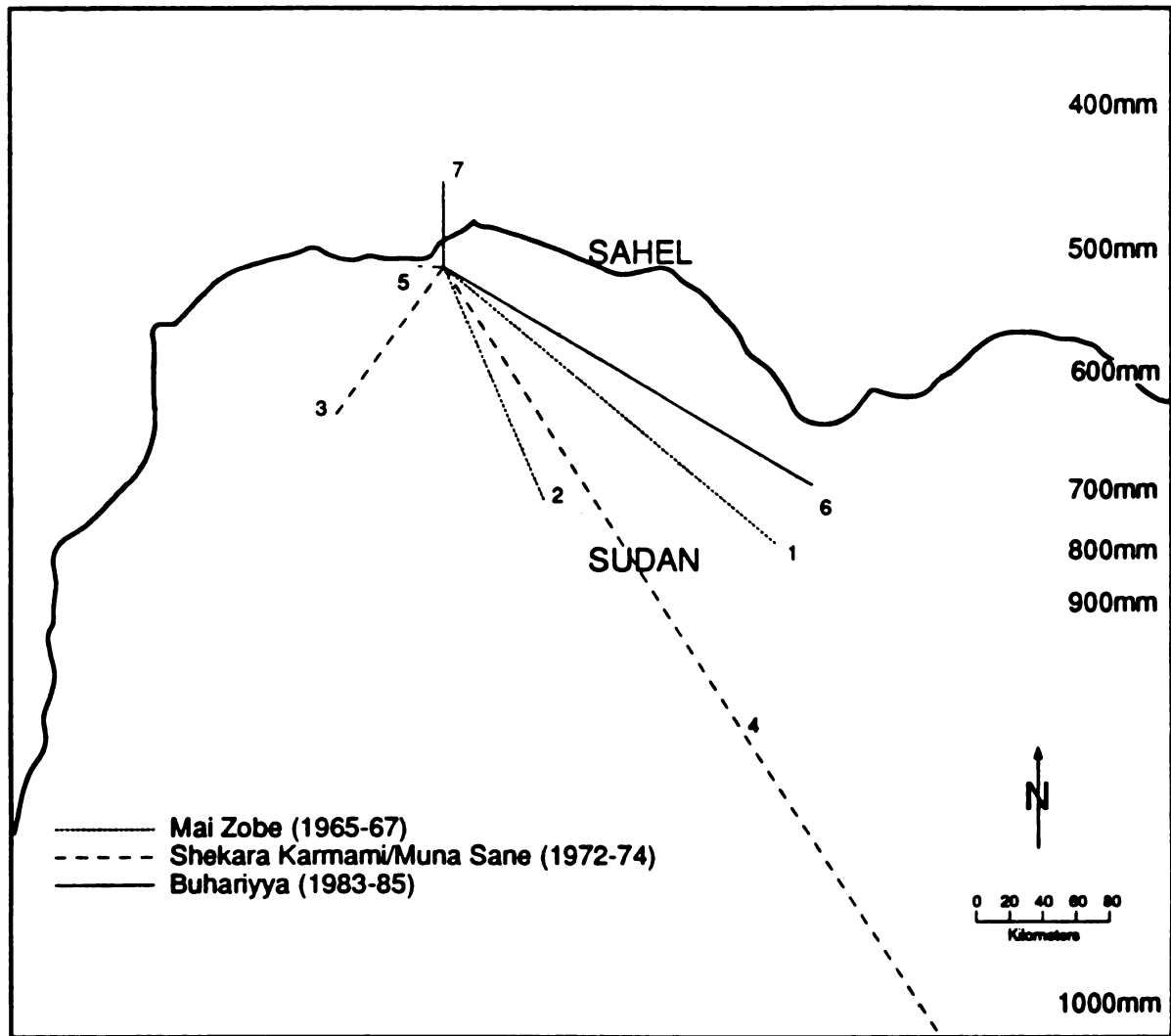


Figure 6.8: Reported Pemanent Out-Migration from Tudun Gudali Mai Ruwa (TGMR) during Famines

Nigeria distributed food aid, and people were reportedly successful in procuring food from afar. The only alternative foods cited were grain bran, cassava flour, and doruwa. Some groups of Buzu and Fulani herders encamped in the study area succeeded in keeping their animals alive, while others suffered staggering livestock losses. Other apparently destitute Nigerien refugees passed through study area settlements begging for food.

Of the three study settlements, only Amarawa experienced immigration during Muna Sane (Figure 6.9). One immigrant was a man who left his home village of Jakire (near Katsina) alone in 1966 and spent the following six years as an itinerant laborer. In 1972, while a member of the crew constructing the road from Gwadabawa to Illela, he developed patronage ties to a "middle class" household head and consequently decided to settle in Amarawa. He is considered a jan talaka (extremely poor), but has a small compound made entirely of clay bricks, a family, and very small farms received as gifts. Y arrived alone in early 1974 from Gigane, his natal village, professedly to pursue Koranic studies. Several weeks later his wife and children joined him in Amarawa. He is a member of the talaka class, owning three small farms received as gifts and an average sized, somewhat isolated clay brick compound. He rents a fourth farm in Amarawa; the one farm he inherited in Gigane is worked by his brother.

KEY TO FIGURE 6.9

Map ID #	Migrants	Migrated From	Time	Reason Stated for Migration	Other Long-Term Migration	Present Socioeconomic Status
1	informant	Jakire village	1972-74	working on road construction, developed patronage ties	left Jakire 1966, six years as itinerant laborer	jan talaka (extremely poor)
2	informant, informant's wife, children	Gigane village	1972-74	Koranic studies	no	talaka (peasant/commoner)
3	informant	Gidan Nashiyau village	1983-85	Koranic studies	no	talaka (peasant/commoner)

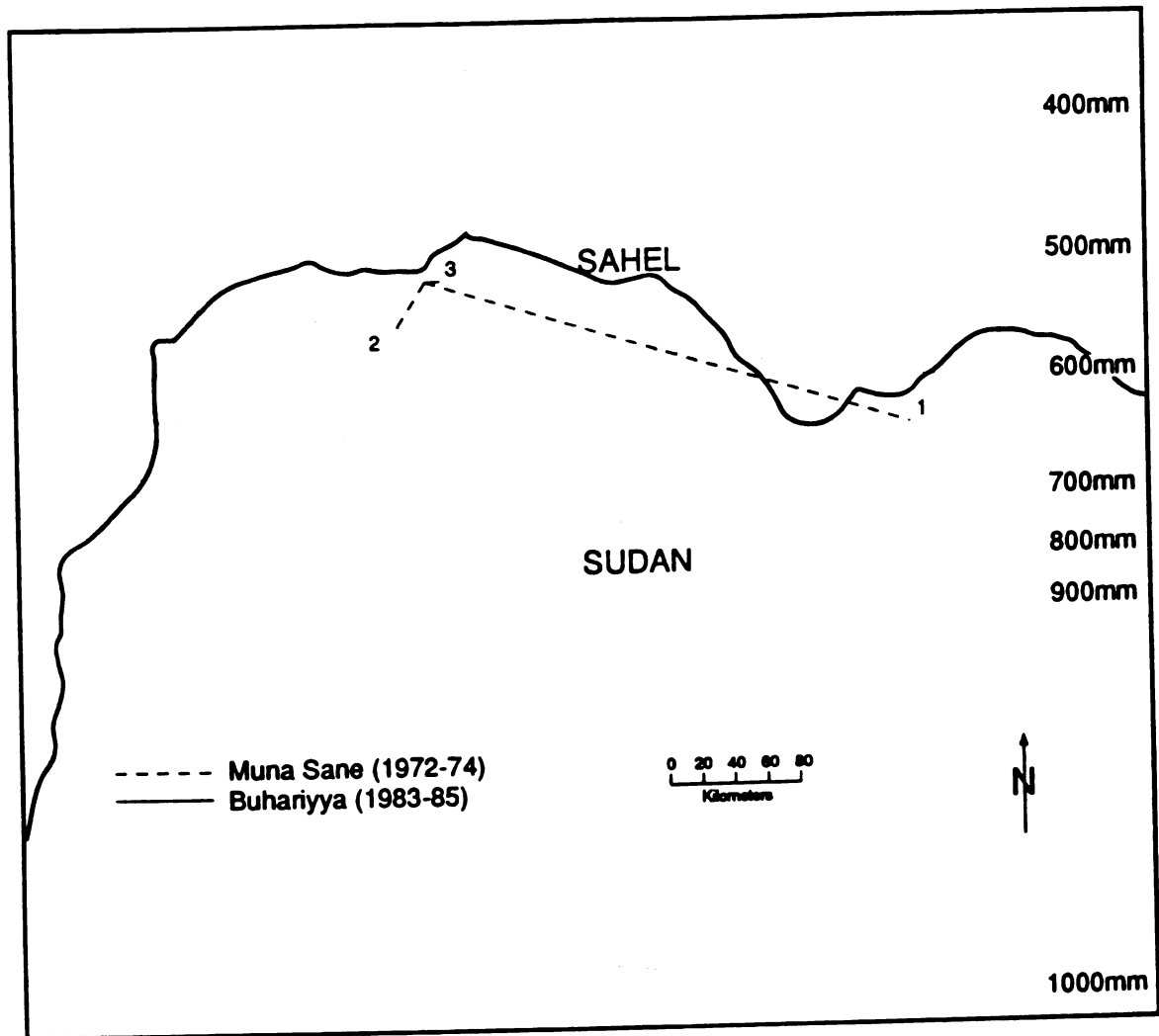


Figure 6.9: Famine-Related Immigration to Amarawa, 1972-85

Emigration occurred from all three study settlements during 1972-74. Five incidents of permanent out-migration from Amarawa were recorded (Figure 6.10). Two of these involved entire families; two men abandoned or divorced their wives before migrating. The destinations of these migrants were villages and towns in the Middle Belt. Kwasa-Kwasa (near Dandume), the destination of one man of unrecollected civil status, is known widely in rural Sokoto State as a large village established in the early 1970s by famine refugees from Niger and northwestern Nigeria.

Three instances of permanent out-migration from Tudun Gudali Mai Ruwa reportedly took place (Figure 6.8). One man abandoned his family; the domestic situation of the other two men was not recalled. One of these migrants, however, sold all of his Tudun Gudali Mai Ruwa farms and migrated to the neighboring village of Makwala, where he spent an unspecified period of time before migrating again.

One family emigrated permanently from Zangon Tsakuwa, the northwestern Gidan Alkasim hamlet (Figure 6.3). The circumstances of this migration were explained in some detail by Mallam G, the "village area" head. J's father was from Tozai and his mother from Zangon Tsakuwa. After their divorce, his mother returned alone to Zangon Tsakuwa. When J's father died, he sold the farms that he had inherited in Tozai to meet marriage expenses and moved with his new bride to Zangon Tsakuwa, where for several years he cultivated his mother's farm and farms that belonged to her brother, who

KEY TO FIGURE 6.10

Map ID #	Migrant(s)	Reported Domestic Situation at Time of Departure	Destination	Reported Outcome
1	family		Lafiya Beriberi town	got farms, involved in long-distance fish trade
2	family		Babban Rami town	got farms
3	man	ND	Kwasa-Kwasa village	ND
4	family head	abandoned wife, children in Amarawa	Wukari town	ND
5	family head	divorced wife in Amarawa	village near Dandume	got farms

ND = no data

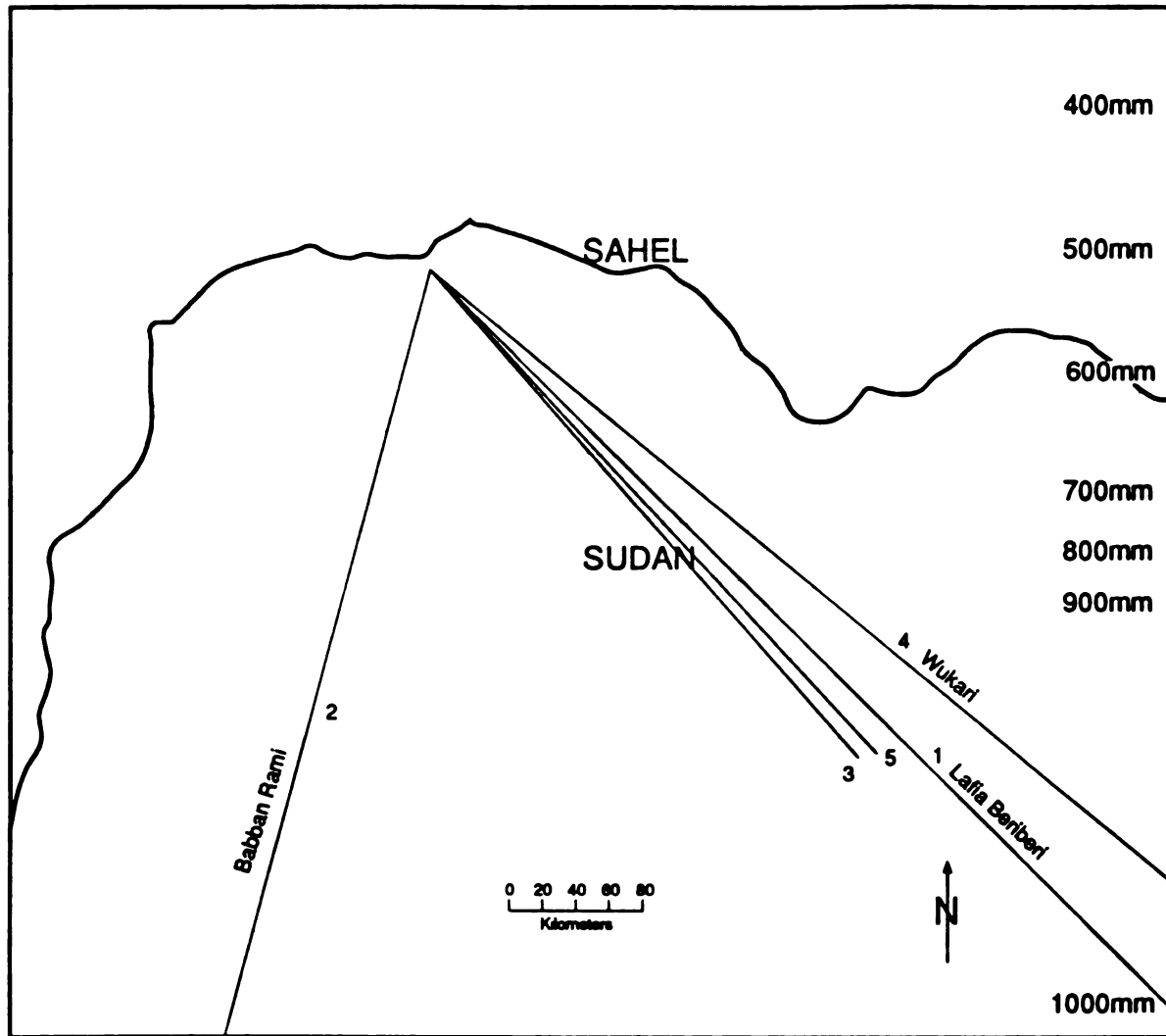


Figure 6.10: Reported Permanent Out-Migration from Amarawa Village during Muna Sane, 1972-74

was then residing in Takar, Niger. In 1973 this man returned to Zangon Tsakuwa to sell his farm, and prevailed upon J's mother to sell her farm as well. J, his wife, children, and mother then migrated together to Takar. Their abandoned compound is today conspicuous.

No one emigrated from the Gidan Alkasim hamlets during Shekara Karmami/Muna Sane and later returned. Three informants left Tudun Gudali Mai Ruwa alone in 1973 or 1974 and subsequently came back (Figure 6.11). One did not attribute his migration to drought-induced hardship. Of the two who did, one stated that the purpose of his migration was to feed his family. Hardship induced the other to begin his second long-term migration.

Al Haji M. W., whose pilgrimage on foot to Mecca has earned him great respect, is the only returned migrant from Muna Sane encountered in Amarawa. He and his family had gone several days without food before he decided to migrate after the 1972 harvest (Figure 6.7). Al Haji reported two years of agronomic success on the land he had cleared at Derenge village, his eventual destination. During the third year the soil began losing its fertility. Al Haji had no sons to help him make new farms from uncultivated bushland, and he desired to return to Amarawa where he could live with "good" Muslims and where he had one upland and one fadama farm.

KEY TO FIGURE 6.11

<u>Map ID #</u>	<u>Migrants</u>	<u>Destination(s)</u>	<u>Years of Absence</u>	<u>Reason Stated for Migration</u>	<u>Reason Stated for Return</u>	<u>Other Long-Term Migration(s)</u>	<u>Group</u>	<u>Other Information</u>
1	informant	Gusau city, Chafe town	1973-80	to earn money	to marry	no	Buzu	
2	informant	Kwatarkwashi town, Bungudu town	1973-84	hardship	patronage ties	born TGMIR, migrated to Salewa village (near Gidan Ider, Niger) 1950s; returned TGMIR early 1960s	"other Hausa"	married, was loaned farms Kwatarkwashi; divorced wife c. 1981, migrated to Bungudu where married; was loaned farms; divorced wife 1984, returned TGMIR
3	informant	Onitsha city, Benin city	1973-74	to feed family	family, farms	no	"other Hausa"	
4	informant, informant's wife, children	Kaduna city, Minna city	1983-88	poor harvest, poor local labor market	not stated	Birnin Yauri, early 1960s	"other Hausa"	worked as a boat pilot, Birnin Yauri; as a laborer, Kaduna, Minna
5	informant	Ibadan	1984-85	food shortage	family, farms	no	"other Hausa"	worked as a laborer
6	informant, informant's wife, other relatives	Manga village	1985-85	poor 1983 harvest, sensed 1984 would be drought year	to help parents	no	"other Hausa"	was loaned farms; returned TGMIR with four sacks of grain

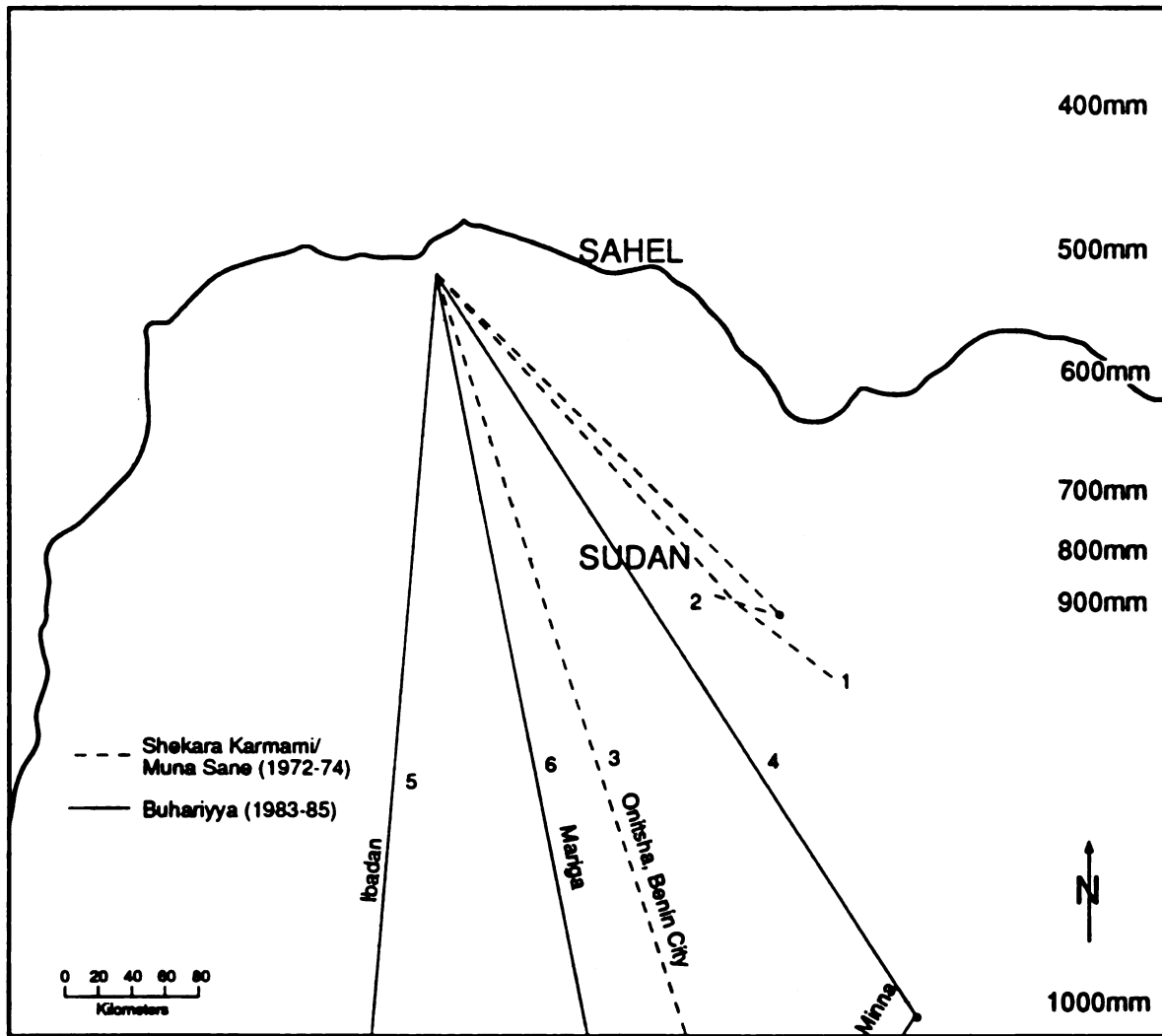


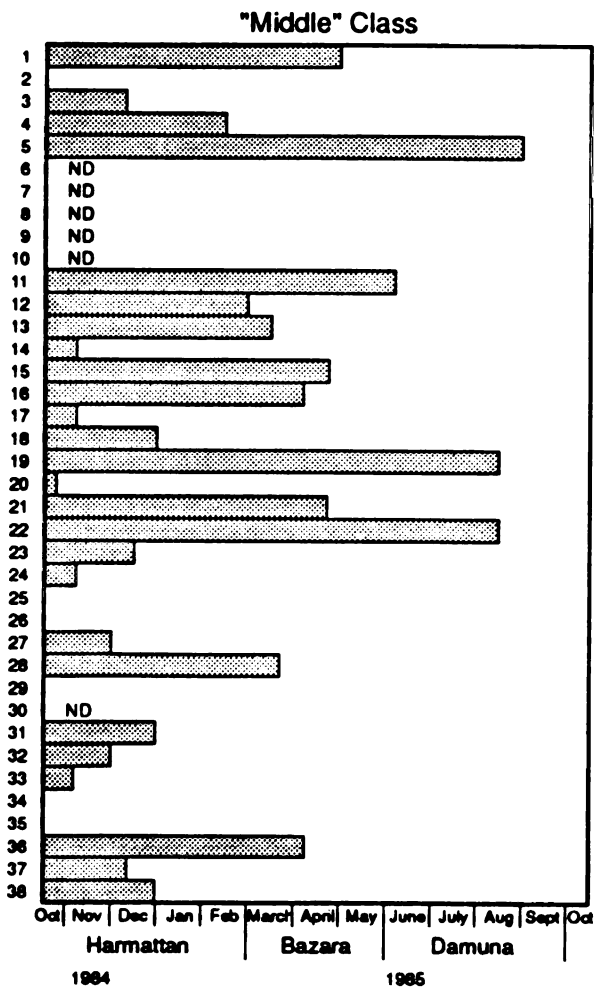
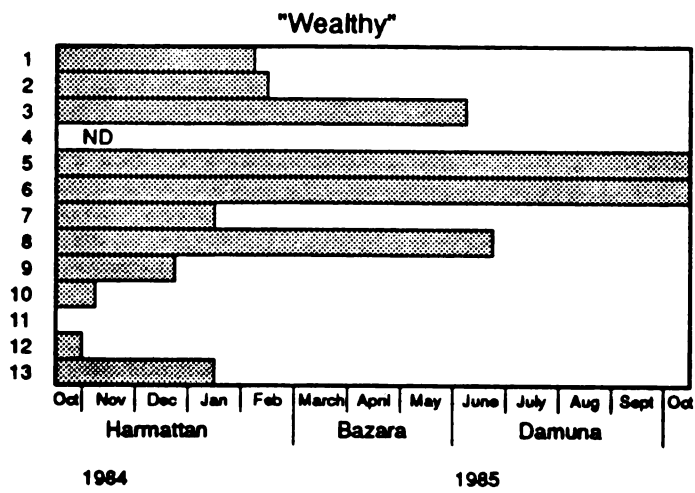
Figure 6.11: Out-Migration from Tudun Gudali Mai Ruwa (TGMR) during Famines and Subsequent Return

Two Amarawa informants related that they took their families with them on dry season migration during 1973-74. One family went to Zaria, the other to Niamey.

The 1983-85 Famine Buhariyya

Overall neither the 1983 nor the 1984 harvest was a total failure in the three study settlements. Only five Tudun Gudali Mai Ruwa informants, and 14 from Amarawa, reported that they did not reap even one bundle of grain in 1984. Six farmers reported that their 1984 yields were sufficient to provision their families until the next year's harvest. But as Figures 6.12-6.14 show, levels of self-sufficiency in staple foods in 1984-85 were drastically lower than 1988-89 levels, and considerably lower than in either 1987-88 or 1989-90 (cf. Appendix 4). Opportunities for compensating through marketing activities were curtailed by the closure of the international border. People lost a great deal, and some avowedly lost all, of their cash savings during the currency change operation in April 1984. Fishing, and in many cases dry season agriculture, became impossible due to the desiccation of Lake Kalmalo. Moreover, the 1983 harvest had been nearly as poor, and for a minority of farmers worse than the harvest of 1984.

Buhariyya is remembered everywhere in the study area as yunwa, a hunger or famine. It was a famine, however, only in the African sense: assets were liquidated and livelihoods threatened, but no one related that deaths



ND = no data
numbers designate household heads

Figure 6.12: Self-Sufficiency in Grains, Amarawa, 1984-85

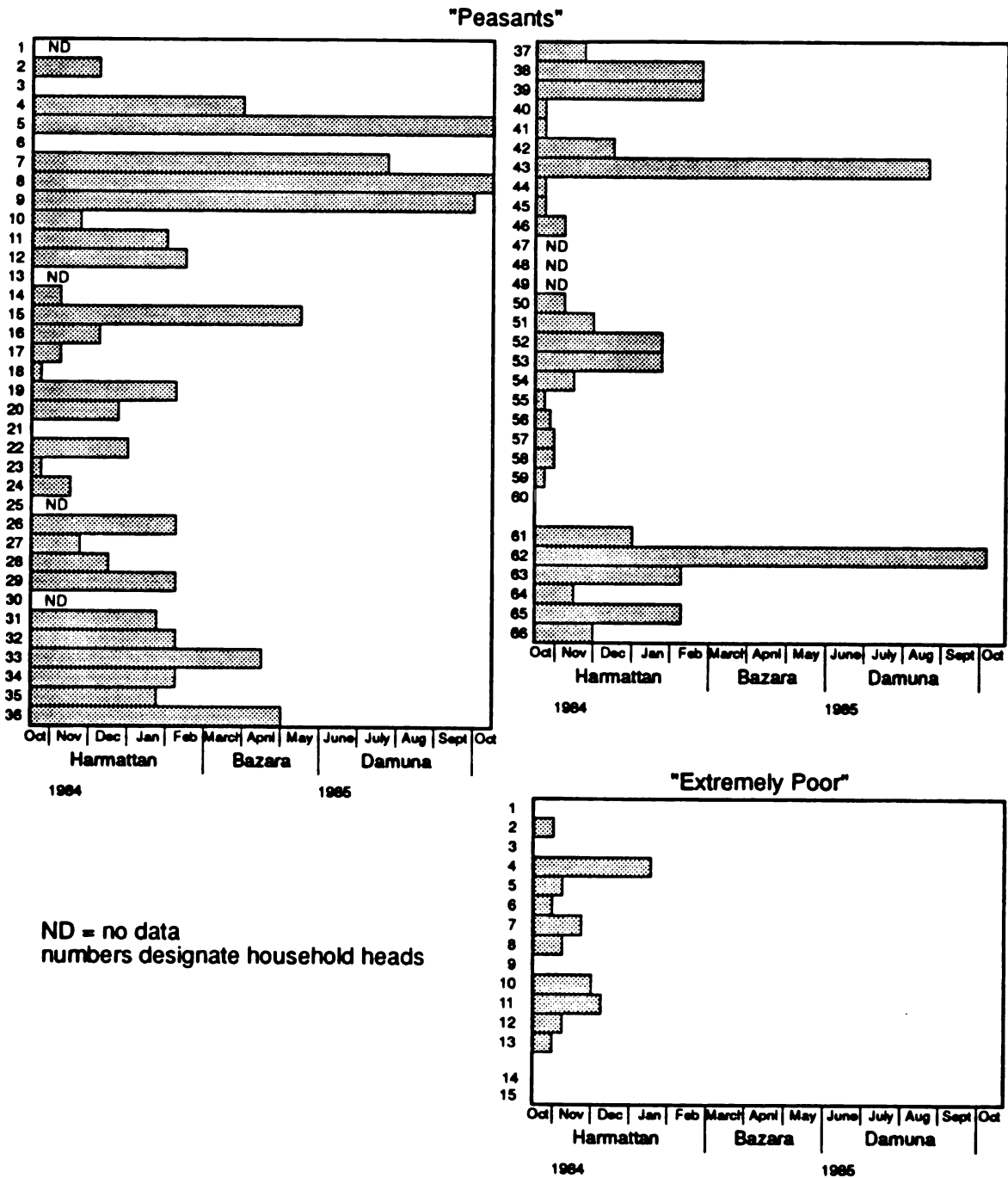


Figure 6.13: Self-Sufficiency in Grains, Amarawa, 1984-85

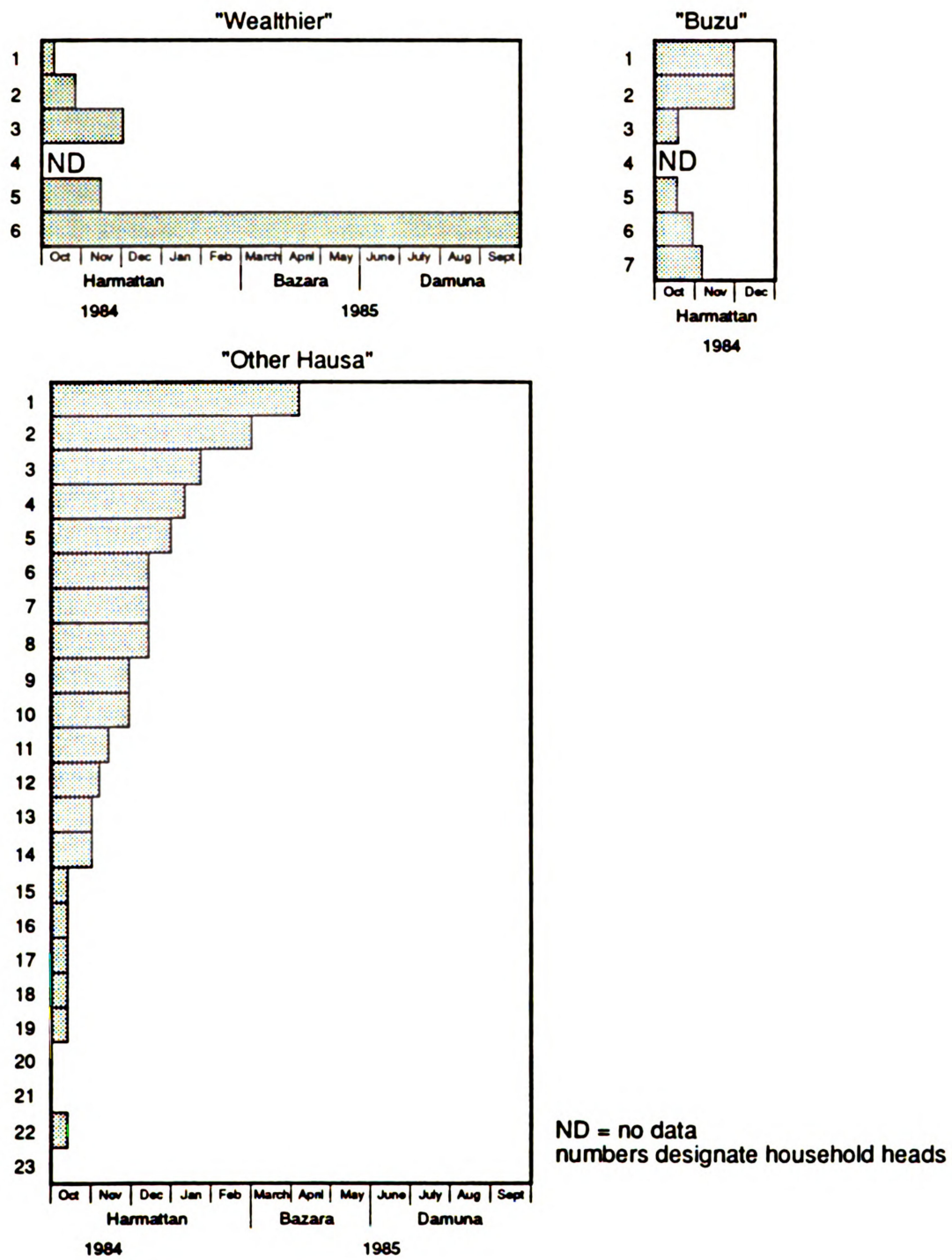


Figure 6.14: Self-Sufficiency in Grains, Tudun Gudali Mai Ruwa, 1984-85

occurred either from a lack of food or from "swelling" (kumbura).

Grain was exceedingly expensive. By early 1985, after the second consecutive poor harvest, the price of millet reached ~~N~~6 per kwano (2.5 kilograms) in Illela. This was more than double the 1983 post-harvest price. Men involved in the long-distance grains trade, as well as individual household heads seeking to buy and bring back grain for their families, had to travel as far as Jos and Kaduna. In Gusau and Zamfara, the more traditional grain surplus regions, supplies were scanty and spatially and temporally uneven, and prices too high.

People said that they "farmed on" cassava flour, or garin rogo, during both the 1984 and 1985 agricultural seasons. A kwano of garin rogo cost between ~~N~~2 and ~~N~~3; a quantity measured by a six ounce milk tin sold for 30 kobo (cents), or two for 50 kobo. This was mixed with cool water and drunk to give energy for farming. Despite the general Hausa disdain for cassava flour, its availability may have arrested the progression to less palatable alternative foods. Nonetheless some people resorted to eating commercially prepared animal feed (Table 6.8).

The pervasiveness of food purchases (au) is indicated in Tables 6.9-6.11. These data do little to elucidate the differences between Buhariyya and non-famine years in this chronically food-deficit area. Were they obtainable, data

Table 6.8: Alternative Foods Reported Consumed During Buhariyya, 1983-1985
Total Informants N=15

<u>Hausa</u>	<u>English</u>	<u>Latin</u>	<u>Part Eaten</u>	<u>Informants Reporting (N)</u>	<u>Remarks</u>
<u>kabushi</u>	squash	<u>Cucurbita Pepo</u>	flesh	5	
<u>latau</u>		<u>Corchorus tridens</u>	leaves	4	
<u>sabe</u>		<u>Panicum albidulum</u>	grains	1	
<u>duma</u>	bottle gourd	<u>Lagenaria vulgaris</u>	seeds	2	Cultivated as a crop; used primarily as containers
<u>garin rogo</u>	cassava flour			15	
<u>ganyen wake</u>	cowpea leaves			7	
<u>dusa</u>	grain bran			6	
<u>abincin kaji</u>	chicken feed			3	In the form of pellets
<u>abincin bisashe</u>	livestock feed			2	Processed grain bran

on the actual quantities purchased would probably show that reliance on au was several times greater than in 1988-89.

Most of the attajirai and masakaita who reported selling food during Buhariyya either were involved directly in long-distance trade (fatauci) or were middle men in Illela. Two household heads in Tudun Gudali Mai Ruwa and one in Katanga also practiced fatauci in foodstuffs. Seven Amarawa "peasants" and one jan talaka sold small measures of garin rogo or grain for meager profits.

In light of the putative erosion of the "moral economy" in the rural Sahel, it is surprising that receipt of help (taimako) was rather widely acknowledged. Several household heads related that they did not purchase food because their patron ("mai gida") provided them with a fairly regular supply. This assistance may be one aspect of the "levelling effect" discussed by Hill (1972) and others. That help is sought and received from outside a particular settlement indicates that this phenomenon has a spatial dimension, and suggests one means by which famine conditions expand on a local scale.

Most informants stated that they did not borrow grain or money during the famine. However, approximately one-third of these household heads added that they attempted but failed to secure loans. No informants in the Gidan Alkasim hamlets acknowledged taking loans. Group interview participants explained that potential creditors visited the hamlets and decided that loans here would be a poor risk.

**Table 6.9: Response to Food Shortage by Socioeconomic Class
Amarawa Village, 1984-1985**

	Attajirai/ Masu Dan Hali (Wealthy) N=14	Masakaita ("Middle Class") N=38	Talakawa (Peasants) N=79	Jan Talakawa (Extremely Poor) N=15
Buy grain/Cassava flour	5	29	62	12
Sell grain/Cassava flour	9	9	7	1
Help from relatives/friends in Amarawa - Money - Food	2 1 ⁽¹⁾	8 11 ⁽²⁾	24 31 ⁽³⁾	1 8
Help from relatives/friends outside Amarawa - Money - Food		4 5	4 7	2 1
Borrow money/grain	2	7	23	2
Hire labor	9	28	27	1
Sell labor Household Head - In Amarawa - Outside Amarawa Son(s)/Younger brothers - In Amarawa - Outside Amarawa	7 6	5 17 1 13	39 29 9 25	12 10 3 4
Buy livestock	1	8 ⁽⁴⁾	11 ⁽⁵⁾	
Sell/slaughter livestock	6	25	57	5
Special plantings (lake bed)		2	4	
Buy farmland	5	15	7	
Sell farmland	2	4	12	3
Let farmland (Ba da sunfuri)	2	5	14	3
Loan farmland		2	1	
Rent farmland			2	
Borrow farmland			1	
Dry season migration w/family			1	
Out-Migration (Subsequent return)		1	3	
In-Migration			2	1

⁽¹⁾ informant is a Koranic school teacher who reported receiving zakkat

⁽²⁾ four informants are Koranic school teachers who reported receiving zakkat

⁽³⁾ four informants are Koranic school teachers who reported receiving zakkat

⁽⁴⁾ two informants were involved in livestock trading (dilancin bishashe)

⁽⁵⁾ two informants were involved in livestock trading (dilancin bishashe)

**Table 6.10: Response to Food Shortage
Tudun Gudali Mai Ruwa (TGMR), 1984-85**

	<u>Gidan Saurauta and Two Wealthiest Household Heads</u> N=7	<u>Talakawa (Hausa)</u> N=28	<u>Buzu</u> N=11
Buy grain/Cassava flour	5	24	9
Sell grain/Cassava flour	1 ⁽¹⁾	1 ⁽¹⁾	
Help from relatives/ friends in TGMR - Money - Food		3 7	1 1
Help from relatives/ friends outside TGMR - Money - Food	2	3 1	4 4
Borrow money/grain	3	5	1
Hire labor	3		
Sell labor Household Head - In TGMR - Outside TGMR Son(s)/Younger brothers - In TGMR - Outside TGMR	2 1	5 27 5	3 10
Buy livestock		5 ⁽²⁾	
Sell/Slaughter livestock	5	13	8
Special plantings (Rafi farms)	2	2	1
Buy farmland	1	3	
Sell farmland	1	2	2
Let farmland (Ba Da Sunfuri)	1	1	1
Loan farmland			
Rent farmland	1	2	
Borrow farmland			6
Dry season migration w/family			2
Out-Migration (Subsequent return)		2	
In-Migration			

⁽¹⁾ informant practiced long-distance trade (fatauci) in grains

⁽²⁾ one informant is a butcher; four informants practiced long-distance trade (fatauci) in livestock

**Table 6.11: Response to Food Shortage
Gidan Alkasim Hamlets (GA), 1984-85**

	"Peasants" N=13	Wealthier N=4
Buy grain/Cassava flour	10	2
Sell grain/Cassava flour		1
Help from relatives/Friends in GA		
- Money	2	
- Food	2	
Outside GA	5	
Borrow money/grain		
Hire Labor		2
Sell Labor		
Household Head		
- In GA	1	
- Outside GA	10	1
Sons/Younger Brothers		
- In GA		
- Outside GA	4	
Buy livestock	3	1
Sell/slaughter livestock	9	1
Special plantings (Rafi)	2	1
Buy farmland	3	2
Sell farmland		
Let farmland		
Loan farmland		
Rent farmland	1	
Borrow farmland		
Dry season migration w/family)	1	
Out-migration (subsequent return)	1	
In-migration		

Amarawa and Tudun Gudali Mai Ruwa informants apparently had better credit.

That 39 Amarawa talakawa and five masakaita household heads acknowledged selling their labor in their own settlement is an indication of the severity of the crisis. At least a labor market existed in Amarawa, however infrequent job opportunities may have been. Thirty-four percent of the talakawa reported hiring labor, and greater proportions of the upper two socioeconomic strata did so. The buying and selling of labor was comparatively rare in the other two study settlements. The going rate for wage labor during the 1985 farming season was ₦5, or less than the cost of a kwano of grain, but in many cases workers were fed at least one meal.

Selling labor outside the study settlements includes what has been described as commuting in addition to longer term labor migration. This practice was nearly universal among Tudun Gudali Mai Ruwa and Gidan Alkasim informants. In Amarawa rates of participation in some form of labor migration were considerably lower, although mobility was still important. The seven wealthy informants and several of the masakaita who worked outside Amarawa were not laboring for wages, but instead were practicing a skilled trade (tailoring, masonry, barbering) or engaged in marketing or fatauci. This also applies to the wealthier informants in the other two study settlements.

The sale or slaughter of compound livestock holdings was widespread in the study settlements, even among the wealthier socioeconomic groups. Some informants, notably three Buzu in Tudun Gudali Mai Ruwa and several of the Amarawa jan talakawa, had no livestock to sell during Buhariyya. A small minority of household heads not classified as wealthy or "middle class" were in a position to buy domestic animals.

In the 1984 post-harvest period livestock prices were still at reasonable levels. One informant sold a pregnant goat for ₦100 and another large female goat for ₦40. He was able to purchase with these sums 30 kwano of millet, which may constitute a 60 day's supply of food for one adult. Several months later a young bull was sold by another informant for ₦60. The lowest prices obtained during the early part of the 1985 rainy season: a cow in her prime sold for only ₦30, an older cow for ₦18, while goats fetched a mere ₦7-₦10. (In early 1990 a good cow could cost more than ₦1,000, and an "average" goat about ₦120.)

Land transactions were proportionately most frequent in Amarawa. All but seven of the 27 informants who bought farmland during Buhariyya were members of the upper two socioeconomic strata. Twelve talakawa and three jan talaka informants reported selling farms, but so did four members of the masakaita group and two attajirai. One of these wealthy men related that he had become so discouraged with the high cost of labor and the two consecutive poor harvests

that he sold all of his numerous farms in late 1984. His principal economic endeavor is now tobacco brokerage. Letting farmland (ba da sunfuri) was also relatively frequent in Amarawa. (According to Mortimore, 1989, sunfuri is often an euphemism for jangali, the pawning of farmland.) Sunfuri was reportedly not practiced in the Gidan Alkasim hamlets, and only three instances were recorded in Tudun Gudali Mai Ruwa. No Gidan Alkasim informants acknowledged selling farms during the famine, yet five reported buying a farm. Two of the sellers were women, and two had died in the interval between Buhariyya and 1989-90. Only four Tudun Gudali Mai Ruwa informants said that they purchased farmland, and five sold. One seller was a relatively wealthy household head; three buyers were members of the "other Hausa" group. The other types of land transactions (loaning, renting, borrowing) were rare in all three study settlements.

Migration During Buhariyya, 1983-85

Neither Tudun Gudali Mai Ruwa nor the Gidan Alkasim hamlets were destinations for refugees during the famine. Amarawa, on the other hand, received three families. Two of these household heads were Amarawa natives who had emigrated to villages in Niger many years before Buhariyya (Figure 6.7 #2, and Appendix 11, Figure A11.3, #4). The other informant migrated with his family from Gidan Nashiyau village (Figure 6.9). Although Koranic studies and teaching was the reported motive for his migration, he also stated that the

impacts of drought and famine had been more severe in Gidan Nashiyau. In Amarawa he received gifts of food and money, and in 1985 was able to reclaim and cultivate two farms that he had inherited from his father, who acquired them while engaged in Koranic scholarship during the 1950s. He owns and cultivates one farm in his village of origin.

Twelve incidents of permanent out-migration reportedly took place from Amarawa during Buhariyya, four after the harvest of 1983 and eight after the 1984 harvest (Figure 6.15). Six of the reported destinations can be considered rural areas. In the immediate term only two of these migrations involved entire families. Two household heads later sent for their dependents after finding employment at their destinations.

The three incidents of permanent out-migration from the Gidan Alkasim hamlets all entailed the family heads establishing themselves in or near an urban area in 1983, and then having their families join them at the destinations the following year (Figure 6.3). These migrations exemplify a process often noted in the 1970s literature on drought and famine: the prolongation of seasonal migration, and its expansion to include family members.

Two permanent out migrations from Tudun Gudali Mai Ruwa occurred. One involved an entire family after the 1983 harvest. The other, undertaken alone by a family head, is the only example from the three study settlements of

KEY TO FIGURE 6.15

<u>Map ID #</u>	<u>Migrant(s)</u>	<u>Reported Domestic Situation at Time of Departure</u>	<u>Destination</u>	<u>Reported Outcome</u>
1	family head	wife, children left in Amarawa	Dandume town	got farms
2	man	single	Dan Warin Daji village	initially worked as a laborer, later was loaned a farm
3	family head		Tambawel town	returned later to Amarawa to collect family, got job as security guard, married second wife Tambawel
4	family head		Jos	got job as a driver, returned Amarawa 1988 to collect family
5	family head	wife, children left in Amarawa with migrant's father	Albasu village	got farms by cutting bush; sends money to father to support family
6	man	ND	Benin city	ND
7	man	ND	Zaria city	ND
8	family		Dan Gulbi town	sold compound Amarawa
9	family		Talata Mafara area	family head working as a laborer, trying to get farm on irrigation scheme
10	family head	divorced wife Amarawa	Dandume area	left farms with younger brother, who sold them; got farms, remarried at destination
11	man	ND	Kaduna city	ND
12	man	ND	Ibadan city	ND

ND = no data

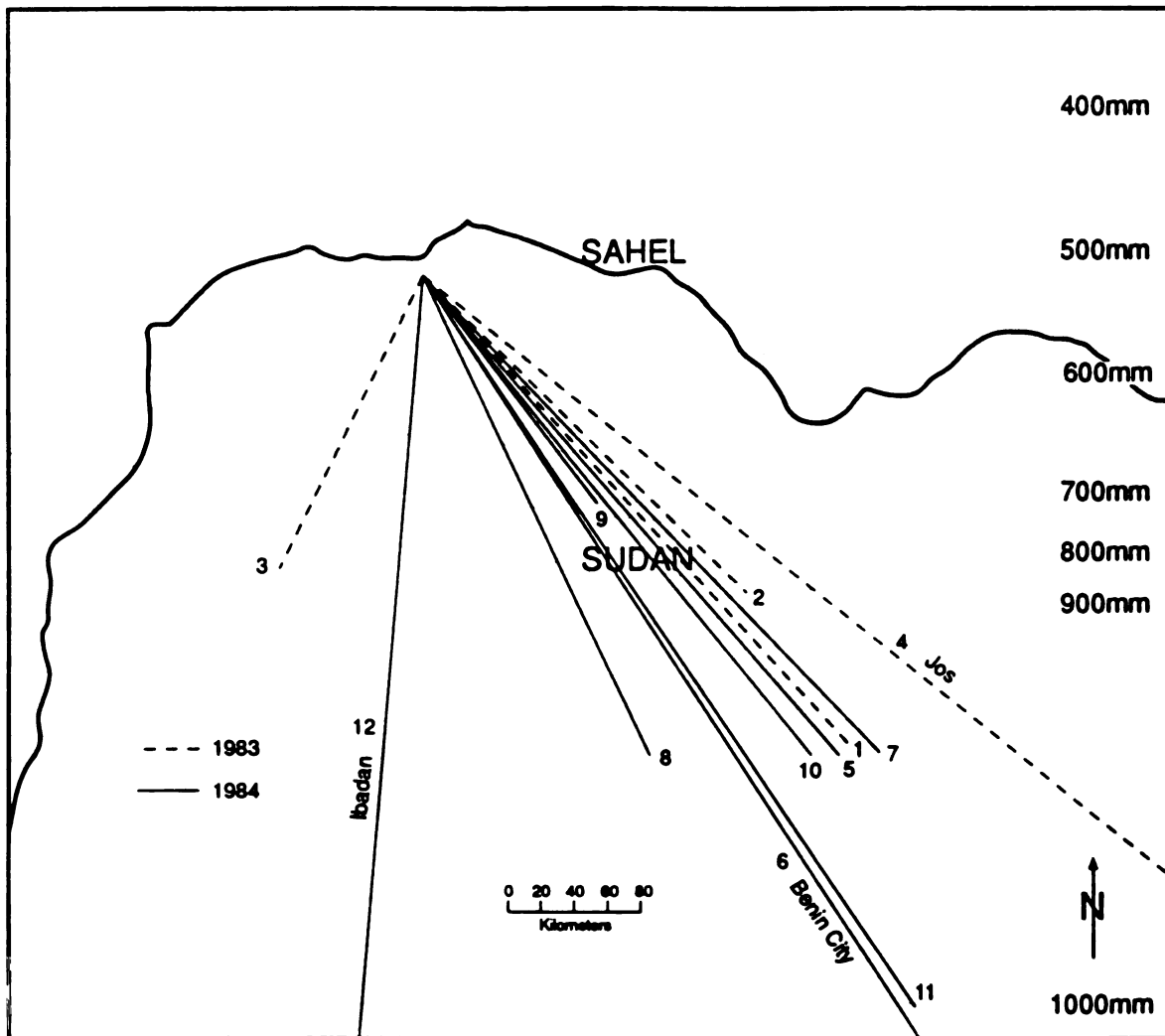


Figure 6.15: Reported Permanent Out-Migration from Amarawa Village during Buhariyya (1983-85)

permanent out-migration to Niger during Buhariyya (Figure 6.8).

Three Amarawa informants emigrated after the 1984 harvest and returned in late 1985 (Figure 6.16). As he had done during Mai Zobe, Z migrated to Abingulu village, Niger, where in 1985 he cultivated farmland inherited from his mother. But this time he took his wife and sister with him. Before migrating, Z sold one upland farm, but still owns one large fadama farm and another on the uplands. H left his wife and children in Amarawa and migrated to Unguwar Mai Gayya, a village near Dandume. He sold one of his Amarawa farms before migrating, and left the other two with his older brother. At his destination, he worked as a day laborer initially and lodged in a section of another's compound. Farms were loaned to him for the 1985 agricultural season.

In August 1984 A's crops looked to be total failures, as did his father's, and the Lake Kalmalo fishery, a mainstay of his livelihood, did not exist. He set out alone for Ibadan to look for work. During his journey south he learned of opportunities in Tunga Gero village for both wage labor and for farming on his own account. He found a place to stay, and then returned to Amarawa for his wife and small children. A had cash savings, which he augmented with earnings from wage labor in the later part of the 1984 rainy season. He used some of this money to hire workers to help him clear bushlands for farms. His 1985 harvest amounted to

KEY TO FIGURE 6.16

<u>Map ID.#</u>	<u>Migrants</u>	<u>Destination(s)</u>	<u>Years of Absence</u>	<u>Reason Stated for Migration</u>	<u>Reason Stated for Return</u>	<u>Other Long-Term Migrations</u>	<u>Present Socioeconomic Status</u>	<u>Other Information</u>
1	informant, informant's wife, children	Dan Kurmi village; Alela village; Tahoua town	1983-85	drought	drought ended	no	masakaita ("middle class")	1983-84, farmed as "share cropper" Dan Kurmi; 1984-85, practiced trade (butchering) Alela, Tahoua
2	informant, informant's wife, other relatives	Abingulu village	1984-85	famine	not stated	c. 1960-64 (Kano); Mai Zobe (1965-67)	talaka (peasant/commoner)	farmed Abingulu 1985
3	informant	Unguwar Mai Gaya village	1984-85	not stated	family, farms	no	talaka (peasant/commoner)	farmed Unguwar Mai Gaya 1985
4	informant, informant's wife, children	Tunga Gero village	1984-85	fishing, mainstay of informant's livelihood, not possible due to desiccation of Lake Kalmalo	replenishment of Lake Kalmalo; news of good 1985 harvests	no	talaka (peasant/commoner)	farmed Tunga Gero 1985

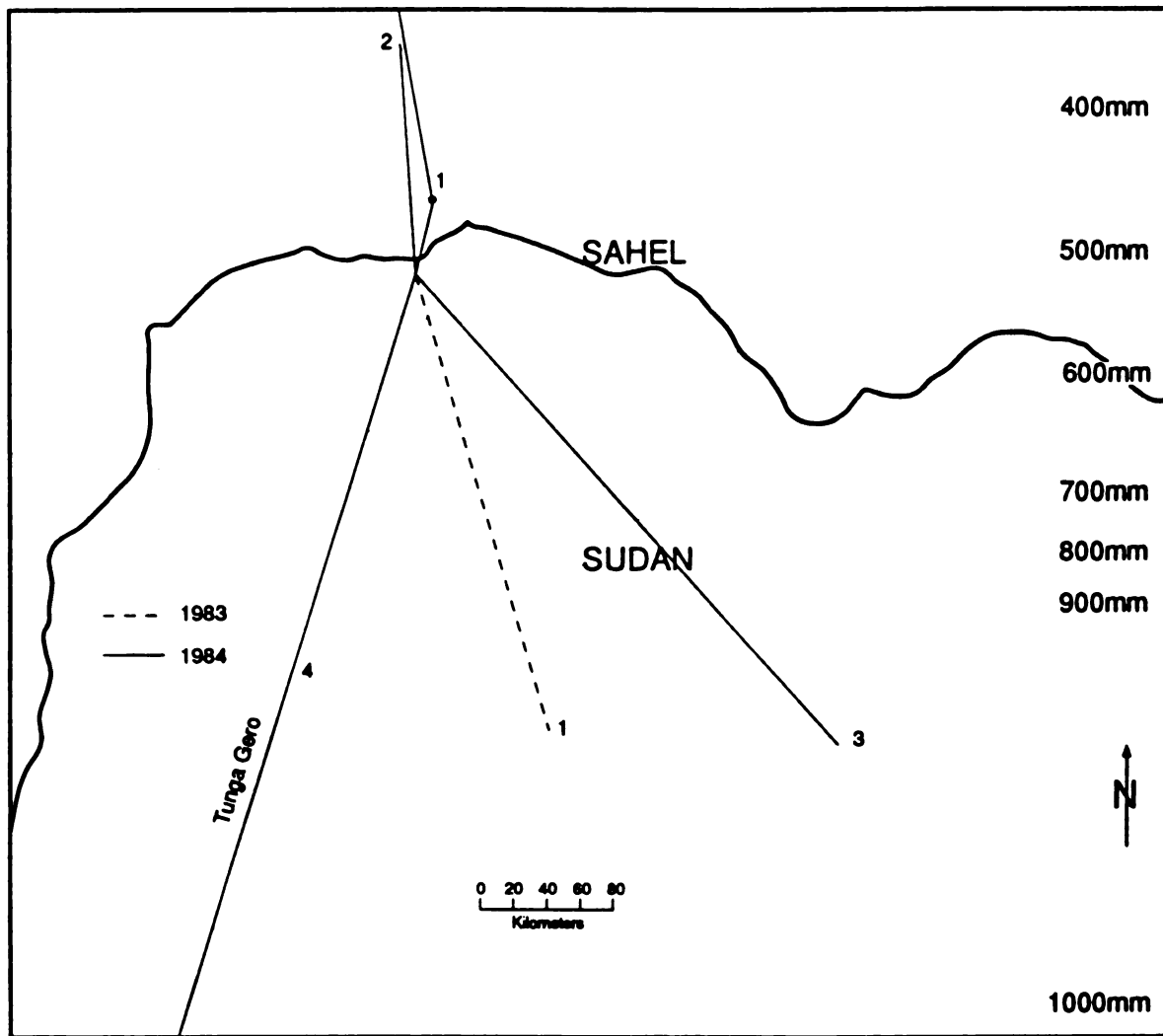


Figure 6.16: Out-Migration from Amarawa Village and Subsequent Return, Buhariyya (1983-85)

80 bundles of grain, in addition to sacks of corn and cotton. The opportunity again to fish in Lake Kalmalo was the primary motive for his return to Amarawa. He had not sold either of his two upland farms, and ownership of a large family (gandu) fadama farm had been maintained by his father.

G, a butcher who ranks among the "middle class," migrated with his family to Dan Kurmi village after harvest failure in 1983. He was in effect a share cropper, but was able frequently to hire labor. He returned to Amarawa after the 1984 harvest, but stayed only briefly before moving again with his family to Alela village and then to Tahoua. He practiced his trade in these places until c. May 1985, when he returned to Amarawa and purchased an additional farm with cash accumulated during his migration.

Two informants from Tudun Gudali Mai Ruwa also migrated after the poor 1983 harvest and subsequently returned (Figure 6.11). B and his family were absent for nearly five years, living in Kaduna and later in Minna. His contacts from previous seasonal migrations to these cities were instrumental in finding fairly steady work as a wage laborer. He did not sell farmland before migrating. Y suffered the loss of many domestic animals and a poor harvest in 1983. Friends originally from Sagera village (c. 20 kilometers east of the study area) suggested that he join them in Mariga, where they had migrated during the early 1970s. He traveled there with his wife and other family

members in late 1983 and was loaned farms and given a place to stay. Although he could not afford to hire labor, his agronomic efforts were rewarded with four 50 kilogram sacks of grain, which he brought back to Tudun Gudali Mai Ruwa in late 1984 and shared with his parents. Y owns only one upland farm, and he maintains that he did not sell land during Buhariyya. He stated that livestock rearing is more important to him than farming, and that this accounts for the comparative isolation of his compound. Another informant migrated to Ibadan mid-way through the 1984 rainy season, got jobs as a wage laborer, and sent food and money to his family in Tudun Gudali Mai Ruwa. He returned home for the start of farmwork in 1985.

Only one long-term migration culminating in a return was reported from the Gidan Alkasim hamlets. This was U, who after the 1984 harvest migrated with his family to a settlement on the outskirts of Minna, where he had been engaged in modest trading activities during the dry seasons of several previous years. His half brother, originally from a village near Birnin Konni, helped him to get farms. His wife was unhappy in their new home, and after the 1986 harvest returned with their children to Zangon Tsakuwa. U followed a few months later, reclaimed all of his farms from his older brother, and began cultivating them in June, 1987.

The more temporary movement of families, a form of migration similar to that observed by de Waal (1989) in Darfur, Sudan, during the mid-1980s famine, was reported by

five informants in the study settlements. One family from Zangon Tsakuwa spent most of the 1984-85 dry season encamped with their flocks in the hinterland of Mamande, a village approximately 20 kilometers to the southwest, where they received food in exchange for their animals' manure. The household head, who had not practiced this type of transhumance since the early 1960s, also stated that he became involved in the livestock trade during these months away from home. The family returned to Mamande during the dry seasons of the two following years. In c. October 1984, a Buzu family headed by G migrated from Tudun Gudali Mai Ruwa to 'Yar Kofoji, the village to which G's brother had migrated with his family after the 1983 harvest (Figure 6.8). G left his wife and children with his brother's family and went to Ibadan, where he labored throughout the 1984-85 dry season. He collected his family in 'Yar Kofoji and returned to Tudun Gudali Mai Ruwa for the start of farming operations in 1985. A, another Buzu household head from Tudun Gudali Mai Ruwa, migrated with his family to Sokoto during the rainy season of 1984. Here they worked for three months gathering and selling fodder. This informant reported that the proceeds from this pursuit enabled him to trade in modern rope in Illela and Gada, and thus to provision his family. Both A and G lost most of their livestock; A held onto his two farms, while G sold two of his four parcels before migrating.

Two Amarawa informants migrated with family members during the 1984-85 dry season. B went with his wife and children to Minna, his normal dry season destination, where he worked as a laborer and carried on petty trade from a table. S, a household head equivocally stratified as "peasant" and "middle class," took his small children to Koranic school in Mozagi, Niger, where he was able to rent four small dry season plots on a government irrigation project. This cost him a total of ₦120, which he had raised by selling a donkey and five sheep. His labor on other individuals' farms enabled him to purchase food and bring it to his family members in Amarawa every Friday during his six month absence. At the end of the dry season S sold good crops of tobacco and cowpeas for ₦1,400, and purchased a donkey and one upland farm after returning home for the 1985 farming season.

One instance of multi-locality was initiated during the 1984 rainy season. A, a member of the jan talakawa group in Amarawa, related that he had been unable to feed his wife and young children. He began making frequent trips to Birnin Konni to seek opportunities for wage labor. His efforts eventually resulted in steady employment, but not before he was forced to sell a portion of one of his upland farms. Since Buhariyya, A has kept his job in Birnin Konni, and lives in a rented room. He comes to Amarawa every two or three weeks to bring food or money to his family, and to tend to his two upland farms.

The Fulani of Tudun Gudali Mai Ruwa

The Fulani in Tudun Gudali Mai Ruwa reported staggering livestock losses during Buhariyya. The head of one extended family related that his sons' rainy season excursion toward the Sahara was arrested near Bagawa (13°50'N) due to a lack of pasture. On their early southward return trek, 15 head of cattle died. More cattle died after the group's return to Tudun Gudali Mai Ruwa, and a larger number were sold. Overall this family lost an estimated two-thirds of its herd. Another family whose sons had penetrated farther north reported that 90 percent of their cattle died in Niger.

The Fulani employed two strategies in an attempt to keep alive enough cattle for "iri," or "seed" with which to reconstitute their herds. The first was to sell the weaker animals in order to buy fodder (usually millet and sorghum stalks) for the stronger ones. The second strategy was to purchase farmland with the proceeds from livestock sales. The remaining animals then could graze on the failing crops.

A group of Fulani comprising three senior household heads, their seven adult sons, and women and children emigrated permanently from Tudun Gudali Mai Ruwa in late 1984 after suffering major livestock losses. They have reportedly established a small settlement in a relatively thinly populated area near Tureta (c. 70 kilometers southeast of Sokoto). Here they have been making serious

efforts to become successful farmers while attempting to reconstitute their herds.

Lakoda and Other Study Area Settlements

The series of interviews with groups of elders in seven other study area villages focused on twentieth century famines, settlement history, climatic and environmental variation, and contemporary agronomic and ecological problems. The topic of famine-related migration also was eventually addressed. Elders in Gaeti and Rungumawa asserted that distress migration had never taken place from their villages. Araba and Makwala informants stated that no long-term migration has ever occurred as a result of famine. Noman hali, a man's maintaining and farming lands in the Illela area and in areas farther south (especially around Talata Mafara), in some cases may have been initiated during past droughts. Interview participants in Tozai averred that apart from the mass migration during Muda (1953-54), no one had ever left their village in distress. (Informal interviews conducted elsewhere with three Tozai farmers resulted in a list of three household heads or families who had emigrated during Buhariyya.) Lafani elders were rather vague in their assessment of distress migration: if people migrate because of hardship, they always return within a year or two. (Interviews with other study area informants indicated that permanent out-migration in 1983-85 had been extensive.)

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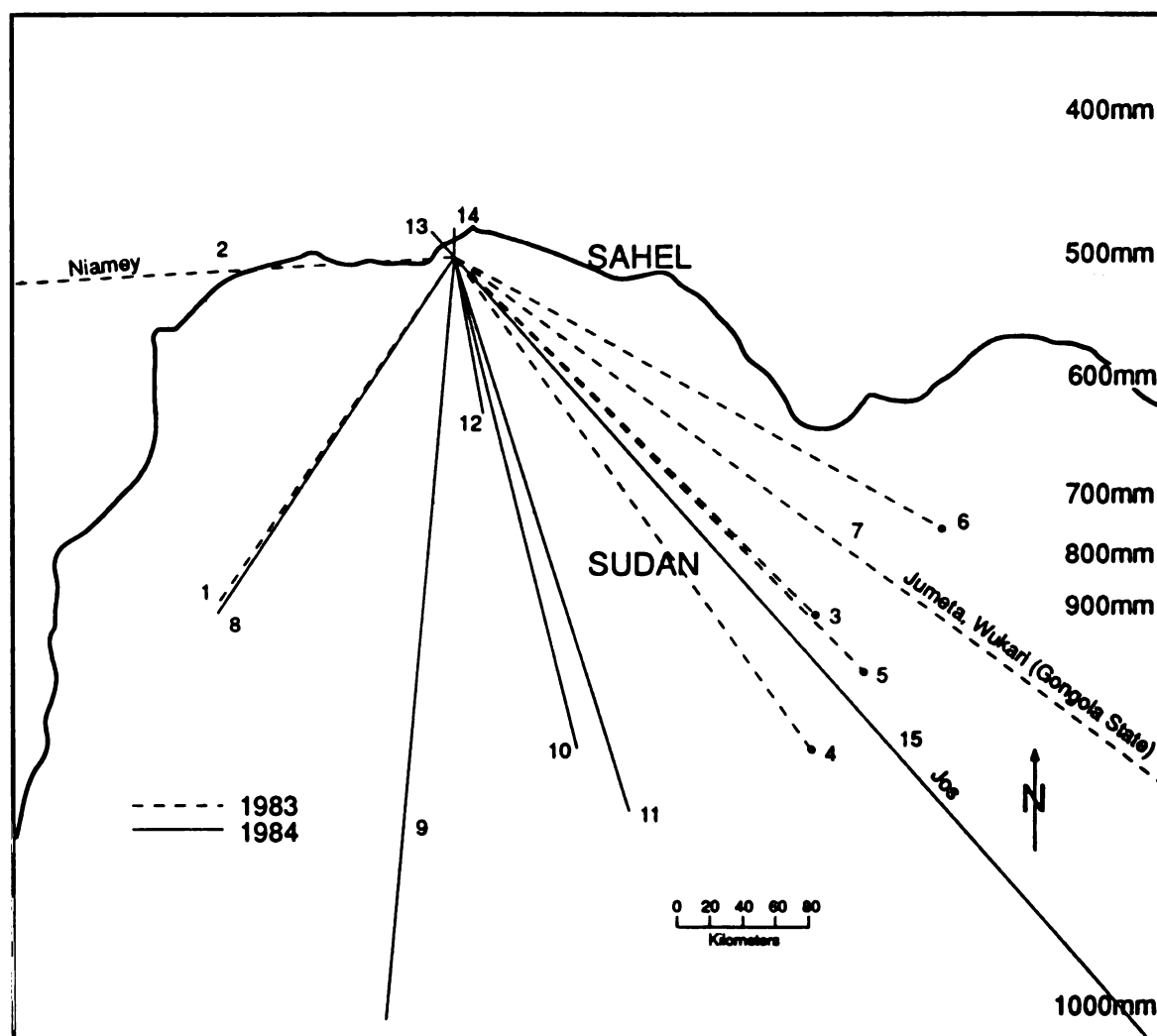
R

During the second group interview in Lakoda, the initial response to the question regarding famine-induced migration was that people who leave never return. Low murmurings issued forth from three men seated in a corner, and then an extraordinarily energetic discussion quickly ensued during which these elders cited names and made marks in the sand.

The Lakoda elders agreed to a third interview that would focus specifically on distress migration. My research assistant and I decided to limit the discussion further to families that had migrated during Buhariyya and that had stayed for at least one rainy season in another place. The informants marked in the sand amid extensive deliberations, providing names, destinations, and other information, including the only substantial data on the impacts of famine on female-headed households.

The total family out-migration from Lakoda and its two Buzu settlements during the 1983-85 famine is portrayed in Figure 6.17. Nearly all migrants departed in September or October. Figure 6.18 indicates the families from among this group that returned after one or more rainy seasons.

Thirty families migrated during the famine. Fourteen families, including three headed by women, migrated in 1983. Sixteen families migrated the following year. The Buzu families migrated to a village established just north of Jega by Nigerien Buzu refugees from the early 1970s famine. Only three families migrated to Niger. Dutsen Ma, Jos, and



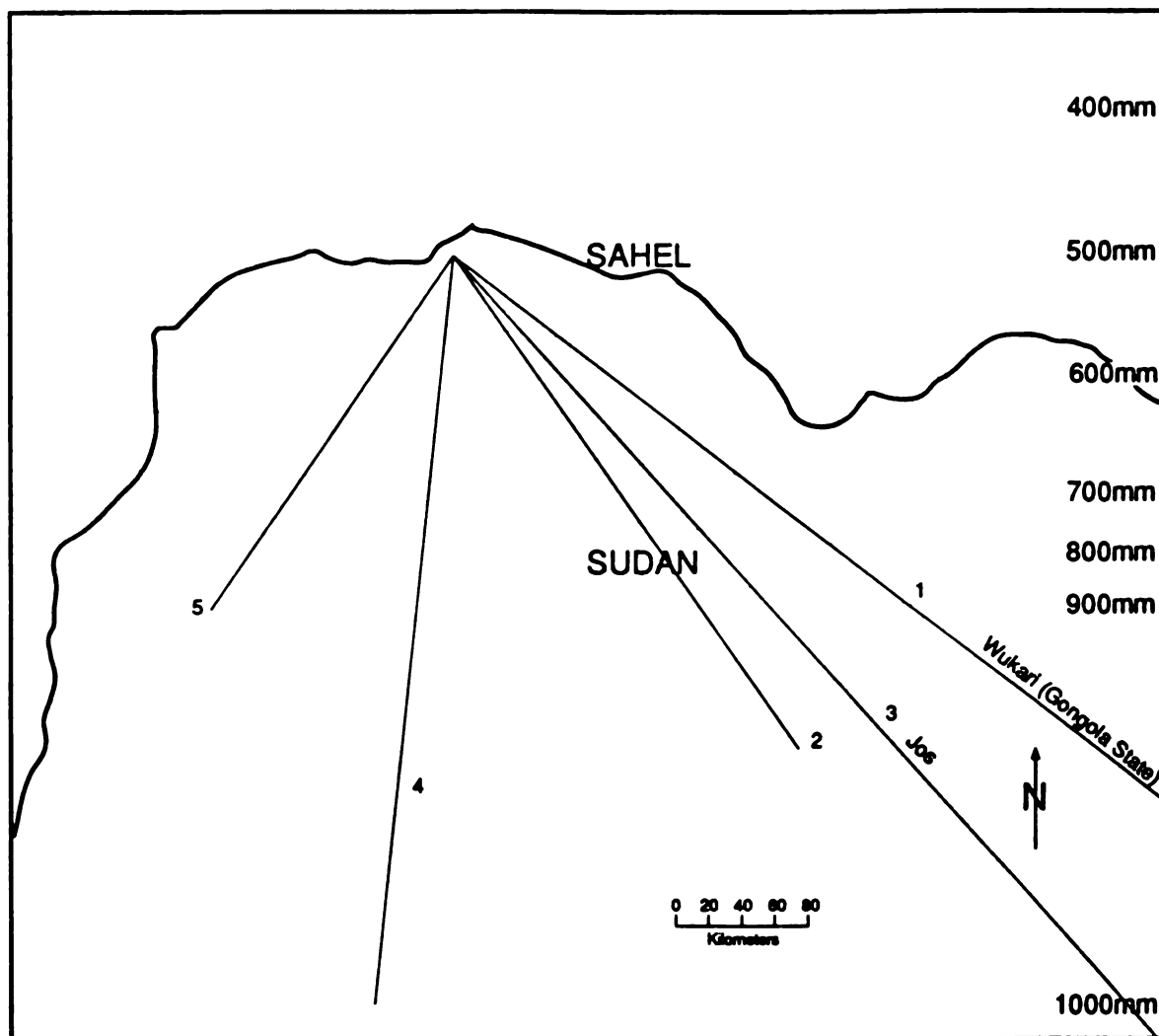
1983

1. 2 single mothers and children from Buzu satellite settlements(s) to Buzu village north of Jega.
2. 1 single mother and children to Niamey.
3. 1 family to Mada village.
4. 2 families to Bilbis/Mairua village.
5. 1 family to Dan Sabo village.
6. 2 families to Dutsen Ma town.
7. 4 families to Masalacin Kara village near Jumeta, Gongola State; 1 family to village near Wukari, Gongola State.

1984

8. 6 families from Buzu satellite settlement(s) to Buzu village north of Jega.
9. 4 families to Ibeto area.
10. 1 family to village near Dan Kurmi.
11. 1 family to Mai Rai-Rai village.
12. 1 family to Dan Gamba village.
13. 1 family to Tamaka village.
14. 1 family to Wadai village.
15. 1 family to Jos.

Figure 6.17: Total Reported Family Out-Migration from Lakoda Village during Buhariyya (1983-85)



1. 1 family from village near Wukari, Gongola State.
2. 2 families from Bilbis/Mairua village (1 family head died in Bilbis/Mairua).
3. 1 family from Jos.
4. 4 families from Ibeto area.
5. 4 families from Buzu village north of Jega to Buzu satellite settlement(s).

Figure 6.18: Total Reported Family Return Migration to Lakoda Village after Buhariyya (1983-85)

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Niamey were the only non-rural destinations. All of the other destinations were villages south and southeast of the study area.

Of the thirty migrant families, twelve had returned by June 1990. Four of these were the Buzu families, and four were the families that had farmed for two years near Ebetu. The death of a senior household head was thought to have motivated the return of two families from Bilbis/Mairua.

Only two heads of the returned families were available for an interview. After the second weeding (mai-mai) of the 1984 farming season, L departed alone for Jos with the intention of working for a few weeks in order to buy and bring back food. He was fortunate to find a job as a security guard, and owing to contacts made during previous dry season migrations, opportunities existed for wage labor. When he returned to Lakoda three weeks later, he found that his harvest was going to be a total failure, and that his family had no grain to eat. He then brought them with him to Jos, where they all remained until 1990. L sold neither livestock nor farms, leaving both in the care of his younger brothers.

G harvested just six bundles of millet in 1984. He and his wife and children had virtually no other food. G knew people from Lafani who had migrated to Wukari, Gongola State, in the previous year and were farming there. Before leaving he tried to let his farms, but because no one was interested he loaned them to relatives. He nevertheless had

enough cash to pay for transport in a lorry. In Wukari he was given permission to clear bushland for farms after paying a nominal tribute to the local authorities of the Tiv ethnic group. G enjoyed considerable success in farming, but economic opportunities apart from wage labor were difficult to find. After the 1986 harvest his relatives in Lakoda sent word that he should return. He did so reluctantly; his wife and children resisted this decision.

Summary and Discussion

Out-migration during famine is not in all cases permanent. But reports of permanent out-migration are several times more numerous than incidents of out-migration and subsequent return. The preponderance of permanent out-migration is moderated only slightly when one considers Amarawa informants' accounts of six incidents of return migration by people who were deceased or not available for interviews (three related to Mai Zobe, one to the early 1970s famine, and two to Buhariyya).

Table 6.12 provides simple answers to the first of this study's principal research questions. An important layer of complexity is the distinction between migration involving families and migration by men who divorce or abandon their wives and children. The available data indicate that family migration is more prevalent than migration undertaken alone by men (Table 6.13). Socioeconomic class, ascertainable only for return migrants, is another important

**Table 6.12: Ratios, Reported Permanent Out-Migration:
Out-Migration/Subsequent Return**

	<u>Amarawa</u>	Tudun Gudali <u>Mai Ruwa</u>	Gidan Alkasim <u>Hamlets</u>
Muda (1953-54)	9:5	0:0	1:0
Mai Zobe (1965-67)	17:3	7:0	0:0
Muna Sane/Shekara Karmami (1972-74)	5:1	3:3	1:0
Buhariuya(1983-85)	12:4	2:3	3:1

Table 6.13: Reported Domestic Situation of Migrants during Famines

	<u>Amarawa</u>		<u>Tudun Gudali</u> <u>Mai Ruwa</u>		<u>Gidan Alkasim</u> <u>Hamlets</u>	
	Permanent	Returned	Permanent	Returned	Permanent	Returned
<u>Muda (1953-54)</u>						
Family	6	3			1	
Single/Alone		2				
Divorce/Abandoned	1					
No Data	2					
<u>Mai Zobe(1965-67)</u>						
Family	9	1	7			
Single/Alone	1	1				
Divorce/Abandoned	1	1				
No Data	6					
<u>Muna Sane/</u> <u>Shekara Karmami</u> <u>(1972-74)</u>						
Family	2	1			1	
Single/Alone			2			

Table 6.13 (cont.)

	<u>Amarawa</u>		Tudun Gudali <u>Mai Ruwa</u>		Gidan Alkasim <u>Hamlets</u>	
	Permanent	Returned	Permanent	Returned	Permanent	Returned
Divorce/Abandoned	2		1			
No Data	1		2	1		
<u>Bukariya</u> <u>(1983-85)</u>						
Family	4	3	1	2	3	1
Single/Alone	3			1		
Divorce/Abandoned	1	1	1			
No Data	4					

consideration. Of the 14 incidents of out-migration from Amarawa that culminated in a return, nine involved members of the "peasant" group, two members of the jan talakawa, and one a "middle class" family. Five returnees to Tudun Gudali Mai Ruwa are from the "other Hausa" group, and one is Buzu. The lone return migrant to Zangon Tsakuwa is not among the four most prosperous households of the Gidan Alkasim hamlets.

That several informants, all squarely classified as "peasants," have migrated more than once suggests that certain individuals and families have a innate propensity to migrate. The most notable cases are Al Haji M. W., who in addition to his overland pilgrimage migrated during Muda and Muna Sane, and M, whose parents were refugees from Saketariya and who migrated during Shekara Kyamro and Muda. Perhaps these and the other informants who have spent several protracted periods away from home exemplify the pioneering ethos that partly explained the agricultural colonization of the Saharan borderlands in Niger (Delehanty, 1988).

The maps presented in this chapter and in Appendix 11 indicate that the role of famine in instigating population mobility has been considerable. Nineteen instances of permanent out-migration from Amarawa during non-famine periods reportedly have occurred since the 1940s. In comparison, 43 such instances occurred during the approximately seven years of famine that punctuated the

1953-85 period. Fourteen Amarawa informants migrated during non-famine periods and subsequently returned. A nearly equal number of migration cycles commenced during the four famine intervals. Three cycles of migration from Tudun Gudali Mai Ruwa were not attributed to famine, and six were. Four instances of permanent out-migration from this settlement took place in non-famine years, compared to twelve during famines. Three instances of permanent out-migration occurred from the Gidan Alkasim hamlets in non-famine times, and six during famines. One informant's time in the Jos tin mines represents the only non-famine migration cycle; U and his family's migration to Minna in 1984 the only cycle related to famine.

The available data from Amarawa indicate that famine has had a major role in that village's settlement history. Twelve informants acknowledged that they or their forebears immigrated during twentieth century famines. The 19 other reported instances of immigration were motivated by opportunities for marketing, fishing, employment, patronage, or Koranic studies, by the death or divorce of a parent, and by French forced labor.

Escape from forced labor, and in the case of the Buzu, sedentarization, are the primary explanations for the establishment and growth of Tudun Gudali Mai Ruwa. The only acknowledged instances of famine-related immigration to the Tudun Gudali Mai Ruwa site were those undertaken by one

group of Fulani during Saketariya and the five families from Cilgo, Niger, who arrived during Muda.

The founding of Katanga may have been related to drought and desiccation during the first decade of the twentieth century. Some informants from Zangon Yamma cited forced labor as the reason for their parents' migration; others of Buzu origin became semi-sedentary farmers here. The founding of Gidan Alkasim and Zangon Tsakuwa might be attributed to a conjuncture of famine, the opportunity to escape Tuareg domination, and the availability of pasture and unoccupied cultivable lands.

The data on informants' origins attest to the potential for recovery from famine. That the wealthiest man in Amarawa is the son of refugees from the 1913-14 famine proves that people afflicted by famine not only can recover, but over the course of a generation, prosper. Three other informants who are the sons of refugees from famines rank among the "middle class;" six are "peasants," and only one was judged to be extremely poor.

Accounts of immigration and out-migration, as well as the data on responses to Buhariyya, suggest how famine spreads across space. The leveling effect – the giving and receiving of gifts of food and money – occurs within settlements but also extends to other often nearby communities. Migration for work and to procure food are undertaken in the locality and to destinations farther afield. The maps on the preceding pages include numerous

examples of immigration from and out-migration to nearby settlements. Three migrants to Amarawa stated that upon their arrival they received help from patrons or relatives and had opportunities to work. But their migration must have reduced in some measure the reserves of food and the opportunities for labor in a community itself suffering from the impacts of famine. During four famines – Shekara Kyamro, Muda, Muna Sane, and Buhariyya – Amarawa experienced both immigration and out-migration. To some extent the immigration may have contributed to the out-migration by reducing the overall capacity of the people to support those in greatest need. The occurrence of distress migrations from the study area to villages in Niger suggests potential serious consequences for this country of famine in Northern Nigeria.

Data on migration and responses also indicate that considerable inter-village variations in vulnerability to famine have existed. During Muda, no permanent out-migration occurred from Tudun Gudali Mai Ruwa; rather, this settlement was a destination for refugees. No long-term migration occurred from the Gidan Alkasim hamlets as a result of Mai Zobe, but mass migrations took place from Amarawa and Tudun Gudali Mai Ruwa. On a proportional basis, the migration data suggest that the impacts of the 1972-74 famine were most severe in Tudun Gudali Mai Ruwa. In the context of the study area, Lakoda is the most striking example of greater vulnerability. Thirty families emigrated

during Buhariyya, compared to only seven from Amarawa, a village of comparable size. Lakoda's lack of perennial sources of domestic water and fadama lands may be in part responsible.

The data presented in this chapter are only equivocal evidence for the ratchet effect – the wholesale transfer of assets from the relatively poor to the relatively rich during famine. Relative to the upper two socioeconomic strata, a disproportionately larger number of talakawa and jan talakawa sold their labor power and sold or slaughtered livestock. This is also true concerning farm sales. But six wealthy and "middle class" household heads sold farmland, and a much greater number disposed of their assets in livestock. A few "peasants" actually purchased farms and livestock during the famine.

Not one returned migrant sold all of his farmlands before departing. Most left their land in the possession of relatives; a minority sold some of their farms. After prolonged absences, migrants were able to recover their farms – a fact consonant with the findings of Ross's (1987) field research.

The question of whether people who migrate permanently during famines sell their farmland will be considered in the next chapter. Fieldwork in the Sudan study area focused principally on the second research question concerning refugees' recovering from famine and the ordeal of distress migration.

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FAMINE, MIGRATION, RESETTLEMENT, AND
RECOVERY: CASE STUDIES FROM
NORTHWESTERN NIGERIA

Volume II

By

John Grolle

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Geography

1995

The present study of the Mela area is concerned with the century family famine Buhar effect. People the only one relatively well migrants were reports of famine three times and subsequent their progeny indicated that livelihoods discussed that this study's more typical.

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CHAPTER SEVEN: RECOVERY FROM FAMINE IN DANSADAU DISTRICT

The preceding chapter focused on famine impacts in the Illela area and on this study's first research question concerning return migration by refugees. Data on twentieth century famines, especially those pertaining to the 1983-85 famine Buhariyya, challenged the validity of the ratchet effect. People of the poorer socioeconomic strata were not the only ones who sold productive assets, nor were the relatively wealthy the sole buyers. Furthermore, returned migrants were indeed able to reclaim their farmlands. Yet reports of famine-impelled permanent out-migration were three times more numerous than incidents of out-migration and subsequent return. Nearly all of the former refugees or their progeny encountered in the Sahel study villages indicated that they had been able to rebuild their livelihoods. But because only a minority of informants discussed their origins, it seemed necessary to investigate this study's second research question in another, perhaps more typical refugee destination.

The present chapter presents the results of research undertaken in Dansadau District. It focuses primarily on people who migrated permanently from the Sahel to Dansadau District during famines. Reports of return migration also were recorded. In seven communities, accounts of famine impacts, distress migration, survival, and recovery were imparted largely during series of group interviews. In

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The sections on refugee communities are preceded by accounts of Dansadau District's settlement history, which emphasize the importance of famine and the longstanding links between the Sahel and Sudan zones. This chapter's first section on farming systems, food surplus, and income generation points up major differences between the Sahel and Sudan study areas and suggests why Dansadau District has become a favored destination for migrants.

Immigrants to Dansadau District have recovered from famine and achieved relative prosperity without the assistance of governments and international aid agencies. This indicates not only that migration to the Sudan zone is an effective famine mitigation strategy, but also that considerable unrealized agricultural potential exists in the Sudan. The experiences of refugees who have settled in Dansadau District reveal both the opportunities and the problems that attend migration and resettlement.

Farming Systems, Crop Surpluses, and Off-Farm Incomes

Food self-sufficiency is the norm, not the exception, in the Sudan study area. Few opportunities exist locally for earning off-farm incomes. Fortunately, these incomes are not absolutely necessary for most households. Farming operations are considerably more arduous than in the Sahel, and demands for labor greater. The critical importance of fallowing in maintaining soil fertility is probably the

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biggest obstacle to increasing food production and accommodating more immigrants.

Farming Systems

Dry season farming on clayey low-lying land is practiced by only a few household heads, most of whom reside in Dansadau village. Informants in other settlements maintain that great potential exists for producing dry season crops, but economically such endeavors are not feasible. The local demand is too weak, and transport costs to Gusau too high. Many farmers anticipated beginning dry season cultivation in 1990-91 with the opening of the tarred road to Gusau.

The predominant rainy season crop is sorghum. On the darker, clayey damba soils, sorghum is often cultivated in sole stands. Some low-lying areas are suitable for monocropping rice. On jigawa and jan gargari soils, sorghum is interplanted with millet, corn, peanuts, and infrequently, cotton. The overall ratio of sorghum to millet is about 3:1.

The two traditional varieties of sorghum are farfara, which is in strong demand commercially because of its pleasant white color and superior taste, and gagarau, which is known for its resistance to insects in storage and on the farm. Janjare, a red variety that is somewhat more appetizing than the northern janjare, was first cultivated in Dansadau District in the late 1950s. In the late 1960s or early 1970s, kaura, a red sorghum with a short head, and

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sangalma, a white variety similar to farfara, were introduced. The variety known as gizon Naira first appeared c. 1985. With chemical fertilizer, a crop can mature in as few as 60 days. Although the taste is not especially good, no other sorghum variety yields as much grain.

Because of harder soils and abundant rainfall, farming operations are much more demanding than in the Sahel. Manual land preparation is a taxing task. Only a very small proportion of study area farmers own oxen and plows. These greatly reduce the labor required to prepare farms for planting, and are often a source of cash incomes. As many as five weedings – the punishing work with a short-handled hoe – may be necessary during the course of the rainy season. But the longer rainy season affords greater agronomic flexibility than in areas farther north. Crops of cowpeas and the sorghum gizon Naira may be planted as late as the beginning of September. Heavy dews enable them to continue growing for several weeks after the rains cease in late October.

Fallowing is essential. Soil fertility and labor, not rainfall, are the keys to explaining interannual variations in crop production. Yields generally decrease after the third or fourth year of cultivation on a particular parcel, and grasses and especially the weed kuduji (striga) become difficult to control even with repeated weedings. Eventually it behooves a farmer to clear another plot from forest or bushlands. 'Yan kasa, the people indigenous to the

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area, use fire in this process, while immigrants normally do not. 'Yan kasa also sometimes shift the sites of their settlements "to catch up with their farms." Immigrants have never done so. In some areas of Dansadau District, 'yan kasa informants identified relatively densely forested land that had been under fallow for more than 30 years. The general perception, however, is that both the amount of fallowed land and the length of fallow periods have been diminishing.

Farmers insist that a steady and inexpensive supply of chemical fertilizer would not only increase yields, but also obviate the need to make new farms from forest or bushlands every five years. In the past, 'yan kasa actually discouraged Fulani transhumants from grazing their cattle on crop stubble. The animals spread the seeds of weeds through egestion, and the manure itself caused unmanageable weed growth. With the reduction in fallow periods and soil fertility, Fulani now are sometimes compensated for their livestock's manure. But this increases the demand for labor. Chemical fertilizer, according to farmers, would not promote such profuse weed growth and the concomitant heightened demand for labor.

Although the tse-tse fly (kuda tsando) reportedly has been eradicated as a result of campaigns during the 1950s and again during the Obasanjo regime (1976-79), livestock rearing by farmers is not nearly as important as in the Sahel. 'Yan kasa households typically own only sheep and

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goats. Most of the cattle in Dansadau District belong to immigrants from the north and to Fulani groups. Some informants claim that serious animal husbandry is impeded by excessive dampness and cold (senyi) during the rainy season. To avoid this senyi, some immigrants pasture their livestock in an area approximately 50 kilometers north of Dansadau.

Crop Surpluses

The major source of cash incomes is the production and sale of cash crops and surplus grain. 'Yan kasa expressed surprise when informed that a great many farmers in northern Sokoto State do not produce enough grain to feed their families from one harvest to the next. They asserted that all indigenous people grow grain surpluses for sale, and that women on average produce 100 bundles of sorghum and millet. As will be discussed in the following pages, a large proportion of the immigrants from the north also produce surpluses. Many villages and hamlets have gasoline-fuelled grain processing machines. Farmers must arrange with a vehicle owner to transport their produce to Magami or areas farther north because the prices offered in Dansadau village are too low.

Off-Farm Incomes

The potential for earning incomes through marketing is limited. Taken together, the traditional occupations of wood carving, butchering, tailoring, barbering, and hunting are probably more significant. Agricultural wage labor and

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the collection and sale of firewood are other important sources of off-farm income.

Younger men from 'yan kasa settlements sometimes travel to areas near Zaria and Kaduna for two or three weeks of harvest work. Some immigrants still practice dry season migration to southwestern Nigeria.

Settlement History, Famines, and Historical Links to the Sahel from Pre-Colonial Times to C. 1950

This section synthesizes information from archival materials and the recollections of 'yan kasa elders. 'Yan kasa identify themselves as Katsinawa, a group of Hausa people whose homeland is in Katsina State. They were not able to estimate when their ancestors first settled in what is now Dansadau District, although this was probably more than two centuries ago. The elders acknowledged that the Kamuka, a people who have their own language and a decidedly non-Hausa culture, inhabited the area before them.

In pre-colonial times most, if not all, settlements were walled towns or villages. On a tax assessment tour of the study area in 1915, Mr. M. Liddard learned that ten of eleven walled settlements had been founded before the 1804 Jihad (NAK SOKPROF. 27. 57). Eight were still inhabited: five, including Karauci and Kwiambana, by Katsinawa, and three by Kamuka. In traversing the study area one encounters the ruins of many other fortifications.

By the time of Liddard's visit, people had begun to disperse from these walled settlements to establish small hamlets and isolated compounds. Only 3,062 people were enumerated in the 1,416 square miles of Kwiambana District (roughly the southern three-quarters of Figure 2.6). Cattle numbered 86. Tse-tse flies were pervasive during the rainy season. The produce of very small vegetable gardens was only for home consumption. Farmers were harvesting "remarkably good" quantities of sorghum and millet. Abundant crops of corn and cotton were sold in Birnin Gwari, a town approximately 40 kilometers to the southeast.

The dispersal of population continued during the interval between Liddard's tour in 1915 and the tour of Mr. Eric Saxon in 1920 (NAK SOKPROF. 38. 222). Saxon enregistered five new hamlets in Kwiambana District, four having been established by Katsinawa and one by Kamuka people. Their average population was 38. The district's population, however, had increased by only 34 individuals to 3,096. No livestock of any kind were observed. Because of the profusion of tse-tse, Saxon judged that it would be difficult to keep even a dog alive during the rains. Crop yields again were reported as bountiful.

In the early 1920s one episode of population dispersal culminated in the founding of Dansadau village. Four families migrated from Marabou to establish the hamlet of Han-Han. Other 'yan kasa families soon joined them. The four original families then left Han-Han, three moving to

establish the hamlets of Mai Tukuniya Dan Goge and Mai Tukuniya Babban Gona, and one to found Dansadau.

During the 1930s and 1940s, new hamlets continued to be established, either by people moving directly from the walled towns or by the first generation of hamlets, such as Han-Han, breaking up into even smaller settlements. The cultivation of peanuts and especially cotton became ever more important.

Some 'yan kasa informants stated that "Yunwa Fara," the 1931-32 famine triggered by locust attacks, was the only twentieth century famine to cause hardship for their people. (In a report on the anti-locust campaigns of the early 1930s, Dansadau village is listed as a site at which bait, arsenite, and antidote were stored; NAK SOKPROF. 283. 376B). Whether Yunwa Fara caused emigration from the study area was not recollected. One informant related that his father had ample stored grain. The father of another informant traveled to Birnin Gwari to buy food. No influx of people from the north was recalled.

Oral testimony and one archival source document three types of historical links between the Sahel and the Dansadau region. First, the Sudan study area and neighboring territories have served as temporary refuges for famine-stricken Sahelian families. Second, since the 1920s and possibly before, Dansadau District has been a destination for people who migrated permanently as a result of famines. Third, Dansadau District has offered economic opportunities

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The 1913-14 famine – the first major twentieth century famine – is referred to by 'yan kasa elders as Magilleri or Rakuma. Rakuma, meaning "camels" in Hausa, denotes that this was the first time these animals were seen in the Sudan study area. The famine did not directly affect 'yan kasa families. Its only manifestation was the influx of Sahelian people who congregated around the village of Marabou. Nearly all of these refugees returned to their homelands. Saxon reported that Kwatarkwashi (a district c. 100 kilometers north and west of the study area) also had been a destination for famine refugees (NAK SOKPROF. 38. 222). About 500 families from Kano and Katsina had resided there and apparently paid taxes, but nearly all had returned to their places of origin by 1919.

Soon after its founding, four families from northern Katsina migrated permanently to Dansadau village. These people were probably part of a minor wave of refugees that came to the Sudan study area during Hamada ("desert"), the name 'yan kasa elders have given the famine that occurred during Muhammadu Tambari's reign as Sultan of Sokoto (1924-31). Most of the refugees again returned to their homelands.

During the 1930s and 1940s, the Sudan study area increasingly became a destination for seasonal migrants from the north. Hausa farmers with donkeys and camels were hired

for harvest portorage and for threshing grain. They usually were paid in sacks of sorghum. A few northerners also spent several months of the dry season hunting. Buzu transhumants (Udawa) began to include the study area in their itineraries for southward dry season movements. As best as can be determined, the first dry season visit of Fulani herders took place in the late 1940s.

Settlement History, Famines, and Influx
from the North, 1953-90

The pre-eminent historian in Dansadau District, Alhaji Magaji Barau Dansadau, maintains that the 1953-54 famine Muda caused very little hardship for the people then resident in the study area. Group interview participants in Tabani Marabawa characterized Muda as a short seasonal hunger. Elders in Mai Tukuniya Babban Gona and Mai Tukuniya Dan Goge refer to 1953-54 as both Muda and Dosa, an implement that they used to dig up wild cassava (rogon daji). In their view famine was not caused by excessive rainfall, but by farmers producing too many cash crops at the expense of grains. In Dansadau village sacks of cotton reportedly were piled so high as to be visible for a distance of two or three kilometers.

Muda is remembered as having propelled the first of three major episodes of immigration from the north (Table 7.1). Mai Goge and Dan Gurgu, which still exist, will be discussed in the following pages. The immigrants who

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founded Unguwar Gwandu allegedly were the first to have displaced a 'yan kasa settlement. Unguwar Gwandu was also apparently the only settlement of northern immigrants to have disbanded.

The leader and a plurality of the immigrants were from Makina, a village located 15 kilometers south of Illela. They were joined by families from other villages in the Sahel study area, including Mamman Nsuka, Koringo, and Amarawa. (Informants in Tabani Marabawa, the closest extant 'yan kasa settlement, remember the two Amarawa families well.) Gwandu, the 'dan kasa whose hamlet was closest to the immigrants' settlement, moved after several years to establish Layan Gwandu, approximately 40 kilometers to the southeast on the other side of the forest reserve. Friction stemmed from the settlers clearing and farming what Gwandu and his extended family considered to be their sabra, or fallow lands. The refugee settlement was apparently quite large. Judging from the ruins, it likely comprised 15 or more compounds. By about 1970 Unguwar Gwandu had totally disbanded. A large proportion of the former refugees reportedly returned to Gwadabawa District. Other migrants and their progeny moved to other settlements in the Sudan study area, including Mai Goge.

Dansadau was organized into a district in 1954 or 1955. The traditional authorities of the 'yan kasa were shunted aside and a northerner installed as District Head with the title of Sarkin Kudu, "the King of the South." Whether

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these actions were motivated by the immigration and increased population is unclear. According to 'yan kasa informants, the establishment of Dansadau District and the office of Sarkin Kudu were very positive developments for future immigrants from the north, but detrimental to them.

Immigration to the study area during the years 1955-70 was characterized as "guda guda" – a few people, one by one. No new settlements were established in Dansadau District by northerners in these years. 'Yar Taisha, a large village located approximately 50 kilometers north of Dansadau, was founded in the 1960s by migrants from the Bungudu area after "Shekara Bushen Dawa," the year the sorghum crop dried out.

The dispersal of 'yan kasa settlements continued. Kwiambana had been totally abandoned by c. 1965. Although no significant influx of northerners occurred as a consequence of the famine Mai Zobe (1965-67), at least five other 'yan kasa settlements were abandoned in the 1960s, the inhabitants having "yi Gwari," *i.e.*, migrated south and southeast to the Birnin Gwari area. Other settlements grew in size and became permanent.

The second major influx of migrants from the north took place during the early 1970s drought and famine (Table 7.1). At least four new settlements were established by immigrants from the north during or shortly after the 1972-74 crisis. Again the people of Dansadau district did not experience directly the hardships of famine.

Table 7.1: Immigration to Dansadau District and Vicinity

Village	Sources of Information	Year of Founding or First Influx	Approximate No. of Immigrant Families ⁽¹⁾	Area(s) of Origin ⁽²⁾	
					Northern Sokoto State

Table 7.1: Immigration to Dansadau District and Vicinity

<u>Village</u>	<u>Sources of Information</u>	<u>Year of Founding or First Influx</u>	<u>Approximate No. of Immigrant Families</u> ⁽¹⁾	<u>Area(s) of Origin</u> ⁽²⁾
Dan Gurgu	+ *	1953	25	Northern Sokoto State
Mai Goge	+ * *	1953	31	Northern Sokoto State
Dansadau (neighborhood)	+ *	1973	13	Maradi (Niger)
Naduka	+ *	1973-74	ND	Maradi (Niger)
Randa	+ *	1973-74	ND	Northeastern Sokoto State; contiguous areas of Niger
Ruwan Tofa	+ *	1973-74	ND	Northern Sokoto State
Mai Tukuniya (Gobirawa)	+ * * x	1974	64	Dakoro (Niger)
Unguwar Mai Jan Kai	+ * * x	1975	7	Northern and Central Katsina State
Tunga	+ * x	1975	2	Northwestern Sokoto State
Ragoje	+ *	1977	~60	East-Central Sokoto State
Unguwar Dama	+ *	1983-84	ND	Northeastern Sokoto State
Kwarkwaci	+ *	1983-84	ND	Northeastern Sokoto State; contiguous areas of Niger
Maganawa	+ * * x	1984	24	Northern Sokoto State; contiguous areas of Niger; East-Central Sokoto State

Table 7.1 (cont.)

<u>Village</u>	<u>Sources of Information</u>	<u>Year of Founding or First Influx</u>	<u>Approximate No. of Immigrant Families ⁽¹⁾</u>	<u>Area(s) of Origin ⁽²⁾</u>
Dan Dala (neighborhood)	+ . *	1984-85	5	Central Katsina State
Babban Doka (neighborhoods)	+ . *	1984	20	Northern Katsina State; Dakoro (Niger)
Nasarawa	+ . *	1984	6	Northeastern Sokoto State
Yan Sawaiyu (neighborhood)	+ . *	1984	10	Madoua/Bouza (Niger)
Kufan Dan Bar Mu	+ .	1985	ND	Northern Katsina State; Maradi (Niger)
Madada	+ .	1985-86	ND	Northeastern Sokoto State; contiguous areas in Niger
Gobirawa	+ .	1986-87	10	Northern Sokoto State; contiguous areas in Niger
Kwaca	+ .	1987-88	ND	Northern Sokoto State; contiguous areas in Niger
Nasarawa (Rugan Fulani)	+ . *	1987-88	12	Maradi (Niger)

(1) Includes first immigrants and immigrants who arrived in later years

(2) Refers to ultimate areas of origin, not villages of intervening opportunity in the case of step-wise migration.

ND = No Data

Sources of Information:

+ — Alhaji Magaji Barau Dansadau

* — Group Interviews in Settlements Named

• — Group Interviews in Other Settlements

x — Interviews with Individuals in Settlements Named

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More 'yan kasa moved toward "Gwari" in the 1970s. A relatively large settlement near Mai Tukuniya (Gobirawa), for example, was abandoned in the mid-1970s shortly after a Universal Primary Education school was constructed. 'Yan Kasa sometimes have returned to the sites of their former settlements. Conflicts may arise if they find their fallow lands being farmed by immigrants.

During the years c. 1975-82 immigration from the north was again reduced to a trickle. The only exception is Ragoje, a village established approximately 50 kilometers east of Dansadau by an estimated 60 families that had been displaced by dam construction.

The largest influx from the north occurred during and in the aftermath of the 1983-85 famine Buhariyya (Table 7.1). 'Yan kasa informants stated that the rainy seasons of these years were marred only by bushi, or dry spells, and not drought. Yields were reduced only moderately, and hardship did not develop. Immigration involving smaller numbers of northern people continued in the latter half of the 1980s. Fulani herders began spending the rainy season in Dansadau District in c. 1986, and Fulani groups bereft of cattle established quasi-permanent agricultural settlements.

Refugees in Seven Dansadau Communities

This section presents information gathered during interviews with groups and occasionally with individuals in seven communities populated entirely or in part by

immigrants from the north. Informants described the hardships of famine, their migrations, the challenge of survival after arriving, and the attainment of agronomic prosperity. Although most immigrant families are more prosperous in the Sudan study area than in their Sahelian villages of origin, their communities are not agronomic paradises. Assistance aimed at alleviating the problems they continue to face would substantially improve food production and rural life in Dansadau District. Table 7.2 summarizes refugees' experiences.

Dan Gurgu

Eleven families from Kimbawa/Dankal village migrated immediately after the calamitous 1953 harvest (Figure 7.1). Departing with some small livestock, the group covered the entire 300 kilometer distance on foot or on donkeyback. That Dansadau would be their destination was never in doubt; the refugees' leader had spent several dry seasons here in previous years. Upon reaching Dansadau village they were advised to establish their settlement on a site abandoned by 'yan kasa more than a decade before. (The head of this 'yan kasa hamlet was named Dan Gurgu.) They constructed makeshift shelters, and set about clearing land. Harvest portorage, threshing, and other forms of wage labor were their principal means of sustaining themselves until their first harvest.

The elders stated that they were self-sufficient in staple foods after the 1954 harvest, and with the exception

Table 7.2: Summary of Available Data on Refugees

Needs/	
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Table 7.2: Summary of Available Data on Refugees

Village/Year(s) of Arrival	Number of Families	Season of Departure	How Arrived	Survival after Arrival	Recovery	Needs/ Problems
<u>Dan Gurgu</u> 1953	11	<u>lokacin <u>kaka</u></u> (Sept.- Oct.)	trekking, donkeyback	harvest work, other wage labor	one year to attain food self-sufficiency and to construct permanent housing; 2 families acquired oxen/plows 1988	gasoline-fueled pump and garden hoses for irrigation; more oxen, plows; insects have destroyed cotton crops
1984-85	8	5 families <u>lokacin</u> <u>huntu</u> (Nov.-Feb.); 3 families ND	motor vehicle	sale of small livestock, wild foods, wage labor	3 families one year, and 1 family three years to attain food self- sufficiency; 4 families ND	
<u>Mai Goge</u> 1953	5	<u>lokacin <u>kaka</u></u> (Sept.- Oct.)	trekking	harvest work, other wage labor	one year to attain food self-sufficiency and to construct permanent housing	domestic water supply; guinea worm; small dam for irrigation; insects have destroyed cotton crops
1974	13*	<u>bazara</u> (c. March-April)	motor vehicle	wage labor	two years to attain food self-sufficiency; 1 family acquired oxen/plow 1988	
1984	8*	ND	ND	ND	reportedly attained food self-sufficiency quickly	
<u>Babban Doka</u> 1984	10	<u>lokacin <u>kaka</u></u> (Sept.- Oct.)	all families trekking, donkeyback, motor vehicle	harvest work, other wage labor, firewood sales, mortar manufacture	"some" families self- sufficient in food after two years; all have constructed permanent housing	domestic water supply; land shortage

Table 7.2 (cont)

Village/Year(s) of Arrival	Number of Families	Season of Departure	How Arrived	Survival after Arrival	Recovery	Needs/ Problems
'Yan Sawaiyu 1984	7*	beginning lokacin <u>huntu</u> (c. November)	trekking, donkeyback	harvest work, other wage labor, firewood sales, help from indigenous people	'most' families self- sufficient in food after one year; all families self-sufficient after two years; all have constructed permanent housing; one family has acquired oxen/plow	domestic water supply; desiccation of lowland farms
1984	2*	beginning lokacin <u>huntu</u> (c. November)	ND			
1984	3	Lokacin <u>kaka</u> (Sept.- Oct.)	ND			
1985	1	beginning lokacin <u>huntu</u> (c. November)	trekking			
Mai Tukuniya (Gobirawa) 1974	13*	lokacin <u>damuna</u> (1973) (c. August)	trekking, donkeyback, one family camel; motor vehicle	wage labor, firewood sales	'all' families self- sufficient in food after two years; permanent housing constructed after six months; oxen teams and plows total 10	chemical fertilizer
1984	3	lokacin <u>damuna</u> (1984) (c. August)	motor vehicle (?)	wage labor, dry season migration	all families self-sufficient in food after three years; permanent housing constructed after one year	

Table 7.2 (cont.)

Village/Year(s) of Arrival	Number of Families	Season of Departure	How Arrived	Survival after Arrival	Recovery	Needs/ Problems
Dansadau Village (<u>Neighborhood</u>) 1973	13*	beginning <u>bazara</u> (c. March)	motor vehicle	wage labor	two and one-half years to attain food self- sufficiency	chemical fertilizer, livestock
Nasarawa (<u>Rugan Fulani</u>)	12*	<u>lokacin kaka</u> (Sept.- Oct.)	motor vehicle, trekking	wage labor	1 family two years to attain food self- sufficiency; 1 family not self-sufficient; 10 families ND	secure land tenure, livestock
<u>Maganawa</u> 1984	1	<u>lokacin damuna</u> (c. August)	motor vehicle	special planting of cowpeas, sale of clothing, help from village founders	one year to attain food self-sufficiency, construct permanent housing	See Table 7.9
1984	1	end <u>bazara</u> (c. May)	motor vehicle	cash savings (?), seasonal migration	2 families one year, 2 families two years, 1 family three years, 1 family four years, 2 families five years to achieve food self- sufficiency; one family never self-sufficient; permanent housing constructed after first harvest; 4 families have acquired small livestock; 1 family has acquired oxen/plow; 1 family has acquired oxen	
1984	5	2 families <u>lokacin kaka</u> (Sept.-Oct.) 3 families beginning <u>lokacin hunturu</u> (c. November)	motor vehicle	sale of clothing, help from village founders, smithing, Koranic teaching, wage labor, dry season migration		
1985	1	<u>lokacin hunturu</u> (c. Jan.- Feb.)	motor vehicle	seasonal migration, local wage labor		
1985	1	<u>bazara</u> (c. March-April)	motor vehicle	seasonal migration, local wage labor		

* — includes families who returned

ND = no data

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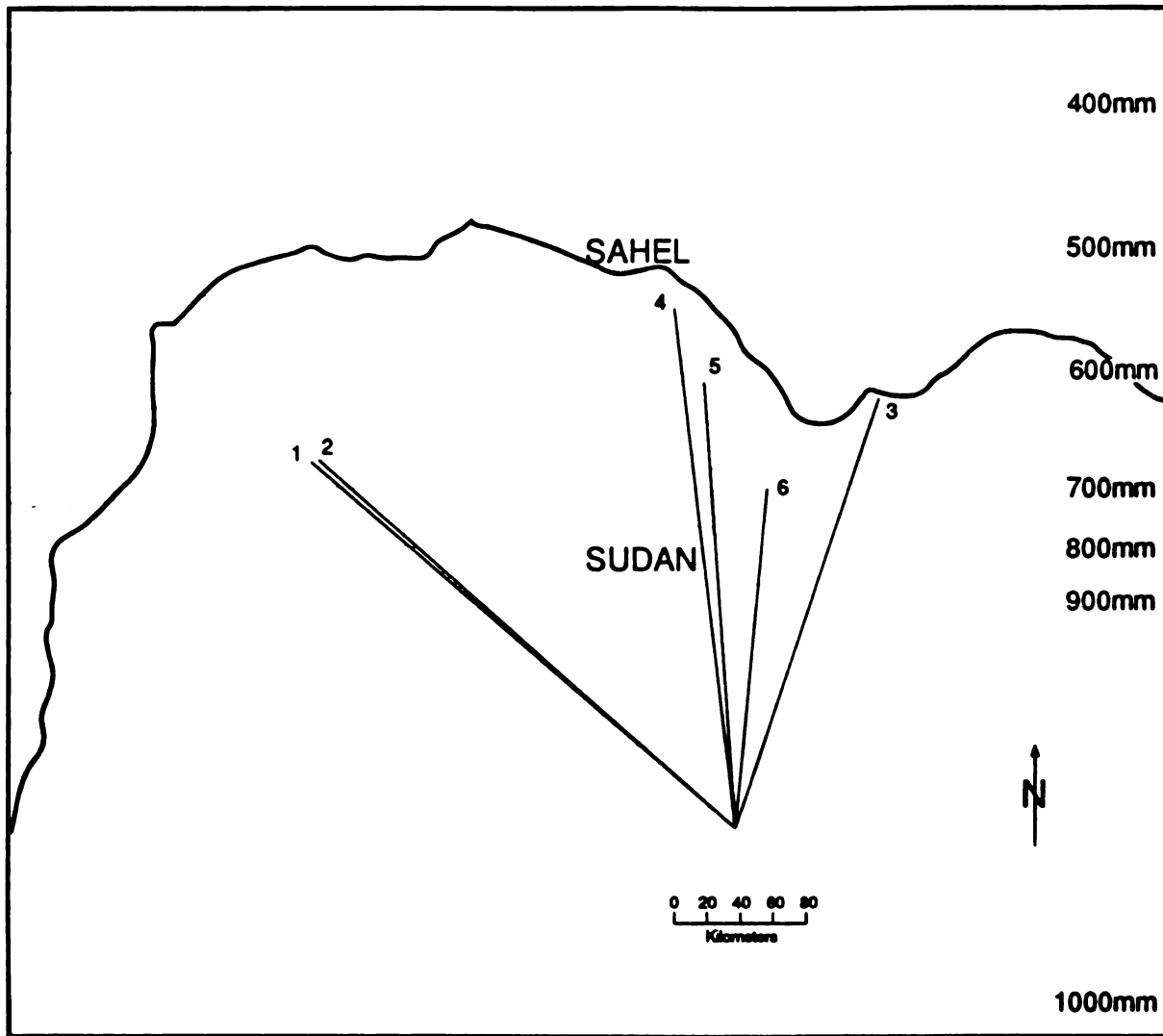
after

of 1984-85, have been so ever since. They claimed that during their early years in Dan Gurgu, a typical village rice harvest totalled 100 50-kilogram sacks. Even though they no longer cultivate cotton, they remain proud of the quantity they were once producing. (The most recent cotton crop, planted in 1983, was destroyed by insects.)

In 1961, two families, also from Kimbawa/Dankal, migrated to Dan Gurgu. The head of one of these families stated that a food shortage unrelated to drought motivated their migration.

The next pulse of immigration did not occur until 1973-74. This involved two families from a village near Jibiya in northern Katsina State. Both families returned after only one farming season.

Eight families migrated to Dan Gurgu as a consequence of Buhariyya (1983-85). Three of these, a senior household head and his two married sons, came from Unguwar Lele village (Figure 7.1). The five families from Gangara village arrived during the 1984-85 Harmattan season. They are the majority of a large gandu unit that comprised seven married men. The total 1984 harvest for this gandu amounted to a scant eight bundles of grain. Before their departure they had slaughtered most of their livestock, but their farms were left with the two men of the gandu who remained in Gangara. Their entire journey was by lorry, and they were able to take with them a few goats and sheep. Soon after their arrival in Dan Gurgu, these animals were sold in



1. 11 families from Kimbawa/Dankal village, 1953.
2. 2 families from Kimbawa/Dankal village, 1961.
3. 2 families from village near Jibiya, 1973.
4. 3 families from Unguwar Lele village, 1984.
5. 5 families from Gangara village, 1985.
6. 1 family from Kwaishaba village, 1988.

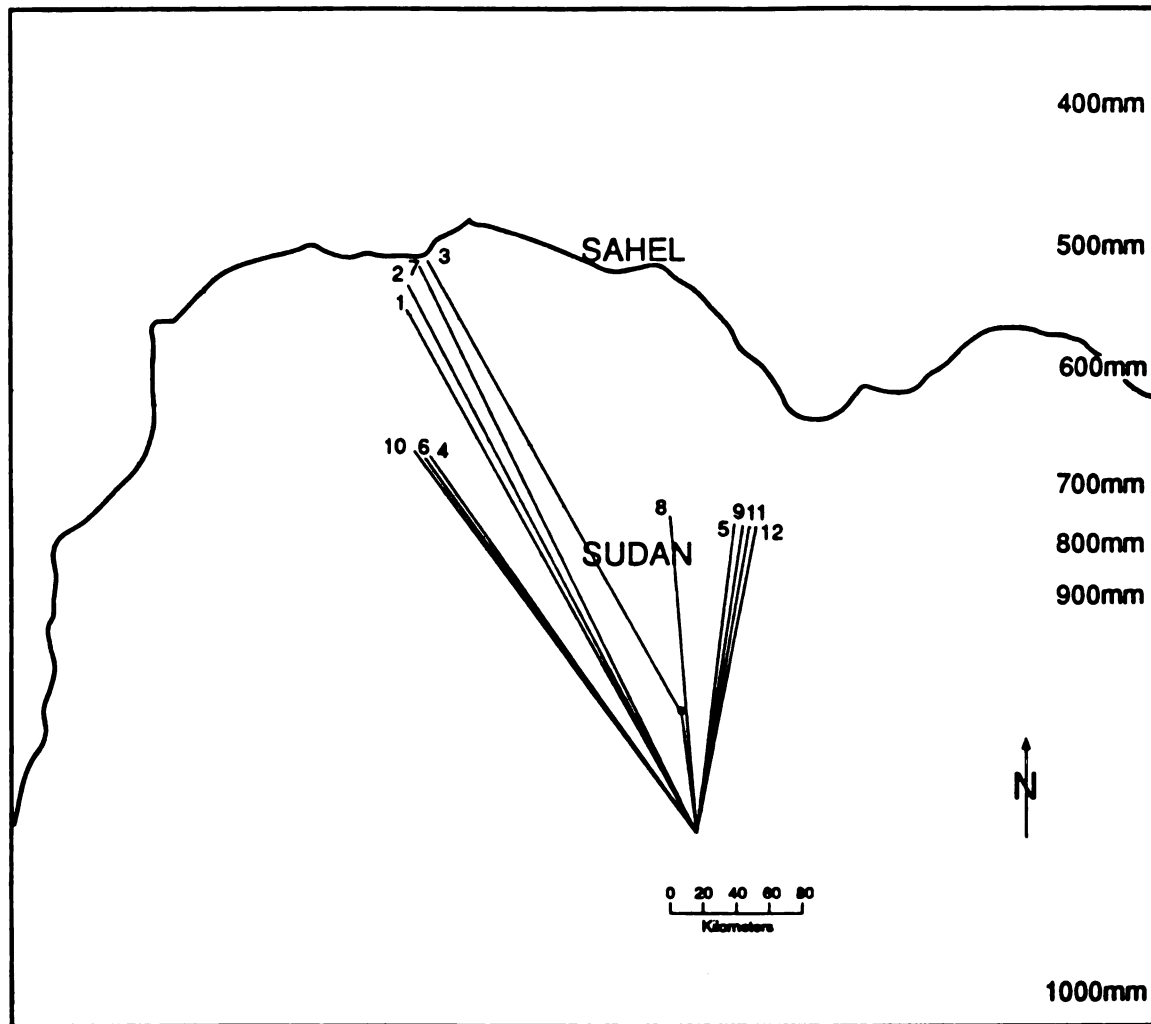
Figure 7.1: Migration to Dan Gurgu Village, 1953-88

order to purchase grain. A kwano (2.5 kilograms) of sorghum cost only ₦2.50 at a government fair price operation in Dansadau village. They also ate wild foods: dinkin (a generic term for several types of edible leaves), kawuri (probably a variety of wild fig), and two types of wild cassava or yam.

Three of the eight families who arrived during Buhariyya achieved food self-sufficiency after their first harvest in Dan Gurgu. Another family became self-sufficient in 1987. No information on the other four families was forthcoming.

In 1987 a family of unspecified northern origins joined the Dan Gurgu settlement after several farming seasons at Unguwar Daika, a village 25 kilometers away. Another household head and his family arrived from Kwaishabawa village after a good 1988 harvest. This man's son and his dependents arrived the following year. Both of these immigrants achieved food self-sufficiency after the 1990 harvest.

Two of the original migrants were able to procure oxen and plows in 1988, but more are required if this settlement is to reach its full agronomic potential. Uncultivated arable land is reportedly abundant. Some areas avowedly have great potential for dry season agriculture, but irrigation with garden hoses and a gasoline-fueled pump would be necessary. The closest place where farmers can get a fair price for their cash crops and surplus grain is



1. 1 family from Makina village to Unguwar Gwandu, 1953; to Mai Goge c. 1970.
2. 1 family from Mamman Nsuka village to Unguwar Gwandu, 1953; to Mai Goge c. 1970.
3. 1 family from Koringo village to Magami, 1953; to Mai Goge 1981.
4. 5 families from Denge village to Mia Goge, 1953.
5. 13 families from Daba village to Mai Goge, 1974.
6. 1 family from Denge village to Mai Goge, 1974.
7. 1 family from Warau village to Mai Goge, 1981.
8. 1 family from Maradoun village to Mai Goge, 1984.
9. 1 family from Daba village to Mai Goge, 1984.
10. 6 families from Denge village to Mai Goge, 1984.
11. 1 family from Daba village to Mai Goge, 1986.
12. 2 families from Daba village to Mai Goge, 1988.

Figure 7.2: Migration to Mai Goge Village, 1953-88

Magami. They were eagerly awaiting the opening of the new road to Gusau.

Mai Goge

About ten families in Mai Goge are 'yan kasa who said that they or their forebears had been living at or near this site for the past 50 years. The other families are immigrants from the north.

The first influx occurred during Muda (Figure 7.2). In much the same way as their Dan Gurgu counterparts, five families migrated on foot from Denge, a large village south of Sokoto city. Because of their agronomic success in Mai Goge, they have never considered returning.

Only three incidents of immigration occurred in the years between Muda and the early 1970s. Two families arrived from Unguwar Gwandu as this settlement was disbanding. The other migrant, a man of undetermined civil status, arrived from Bankano, a Zarma village located north of Sokoto.

During bazara 1974 a total of 13 families headed by five senior men and eight married sons migrated in distress from Daba village. The most senior member of this group recounted the events of a most difficult phase of their lives.

The harvests of 1971 and 1972 had been extremely poor, and 1973's a total failure. Severe emotional stress was pervasive ("hankali ya tashi"). All livestock had been sold or slaughtered. Many in the group pawned (jinga) their

farms. The proceeds were enough to pay for motorized transport all the way to Dansadau. Three elders in the group knew this area well from previous seasonal migrations.

In Mai Goge they were allocated recently fallowed farms for the 1974 agricultural season. The younger men worked as wage laborers while their fathers and grandfathers prepared this land. They did not realize good crop yields until two years later, when they were able to clear lands that had been under much longer fallows. Most families in this group had been self-sufficient since 1976. Their 1984 yields, however, were approximately 30-40 percent of what they had considered normal. Some men did wage labor to feed their families. Nonetheless, one household head had secured oxen and a plow for the 1988 farming season.

Several years after their arrival, some household heads returned to Daba either to sell the farms that they had pawned or to reclaim and give them to relatives. Only two of the thirteen refugee families returned definitely to Daba, one after one farming season and one after the second harvest in 1975.

These 13 immigrant families were joined by one other family from Denge in 1974. A young divorced man also arrived at about this time. Six years later a family migrated from Warau, and another from Magami.

Buhariyya caused an influx of eight families in 1984. One family migrated from Daba, and one from a village near Maradoun. For six families Denge was again the village of

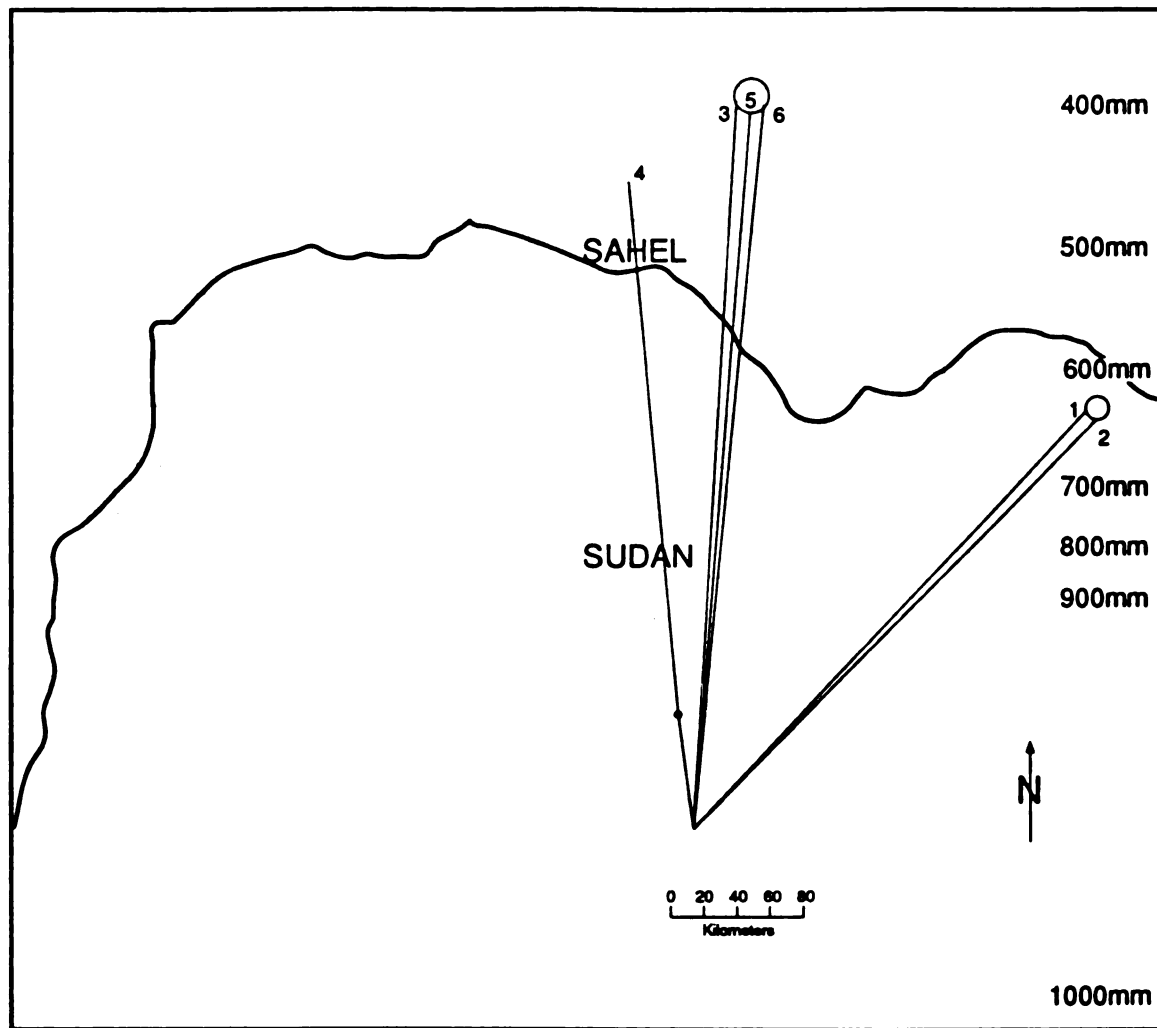
origin. Three of these families returned after one farming season, one after two years, and one in 1989. When asked why the five families returned, the interview participants responded that they had achieved prosperity in Mai Goge, and the famine had ended ("Sun samu wadata nan; yunwa Buhariyya ta wuce"). Three more families migrated from Daba during the later half of the 1980s.

The people of Mai Goge suffer from a lack of good wells. A few people are reportedly infected with guinea worm. Efforts to dig new wells have met with limited success. In the informants' view, only mechanized well-digging would result in adequate and totally safe water. Insects have ruined cotton in the past, so farmers are reluctant to plant this crop. Chemical fertilizer is what they want most. They also envision being able to produce copious dry season crops if a small dam were constructed.

Babban Doka

Babban Doka was established by a group of 'yan kasa whose forebears were originally from Kwiambana. The village's founding c. 1963 was in effect the last movement these families made to catch up with their farms. Because of the increased population density in the general vicinity, a future shift in the settlement's site would not be possible.

Babban Doka has a very small Saturday market. A large depression is the major source of water, which is foul-smelling and nearly black in color. Although guinea worm is



1. 6 families from village(s) near Daura, c. 1973-74.
2. 7 families from village(s) near Daura, 1984.
3. 10 families from Dakoro (or villages near), 1984.
4. approximately 10 families from 'Yar Wurno village to Magami 1973; one of these to Babban Doka, 1986.
5. 6 families from Dakoro (or villages near), 1987.
6. 2 families from Dakoro (or villages near), 1989.

Figure 7.3: Migration to Babban Doka Village, 1973-89

reportedly not a problem, good wells would certainly improve the quality of life.

According to the 'yan kasa elders, the first influx of northerners – six families from a village or villages near Daura – occurred during the early 1970s famine (Figure 7.3). The next wave of immigration did not take place until Buhariyya. This included seven more families from Daura, and ten families from the Dakoro area of Niger. By 1985 the immigrants outnumbered the 'yan kasa.

An interview with four Nigerien household heads was facilitated by H, the son of the village head of Mai Tukuniya (Gobirawa), a large settlement established in 1974 by refugees from the Dakoro area. The interview was nevertheless a rather guarded one.

The 1984 harvest was a total failure, and pasture nearly non-existent. All small livestock were sold to purchase food. One goat amounted to two kwano (5 kilograms) of grain. Cattle simply died. No one would buy them. The men laughed when asked if they had sold their farms. Only an insane person would buy them in a year of extreme drought and dearth. Moreover, the Dakoro area has considerable uncultivated bushlands. They had no choice but to migrate. The four elders related that they had not been nearly as desperate during the early 1970s. Cattle sales accomplished early enough resulted in fair quantities of grain, and the wild legume anza was abundant.

The families were certain of their final destination because they knew refugees from the Dakoro area who had settled in Dansadau District a decade before. In September or October, 1984, they set out with their donkeys and a few belongings for Jibiya, a town in extreme northern Katsina State, Nigeria. Here they sold their donkeys to raise money for motorized transport. Upon reaching Magami, three family heads traveled alone to Dansadau. After making arrangements to settle in Babban Doka, they returned to Magami for the rest of the group.

The teen-aged men supported their families through wage labor and by cutting and selling firewood. The older men built temporary shelters, cleared land, and manufactured wooden mortars for sale. Yields in 1985 were very small. One informant reported harvesting 20, and another 40 bundles of grain. The next year was better. The man who harvested 40 bundles in 1985 harvested 80 bundles and two sacks of peanuts in 1986. Regarding self-provisioning, the group related that "some" of the ten refugee families were capable of feeding themselves from their own production for an entire year. Their compounds now comprise sturdily constructed clay brick rooms. Several have clay brick walls instead of sorghum stalks, and at least one has an entrance room (zaure).

Another family joined their group in 1986. This family was one of approximately ten that emigrated from the Dakoro area during the early 1970s famine and settled in a section

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of Magami. The family head stated that after more than ten years in Magami, he had never been able to accumulate enough capital to purchase farmland. His farms had always been rented (sunfuri), and occasionally he was able to earn money through involvement in the long-distance trade in donkeys. By migrating to Babban Doka and clearing land, he now has a comparatively large farm that he can call his own.

Six more families migrated from the Dakoro area to Babban Doka after the poor harvests of 1987. Two families followed in 1989.

According to both the 'yan kasa elders and the four former Nigerien refugees, no northern immigrants have ever returned home from Babban Doka.

'Yan Sawaiyu

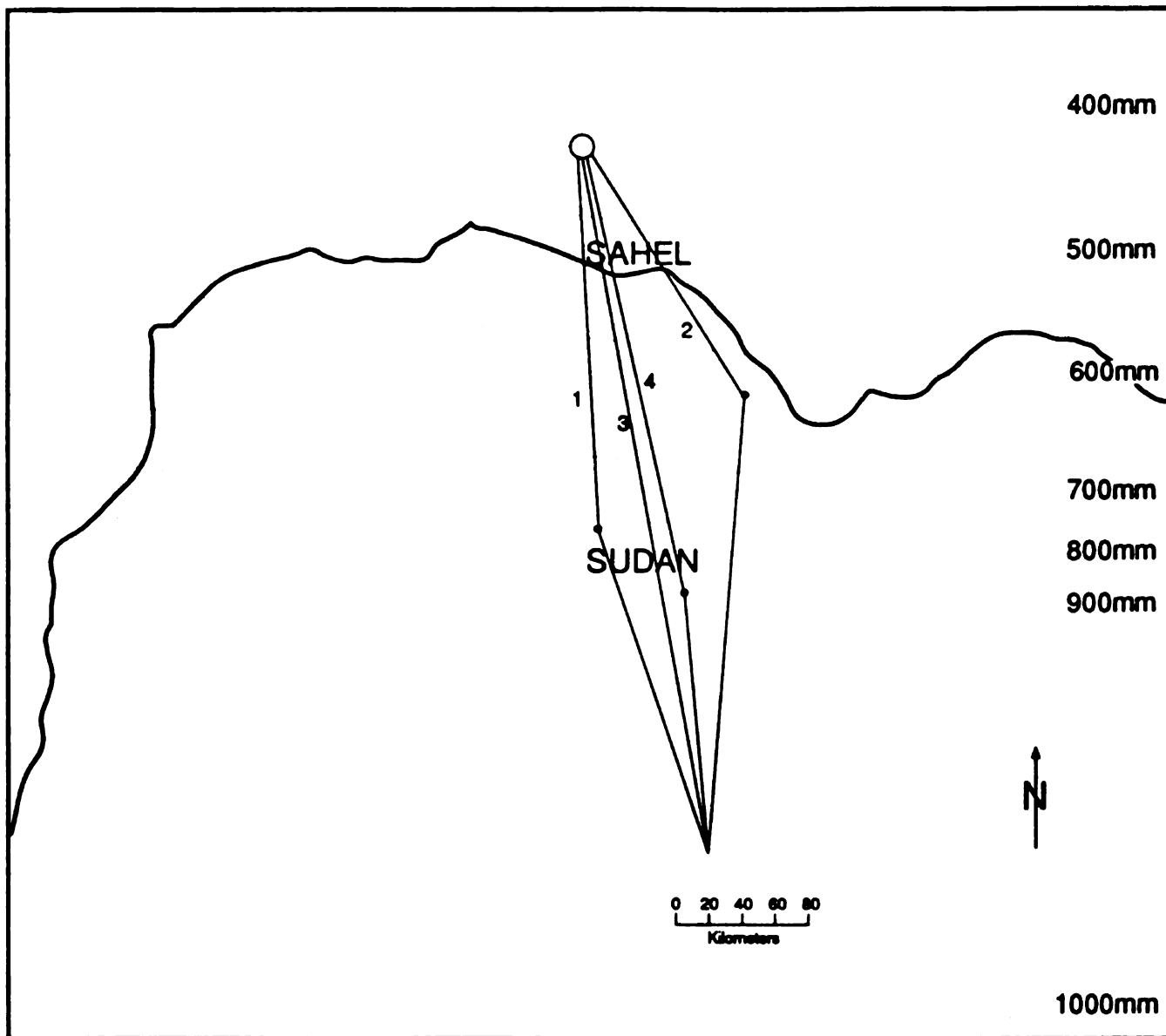
'Yan Sawaiyu was founded in the early 1950s by a group of 'yan kasa originally from Mutumji. It is their third and most recent settlement. The 'yan kasa have not been motivated to move in nearly 40 years because the present site is in general a favorable one. 'Yan kasa elders stated that no land shortage exists, and fallows have been adequate. Flooding, the bane of their previous site, is not a problem because 'Yan Sawaiyu is situated atop a hillock. But water for domestic purposes is sometimes in short supply. Before 1980 farmers were cultivating onions during the dry season. Progressive desiccation of lowland areas and marketing difficulties related to poor transport led to the abandonment of this endeavor. With the opening of the

new road dry season farming would again be attractive, but relatively deep wells would have to be sunk in the laka lands.

An estimated 50 of 'Yan Sawaiyu's 150 household heads are immigrants. An influx of at least three families occurred as a consequence of Muda. Most of the other migrants arrived in the early 1970s and during Bhuariyya.

The second interview in 'Yan Sawaiyu was with a group of Nigerien Buzu and Gobirawa refugees from the 1983-85 drought and famine. The assistance of H, the gentleman from Mai Tukuniya, was crucial. Nonetheless this interview was characterized by the same tentativeness as the one with the Nigerien refugees in Babban Doka.

The refugees are originally from a village or villages located between Madoua and Bouza. The largest group, consisting of seven families, migrated directly from Niger in November or December 1984 (Figure 7.4). The drought had been excruciating. Harvests were total failures. In the early 1970s these families still had arziki (wealth) in the form of stored food and greater livestock holdings, and support from relatives was forthcoming. But most years from 1974 to the early 1980s had been poor for agriculture. Both arziki and the support of kinsfolk had become attenuated as the 1980s drought and famine struck. Moreover, their farmlands had been reduced to fako (hard, rocky soil) by winds deflating the rai-rai (sandy stratum). The thought that anyone would buy these farms was risible.



1. Approximately 10 families migrated 1973, established village of Nasarawa (near Bakura village, Talata Mafara LGA); 3 of these families migrated 1984 to Mutumji (18 km north of Dansadau), then migrated 1985 to 'Yan Sawaiyu.
2. 1 family migrated 1982 to Mashema village; together with one other family migrated 1984 to 'Yan Sawaiyu.
3. 7 families migrated to 'Yan Sawaiyu, 1984, 1 family early 1985.
4. 1 family migrated 1984 to Ruwan Dora, migrated 1985 to 'Yan Sawaiyu.

Figure 7.4: Nigerien Refugees' Migration to 'Yan Sawaiyu Village, 1984-86

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With donkeys and a few goats the seven families set out for Dansadau District, where one of its members had previously done harvest work. The entire 350-kilometer journey was completed on foot or donkeyback in 17 days. The goats were either eaten or sold to procure small quantities of food. Another family migrating directly from Niger on foot joined them two or three months later.

Two families also arrived in late 1984 from Mashema. One of these families had migrated from the Madoua/Bouza region to Mashema in 1982.

Another group of three families migrated after the 1984 harvest from Nasarawa, one in a cluster of villages established in Talata Mafara Local Government Area by Nigerien Buzu during the 1972-74 famine. They had been among the approximately ten founding families. An elder of this group cited three causes of their migration: poor harvests, land shortage, and immigration to Nasarawa of more people from Niger in 1983 and 1984. The three families spent the 1985 farming season near Mutumji, moving on to 'Yan Sawaiyu after that year's harvest. Another family arrived in 1985 after several months residence in Ruwan Dora village.

Before their first harvest, all of the refugees relied extensively on agricultural wage labor. Many were able to keep their donkeys, and were thus able to earn important cash incomes by cutting and selling firewood. Some refugees

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in the group acknowledged receiving assistance from the 'yan kasa residents of 'Yan Sawaiyu.

The informants insisted that "most" members of their group achieved food self-sufficiency after their first farming season, and that all of them were self-sufficient after the second year. Compounds in their section of the village consist of clay brick rooms and sorghum stalk enclosures. One household head from among the three families that migrated from Nasarawa has acquired oxen and a plow since arriving in 'Yan Sawaiyu.

After four farming season, one refugee family returned to Niger and another to Mashema.

Mai Tukuniya (Gobirawa)

Mai Tukuniya was founded in May or June, 1974, by 13 refugee families from Dakoro or a village in its vicinity (Figure 7.5). Interviewing in Mai Tukuniya was often difficult. The following account of famine, migration, and recovery is based on group interviews that were sometimes energetic and incisive, on the testimony of six household heads who agreed to be interviewed individually, and on informal discussions and direct observations.

Mai Tukuniya must be considered a successful settlement. In the years since the early 1970s famine, it has served as a refuge for and offered opportunities to other Dakoro people. Four families joined the settlement in 1976. Reportedly as a result of harvest failure, five families immigrated in 1983. The disastrous drought and

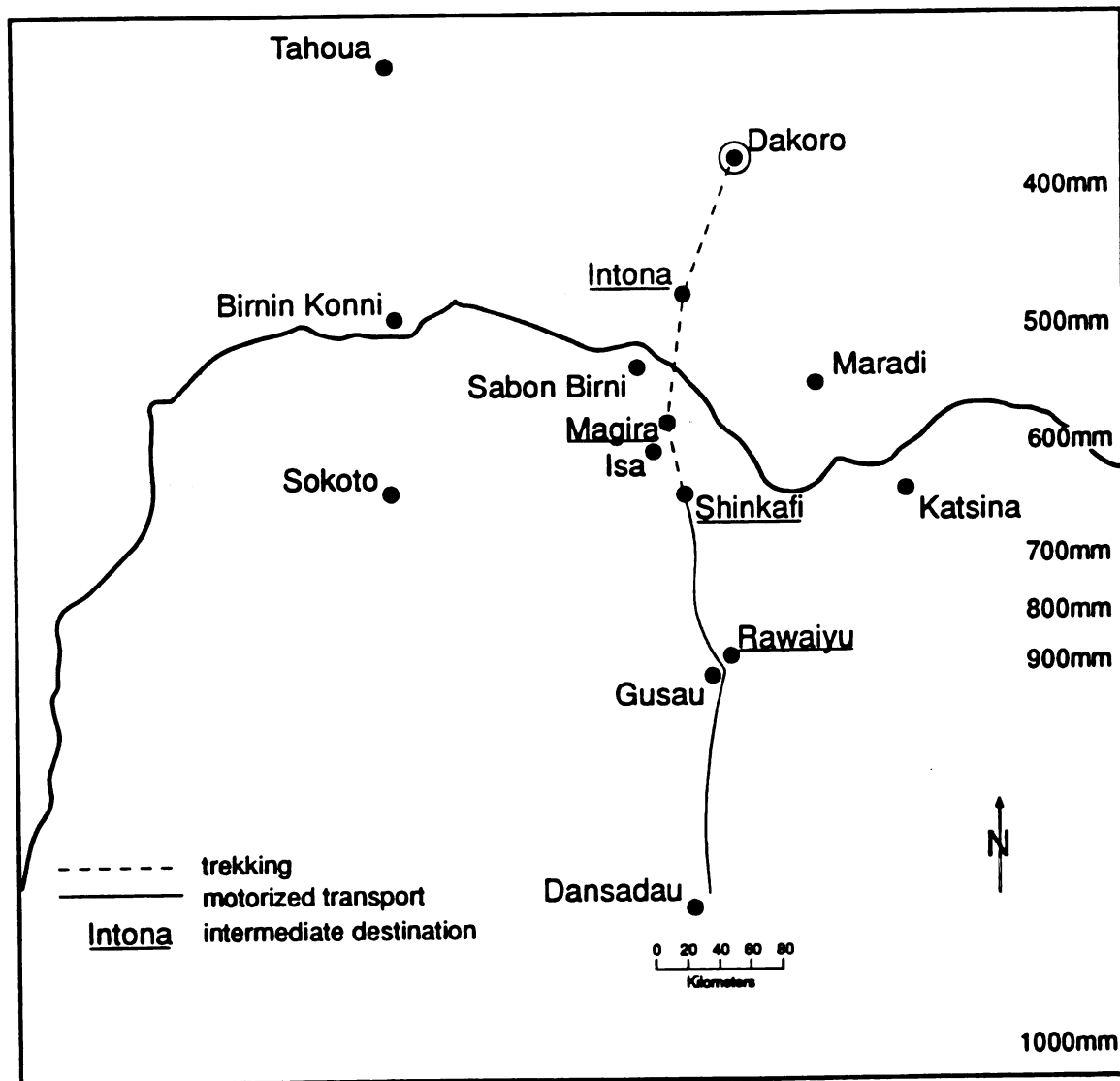


Figure 7.5: Migration of the Dakoro Refugees, 1973-74

famine of 1984 caused an influx of 36 families from the Dakoro area. An additional six families arrived after locust attacks and poor harvests in 1989. Only two families – both from among the original 13 refugee families – have ever returned definitively to Niger.

Informants claim that nearly all Mai Tukuniya farmers are self-sufficient in grains, and that many produce surpluses for sale or for export to relatives in Dakoro. In late November, 1990, approximately 20 Dakoro people were visiting in Mai Tukuniya. Harvests had been poor at home. To compensate, many of the visitors were working on relatives' farms to earn grain or cash. Peanuts are the most important cash crop. During one afternoon in Mai Tukuniya a lorry bound for Kasuwan Daji (a large agricultural market to the north of the study area) was being loaded with sacks of peanuts and grain.

All habitations consist of clay brick rooms enclosed by sorghum stalks. The wells are good. Many, if not most, Mai Tukuniya families own livestock, including cattle. Ten plows and oxen have increased the size of the village's farms, and four camels provide opportunities for cash incomes. Because of the new road to Gusau, farmers were planning to begin dry season cultivation during 1990-91. One of the founders of Mai Tukuniya has been loaned a gasoline-fuelled grain processing machine by a wealthy man from Dansadau.

Mai Tukuniya's 13 founding families faced three years of hardship and death before achieving relative prosperity. In their village of origin, as in most of Niger, the 1972 rainy season was extremely poor; by August people had realized that the harvest would be a near-total failure. A preponderance of the livestock were slaughtered and the meat eaten. The sale of a few goats provided exiguous quantities of grain. Farmers planted melons (guna), which took two months to mature. In the meantime people began relying extensively on anza, a wild legume that "Allah had made plentiful that year." Supplies of this legume and other wild foods in the village's immediate hinterland were soon depleted. Some household heads decided to close up their compounds and take their families out into the bush, where they gathered large quantities of anza.

Wild foods and melons provided sustenance up to the planting season of 1973, at which time they began sporadically to receive food aid. But the quantities were never sufficient, and distribution was irregular and uneven.

The 1973 rainy season was worse than the previous year's. Melons would not grow. Forays into the bush in search of wild foods went unrewarded. Only a few goats remained. No one would buy their farms because this area has extensive uncultivated bushlands. In August the 13 household heads took the decision to begin hijira (a religiously sanctioned search for refuge). The most fortunate was able to borrow a camel, several others still

owned donkeys, but most of the people had to walk. After three days traveling southward the refugees reached Intona, a village where some had relatives with food to share (Figure 7.5). They remained here for nearly six months, collecting firewood and fodder and taking advantage of occasional opportunities for wage labor. Women and children were sent out for kala, an effort to glean poor quality crop remnants. At Intona an undisclosed number of refugees died.

By January 1974 food was becoming even more scarce and opportunities for work were dwindling. Intona had no surplus cultivable land, so remaining there to farm during the 1974 rains was never a possibility. The only option was to migrate farther south.

After a few days the refugees reached Magira, a village northeast of Isa in Sokoto State. Neither work, nor lodging, nor surplus farmland was available. The village head gave them permission to do kala, and offered what was to prove extremely important advice: Go to Dansadau District, where fertile farmland is abundant and available.

The next stop in the Dakoro people's hijira was Shinkafi, where they appealed to the traditional ruler of the town for food. Sarkin Shinkafi gave them masa (millet pancakes), but admonished them to press on as the refugees already in Shinkafi were too numerous for him to support.

The group had managed to accumulate enough money for motorized transport for some of its members. The men with donkeys and the man who had borrowed the camel continued on

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foot or riding these beasts of burden. Their next destination was Rawaiyu, near Gusau, where they were to stay four months. For the first few days they lived in shelter available at or near the market. The group then moved to makeshift shelters on the edge of town. Here the refugees' most important occupations were portering and the collection and sale of firewood. Incomes must have been meager.

In April or May, 1974, two senior household heads embarked on an exploratory trip to Dansadau. They were five kobo (ten U.S. cents) short of the round-trip taxi fare, so they had to negotiate with a lorry driver for their return to Rawaiyu. In Dansadau the men arranged for an audience with Sarkin Kudu, the district's traditional ruler. Without delay or difficulty the Sarki designated a site for the refugees' village and a karkara (farming area) that supposedly did not include any fallow land claimed by 'yan kasa. Shortly thereafter the group completed its hijira.

The exacting task of land clearing was the men's responsibility. Women undertook agricultural wage labor and sold firewood to feed husbands, adult sons, and children. The people lived in lean-tos or huts; compound construction would have to wait until the dry season. Yields that first year were very modest: four of the individual informants harvested a total of 106 bundles of grain in addition to peanuts and cotton, which they sold to purchase food. Firewood collection and sales, donkey portering, and wage labor sustained the settlers until the 1975 harvest, after

which they achieved self-sufficiency in staple foods. The wives of four of the six individual informants later began farming on their own account.

Only one of the 41 adult men who migrated to Mai Tukuniya during Buhariyya (1983-85) agreed to an individual interview. This man's 1983 harvest in Niger amounted to only four bundles of grain. He undertook his usual seasonal migration to Lagos, where his earnings as a manicurist, a market porter, and a water carrier enabled him to send money home to his family. He returned to plant in 1984. When his millet crop was about knee-high, the rains stopped. After more than a month without a substantive rain even, he left for Lagos where he again found work. In October, 1984, he learned from a townsman who had just come to Lagos that his family and many of his relatives had migrated to Mai Tukuniya. Shortly after hearing this news he left to join them.

Upon arriving he found that his family and relatives had built two garka (a kind of shelter made of grain stalks), one for women and the other for men. The village head designated a section of uncultivated land for him and two male relatives, which they proceeded to prepare for the 1985 farming season. During this time one of the men would do wage labor while the other two cut bush. This gandu's 1985 harvest was only 33 bundles of grain. They had to rely again on local wage labor and seasonal migration, but were able to build clay brick rooms after this first harvest.

Self-sufficiency was achieved in 1988 with 80 bundles of grain and grain purchased with proceeds from the sale of peanuts.

The available testimony from individuals suggests that before their hijira the refugees were not people of uncommonly high socioeconomic status. The village head's source of non-farm income was selling kayan koli (small wares) at local periodic markets. His son frequently did wage labor and went on seasonal migrations. Another household head interviewed individually cited bokanci (traditional medicine and sorcery) as his occupation. The informant who was loaned the grain processing machine had been involved in marketing. The man who borrowed the camel stated that livestock rearing (kiwo) was his only economic activity apart from farming. (His livestock in Mai Tukuniya have become so numerous that he has had to move his compound some 200 meters away from the main settlement.) Seasonal migration and wage labor were the only sources of cash income for the man who arrived in Mai Tukuniya in 1984. Only two of the six individual informants stated that as adults in Niger they had hired agricultural wage labor but never undertaken it themselves.

A Neighborhood in Dansadau Village

Another group of Nigerien refugees achieved prosperity in Dansadau without death. Their story was recounted in two interviews with two senior household heads from this group. Informal conversations with other Dansadau residents and

direct observations confirmed much of the following narrative.

The 1970 and 1971 harvests had been very poor in Maraka, a village just across the border from Jibiya (Katsina State, Nigeria). The harvest of 1972 was reportedly a total failure. People liquidated livestock and other assets. Hanza was not abundant, and only relatively small quantities of other wild foods were available. Food aid was inadequate.

By the beginning of bazara (c. March) 1973, the suffering and deprivation had become intolerable. M.S., a successful carpenter with patronage ties to traditional rulers, presented a plan for migration and offered to assist a group of relatives and neighbors. Thirteen household heads accepted. M.S. never doubted that Dansadau would be the group's final destination. He had detailed information about the district through his interaction with Fulani and Buzu pastoralists.

The journey was completed in only two days, with stops in Kaura Namoda and Gusau to change vehicles. M.S. paid the fares for many of the people.

In Dansadau, Sarkin Kudu delimited a karkara and designated a plot just behind his palace as the refugees' neighborhood. Traditional construction work and agricultural wage labor were the mainstays of the group's subsistence for two and one-half years. They had no donkeys to use in collecting firewood or for portage. Their

harvests in 1973 and 1974 were small but important. Food stocks gave them time to work on their own account, building compounds and clearing additional farmland. Most families became self-sufficient in grains after excellent harvests in 1975.

None of the former refugee families has a plow and oxen. The two elders suggested that their group's livestock holdings are probably less than half of those owned by the Mai Tukuniya people. On the other hand they have been successful in developing vegetable gardens, which produce a large proportion of the okra, peppers, cocoa yams, and cassava for sale in Dansadau's Friday market. M.S. has an impressive guava orchard.

The Maraka refugees departed before the 1973 rainy season, one that would be at least as bad as the previous year's. Thanks to the leadership and support of M.S., they had a clear objective and the means to get there quickly, and were therefore able to avoid the rigors of trekking and the health hazards of spontaneous refugee encampments. They had to endure more than two years of hardship in Dansadau, but all members of the group survived. According to the informants, news of good harvests motivated four families from their group to return to Maraka. This suggests that they had maintained rights to their farms.

Nasarawa (Rugan Fulani)

In late 1987, 12 families migrated to Dansadau District from Jari (or alternatively, Ba Mu Dan Jari), a village east of Maradi, Niger. They are known locally as dabawa, a pejorative term for Fulani people who do not have cattle. The following narrative summarizes an interview with two household heads in Nasarawa/Fulani, the settlement they established near the 'yan kasa hamlet of Nasarawa. Some elements of their story were corroborated by information gathered during an interview with these 'yan kasa.

The two Fulani men related that before the 1970s they were semi-sedentary agro-pastoralists. As the rainy season progressed, younger men moved gradually northward with their herds toward the Agadez region, while elders remained at their maskekari in Jari to farm. After the harvest livestock were brought back to the Maradi area to graze on crop stubble.

The early 1970s famine was devastating. All of their cattle reportedly died, and small livestock holdings were liquidated in order to purchase grain. The Jari people received weekly allotments from a food distribution center in Maradi, but these had to be supplemented with the wild legume anza and with food procured from earnings from occasional wage labor.

The group was never again able to acquire cattle. Sheep and goats obtained in the years after the famine were never numerous enough to necessitate northward treks into

the Sahara during the rains. Farming and wage labor formed the foundation of their livelihood.

The hardships of Buhariyya were worse because people had fewer small livestock and other belongings to sell. The 1984 harvest was a total failure. Local wage labor was again important. Government food aid was more abundant and better distributed than during the early 1970s, yet people skipped meals for two or three consecutive days. Men from this group traveled to Jibiya (northern Katsina State, Nigeria) to buy sacks of grain bran. The leaves of the aduwa tree and kauci, a tree parasite, were two other alternative foods cited. Some individuals in Jari reportedly died from eating sawdust.

Harvests in 1985 were good, but the informants viewed 1986 and 1987 as a continuation of the 1983-84 drought. Not even tumu, the few early ripening grains usually available for roasting, were harvested in 1987.

Several men, including one of the informants, set out for Nigeria to look for work. In Gusau they learned that in Kasuwan Daji men are often hired to load lorries. Here they got a piecework job for ₦20, but no other work was immediately available. They were told that better opportunities existed in Dansadau. The money they had saved paid for motorized transport only as far as Magami. They covered the remaining 50 kilometers on foot in two days while eating newly matured peanuts taken from farms along the roadside (a religiously sanctioned practice).

In Dansadau they got one month's work. More important, their employer, a relatively wealthy man, suggested that they could begin farming the next year on a large parcel of his land that had been lying fallow for the past 20 years. He also promised to give them several sacks of grain. When they went back to Jari for their families, other household heads decided to accompany them on their return to Dansadau.

Some members of the group did wage labor while others cleared land. Yields in 1988 were modest. One of the informants harvested 36 bundles of grain and two sacks of peanuts. Wage labor continued to be necessary. The 1989 harvest was much better for this informant: he became self-sufficient with 80 bundles of grain and 20 sacks of peanuts. The other informant declined to declare his yields, but indicated that he was not self-sufficient because of his numerous dependents.

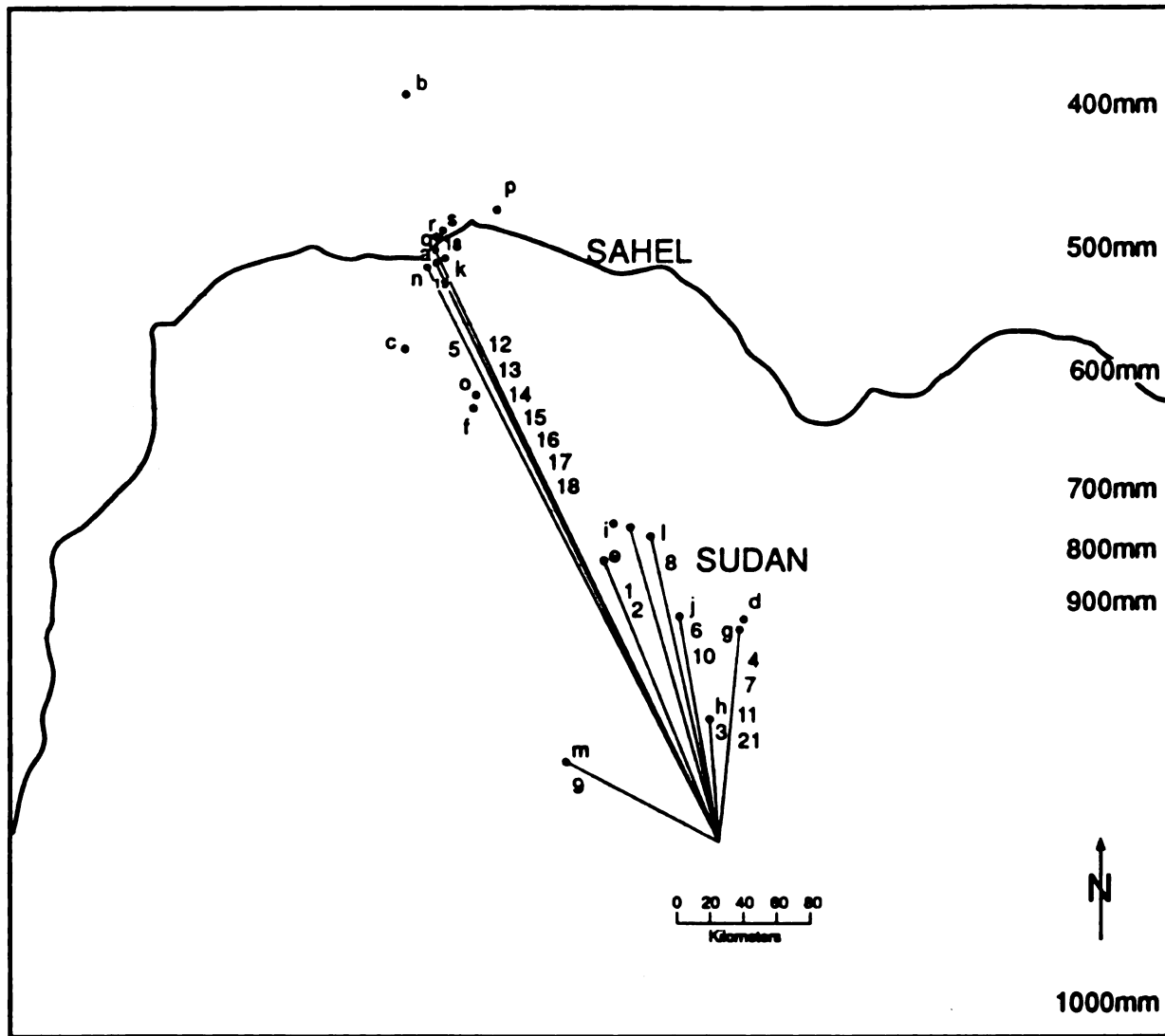
The Fulani have not constructed shelters of clay bricks. Their habitations are instead low huts made of sorghum stalks (ruqa). They are resigned to returning to Jari should their patron reclaim his land. They did not sell their farmland. According to the informants, news of good 1988 harvests in Niger inspired five families to return to Jari in November or December of that year.

Maganawa: Refugees and Pioneers

The village of Maganawa was founded during Buhariyya. Some of its residents are pioneers. Others are refugees. Several families have been both. Most of the pioneers migrated from areas near Gusau, and are referred to in the following discussion as "southerners." The refugees are from villages not far to the east of the Sahel study villages, and are referred to henceforth as "northerners." This section is based on information gathered from a series of group interviews and from lengthy interviews with 21 of the village's 24 senior household heads.

A and D, Maganawa's founders, migrated from Sabon Gari Dutsen Kura in April 1984 (Figure 7.6, #s 1 and 2). Both men had had disappointing 1983 harvests. But the immediate motivation for their decision to migrate was the "destruction" of D's best farm by a freshet that followed an unusually heavy early season storm. In anger and frustration, D announced that he was leaving. A replied that if this were true, then they would go together. Dansadau District was a natural choice. The two men had been there before, and D's wife had grown up in Dansadau village.

Their migration entailed little in the way of deprivation and suffering. A and D hired space in a lorry, which they loaded with 15 50-kilograms sacks of grain and all their household possessions apart from their livestock. These they left with relatives. After meeting with Sarkin



Key: a) Kawadata, b) Dulunhu, c) Gwadabawa, d) Gusami, e) Sabon Gari Dutsen Kura, f) Rabah, g) Dogon Dai/Wanka, h) Magami, i) Talata Mafara, j) Ruwan Bore Jagindi, k) Marmaro, l) Jihiya, m) Dankurmi, n) Warau, o) Riji, p) Dogarawa, q) Kadadin Buda, r) Mozage, s) Malbasa, t) Ajuma.

1. migration from (a) to (b) c.1963; migration to (e) 1973; migration to establish Maganawa, April 1984.
2. migration from (c) to (d), c.September 1965; migration to (e), 1966; migrated to establish Maganawa, April 1984.
3. migrated with family as a child from (f) to (g) 1930s; migrated to (h) 1974; migrated to Maganawa c. May 1984.
4. migrated with family as a child from (i) to (j) 1940s; migrated to (g) c.1965; migrated to Maganawa c.May, 1984.
5. migrated from (n) to (e) 1974; returned to (n) from (e) after death of 4 children 1981; migrated from (n) to Maganawa c. May 1984.
6. migrated from (k) to (j) 1973; migrated to Maganawa c.October 1984.
7. migrated from (g) to Maganawa c.October 1984.
8. migrated from (l) to Maganawa c.April 1985.
9. migrated from (l) to (g) c.1978; migrated to (m) 1984; migrated to Maganawa 1985.
10. migrated from (j) to Maganawa c.November 1984.
11. migrated with family as a child from (a) to (g) 1930s; migrated to Maganawa c.November 1984.
12. migrated with family as a child from (p) to (q) 1910s or 1920s; migrated from (q) to Maganawa c.August 1984.
13. migrated from (q) to Maganawa c.October 1984.
14. migrated from (q) to Maganawa c.October 1984.
15. migrated from (q) to Maganawa c.November 1984.
16. migrated from (q) to Maganawa c.November 1984; seasonal migration to Ibadan; return to Maganawa c.April 1985.
17. seasonal migration to Ibadan c.July 1984; migration from (q) to Maganawa c.April 1985.
18. migrated from (q) to (r) c.1970; migrated from (r) to (s) 1974; migrated from (s) (via q) to Maganawa c.November 1984.
19. migrated from (a) to Maganawa c.January 1985.
20. migrated from (t) to Maganawa c.September 1985.
21. migrated from (g) to Maganawa c.April 1989.

Figure 7.6: Migration to Maganawa Village, 1984-89

Kudu and offering a nominal tribute (goron godiya), they received permission to clear land and establish a settlement. The pioneers lived in makeshift shelters while preparing land for the 1984 agricultural season. They did not have to rely on wage labor to feed themselves and their families, nor did they hire laborers.

Both men had migrated before. D's migration from Gwadabawa town was prompted by flooding and harvest failure in 1965 – the triggering episode of Mai Zobe. In c. 1963 A, then a young man, migrated for unspecified reasons from his natal village of Kawadata (near Gada, Nigeria) to Dulunhu, a village in Adar, Niger. During the 1973 famine he emigrated with his family to Sabon Gari Dutsen Kura, where he became friends with D. The men reported that here they had produced cash crops and achieved self-sufficiency in grains on farms they had cleared from uncultivated bushlands.

Three household heads joined the incipient settlement a month later. A W's migration in the mid-1970s from Dogon Daji/Wanke to Magami was related to his divorce and re-marriage (Figure 7.6, #3). He was never able to purchase farms in Magami, and the cost of renting them was becoming prohibitive. The prospect of clearing and owning farms in Maganawa was an attractive one. L had lived and farmed in three places before migrating to Maganawa in May 1984 (Figure 7.6, #4). His yields of sorghum in Dogon Daji/Wanke had been reduced by poor late season rainfall in each of the three previous years. Land shortage and decreasing soil

fertility also contributed to his decision to migrate. He arrived on foot with a donkey and small livestock.

Z also migrated to Sabon Gari Dutsen Kura after paltry harvests in Warau during the early 1970s (Figure 7.6, #5). With two farms that he was able to purchase there, he became nearly self-sufficient in grains while producing moderate quantities of peanuts and cotton. Z attributed his return to Warau in 1981 to the deaths of four of his children. His yields from the 1981-83 farming seasons in Warau never exceeded 30 bundles of grain. Seasonal migrations to Ibadan and Sabon Gari Dutsen Kura were the basis of his livelihood. His migration to Maganawa was at the urging of A, whom he had met during his years in Sabon Gari Dutsen Kura. Z must have had cash savings, for he paid an unspecified sum for farmland that had been partially prepared.

G was the first migrant from Kadadin Buda, and the first who could be considered a refugee (Figure 7.6, #12). In his view 1984 had been the ninth consecutive drought year. His farms in Kadadin Buda yielded only 15 bundles of grain in 1983, and in August, 1984, when his crop looked to be a near-total failure, he resolved to migrate. As was the case with all of the other northern migrants, he completed the entire 350-kilometer journey by motor vehicle. In Maganawa G constructed a makeshift shelter, cleared a parcel of land, and planted cowpeas. He then returned to Kadadin Buda to collect some of his family members. His son and gandu partner came with his family to Maganawa about two

months later after working in Ibadan for most of the 1984 rainy season (Figure 7.6, #15).

G's son was one of ten household heads who migrated to Maganawa during the immediate post-harvest period (October-November) of 1984. Two of the four informants from the more southerly settlements migrated on foot with donkeys, small livestock, and a few sacks of grain (Figure 7.6, #s 7 and 11). Their families came about two months later when land clearing was well underway and after shelters had been constructed. Another southerner arrived with his family by motor vehicle (Figure 7.6, #10). These household heads cited land shortage and poor 1983 and 1984 yields as motives for migration. H stated that abundant land and the potential for growing sugar cane were the reasons he and his family came to Maganawa (Figure 7.6, #6). However, his migration after the 1973 harvest to Ruwan Bore Jagindi was in response to the hardships of drought and famine.

All of the household heads who migrated directly from the north (Kadadin Buda and Malbasa, Niger) in the 1984 post-harvest period did so as a consequence of total or near-total harvest failures and food shortages (Figure 7.6, #s 13-15 and 17-18). The average 1984 yield for these five informants was 13 bundles of grain. Harvests in 1983 had been only marginally better for three informants. Two men, however, reported that their 1983 yields had been sufficient to provision their families up to the start of the 1984

rainy season. Only one of these northern migrants had previously lived and farmed elsewhere (Figure 7.6, #18).

Two informants and their families joined the settlement during the early months of 1985. One of these, a kinsman of A, one of Maganawa's founders, migrated from Kawadata village after helping his relatives prepare fadama lands for onion cultivation (Figure 7.6, #19). Another informant migrated directly from Kadadin Buda after having returned there from dry season migration to Ibadan (Figure 7.6, #16). Both of these northern migrants reported near-total harvest failures in 1984.

The informant who migrated from Dankurmi later in 1985 related that he was used to bulagoro (frequent travels) and had decided to come to Maganawa after hearing of the availability of farmland (Figure 7.6, #9). The inundation of farms caused by dam construction was the motive for one informant's migration from Aljuma village (Figure 7.6, #20).

Two incidents of immigration occurred in 1989. One informant brought his family from Dogon Daji/Wanke in April to join his father. Another man, originally from Kawadata, had spent nine years trading and farming near Zaria and 18 years employed as a chauffeur in Kano before coming to Maganawa in May. He used ₦3,000 to pay laborers to clear and prepare farmland. A few months later he was able to borrow ₦10,000 in order to procure a grain-processing machine, which is now used to prepare sorghum and millet

surpluses for sale. He has dreams of becoming wealthy through cash crop production and dry season agriculture.

Six incidents of return migration were recounted in group interviews. The people involved were perceived to have been refugees from the hardships of Buhariyya. Two families from Dan Tourau village (near Maradi, Niger) and two families from Dogarawa village (near Birnin Konni, Niger), returned after two farming seasons. One family from Kadadin Buda also returned after two farming seasons, while another from this village stayed for five years.

Migrants' Status in Villages of Origin

The available data on migrants' farm holdings prior to Buhariyya are presented in Table 7.3. The northern migrants' average of two upland parcels suggests that they were not especially well endowed in land resources for rainy season cultivation. More significant is the paucity of this group's fadama holdings. (Six informants did not have access to this type of farmland.) The migrants from the southerly villages had more fadama farms. The agronomic potential and perhaps also the size of their upland farms were probably greater than those of the northerners. About one-half of the informants from each group acknowledged having hired agricultural labor at some point in their villages of origin.

The sources of income listed in Table 7.4 indicate that the migrants were not particularly wealthy or even "middle class" men. No northern household heads were involved in

Table 7.3: Maganawa Informants' Farmland Holdings in Villages of Origin Prior to 1983-85

	"Southern" Migrants N=11 f	"Northern" Migrants N=9 f
Total Number Upland Farms Cultivated	19	18
Average	2.1	2
Total Number Fadama Farms Cultivated	9	3
Average	0.8	0.33

Table 7.4: Maganawa Informants' Income Sources c. 5 Years Before Departure

	"Southern" Migrants N=11 f	"Northern" Migrants N=9 f
Sell Cash Crops/Fadama Crops	9	3
Seasonal Migration	5	7
Marketing	2	
Long-Distance Trade	1	
Koranic Teaching	2	1
Agricultural Wage Labor	1	3
Animal Skins Trade	1	
Tailoring	1	
Meat Selling	1	
Barbering	1	
Security Guard		1
Smithing		1
Wood Carving		1
Cooked Cassava Sales	1	
Firewood Collection and Sale	1	
Snake Charming	1	

marketing or long-distance trade; a majority had practiced dry season migration. As a group the southerners appear to have been less dependent on seasonal migration, perhaps because they were capable of earning incomes from the sale of cotton, peanuts, and surplus grain. Four southern informants were involved in either marketing, long-distance trade, or tailoring. Yet other southerners practiced lower-status economic activities, including firewood and cooked food sales. A and D, Maganawa's founders, were involved, respectively, in meat selling and the trade in livestock skins.

Response to Drought and Famine

The responses to famine of three household heads who migrated from the north during the early 1970s are presented in Table 7.5. Food distributions and help from kinsfolk may have obviated the need to consume alternative foods. Wage labor and labor migration were undertaken by two informants. One informant sold a farm before his departure. The other two left all their lands with relatives.

Liquidation of livestock holdings and labor migration were northern migrants' most frequent responses to Buhariyya (Table 7.6). Assistance from relatives and friends was forthcoming in only one case. The migrant from Malbasa, Niger, received food aid, yet sold his compound before departing. Three informants reported selling some but not all of their farms. A small proportion of the proceeds were used to purchase food, while most of the sums received paid

**Table 7.5: Response to Food Shortage of Maganawa Informants
Who Migrated from the North 1973-74, N=3**

	<u>f</u>
Special Plantings	0
Assistance from Relatives/Friends	
- In Home Village	2
- Outside Home Village	2
Government Food Aid	2
Borrow Food or Money	0
Wage Labor	2
Migration for Wage Labor	2
Famine Foods	0
Sell/Slaughter Livestock	1
Sell Household Possessions	0
Sell Farmland	1

**Table 7.6: Response to 1983-85 Food Shortage,
"Northern" Migrants to Maganawa Village, N=8**

	<u>f</u>
Special Plantings	1
Assistance from Relatives/Friends	
- In Home Village	1
- Outside Home Village	1
Government Food Aid	1
Borrow Food or Money	1
Wage Labor	0
Migration for Wage Labor	4
Alternative Foods	1
Sell/Slaughter Livestock	6
Sell Household Possessions	1
Sell Farmland	3
Sell Compound	1

**Table 7.7: Response to 1983-85 Hardships
"Southern" Migrants to Maganawa, N=10**

	f
Special Plantings	2
Assistance from Relatives/Friends	
- In Home Village	0
- Outside Home Village	0
Government Food Aid	0
Borrow Food or Money	2
Wage Labor	6
Migration for Wage Labor	1
Famine Foods	0
Sell/Slaughter Livestock	5
Sell Household Assets	0
Sell Farmland	1
Sell Compound	0

for transportation. Farms that were not sold were left with relatives.

Responses in the more southerly settlements prior to departure are summarized in Table 7.7. As has been discussed previously, harvests in these areas had been relatively poor, but not total failures. The currency change operation may have decimated the cash savings of some migrants. The "pull" of uncultivated arable land and the "push" of land shortage in the villages of origin were also important factors. The responses "sell livestock" and "borrow food or money" were means of facilitating or financing migration. The local labor markets may have been reasonably robust, as only one informant went on labor migration. Only one informant reported selling farmland.

Subsistence in Maganawa Before the First Harvest

G was the only refugee to arrive early enough to undertake a special planting in 1984. Two other migrants from Kadadin Buda reported selling some of their clothing in order to purchase food in Dansadau. Three household heads received help from D, A, and the three other migrants who had arrived before the start of the 1984 farming season. Two other northern migrants relied extensively on earnings from dry season migration to Ibadan. The traditional occupations of smithing and Koranic teaching helped to sustain two household heads immediately after their arrival. But as was the case with most new settlers, wage labor, relied upon extensively by six of the nine northern

immigrants, was the most important means of procuring food before the first harvest.

Eight of the 11 migrants from southern settlements brought food with them. At some point, however, five performed local wage labor. No household head sought wage labor outside of Dansadau District. One informant used his donkey to collect firewood for sale. Another sold some of the goats he had shepherded to Maganawa in order to buy food.

Recovery

Three southern migrants built clay brick rooms at the same time that they were clearing land. The other eight waited until after their first harvest. All of the migrants from the north lived in lean-tos or huts until harvesting their first crops.

Of the nine migrants from the north, only one has never achieved self-sufficiency in staple foods in Maganawa. The first harvest of these migrants amounted on average to 35 bundles of grain and about one 50-kilogram sack of corn or peanuts. Two farmers with remarkably high yields (160 and 120 bundles) were self-sufficient after their first farming season. Two farmers took two years, one three years, one four years, and two five years to achieve self-sufficiency. The average best yield for this group of northerners is 83 bundles of grain and nine 50-kilogram sacks of rice, peanuts, or corn.

Although D reported being self-sufficient after his 1984 harvest, A's yields were not adequate until 1989. Five other southern migrants were self-sufficient after their second farming season, and two after their third. (Two informants declined to discuss their yields.) Average first-year yields amounted to 42 bundles of grain, only slightly better than the northerners, and yields of cash crops were about the same. Average best yields achieved by the southern migrants were 98 bundles of grain and ten 50-kilograms sacks of cash crops.

Four of the nine northern migrants have acquired small livestock in Maganawa. One of these farmers has oxen and a plow. Another has been able to purchase oxen, and believes that he soon will be able to afford a plow. Two southern migrants have oxen and plows. Five household heads from this group of southerners acknowledged having procured small livestock since their arrival. Five northern migrants, and five from the south, have been able to hire agricultural labor.

Table 7.8 presents Maganawa informants' sources of income. The more traditional occupations of Koranic teaching, smithing, barbering, and tailoring have been maintained. Meat selling, the animal skins trade, and cooked cassava sales are no longer practiced. The manufacture of mortars and pestles is a new source of income for two northerners. Seven informants have ceased going on seasonal migration. Opportunities for earning incomes from

Table 7.8: Sources of Income, Maganawa Village, 1989-90

	"Southern" Migrants N=11 f	"Northern" Migrants N=9 f
Sell Cash Crops/Grain Surplus	9	9
Agricultural Wage Labor	2	3
Seasonal Migration	1	4
Wood Carving		3
Koranic Teaching	1	1
Marketing	1	2
Tailoring	1	
Smithing		1
Firewood Collection and Sale	1	
Barbering	1	

**Table 7.9: Reported Agronomic Problems in Maganawa
N=21**

	f
Land Shortage	1
Labor Shortage	9
Chemical Fertilizer Shortage	18
Marketing Difficulties	12
Problems Accumulating Capital	11
Rainfall	1
Pests	
- birds	16
- monkeys	13
- millipedes	2
- termites	1
- other insects	4
- rodents	1
Conflicts with Indigenous People	9
Conflicts with Fulani	5

the sale of agricultural produce is the biggest change for the northerners. Two members of this group are involved in modest marketing activities in Dansadau village.

The shortage of chemical fertilizer is the most frequently cited agronomic problem in Maganawa (Table 7.9). Although manure is available from Fulani cattle and the settlers' own livestock, its use promotes excessive weed growth and increases demands for labor. Pests, especially birds and monkeys, also account for yields not reaching higher levels. Eleven farmers stated that if additional opportunities existed for acquiring capital, then they would be able to hire labor more frequently and/or acquire oxen and plows. Nine informants related that 'yan kasa had come to Maganawa to try to collect money for land they claimed to have been their fallow farms. These conflicts were resolved by Sarkin Kudu in favor of the settlers. Fulani cattle had caused damage to five farmers' crops, but violent conflicts had never ensued. The marketing problems were soon to be alleviated by the opening of the new road to Gusau. Farmers would no longer have to arrange to transport their produce to Magami to get a fair price. In December 1990 a gayya (communal work party) was underway to make motorable the track from Dansadau village to Maganawa. Farms for dry season cultivation were also being prepared.

Summary and Discussion

Dansadau has been and remains a relatively sparsely populated district. An extensive system of shifting cultivation produces surplus grain and cash crops. Few opportunities exist for generating off-farm incomes, but these are not critical for the basic maintenance of most households. Dansadau District generally has not been vulnerable to the twentieth century famines that have devastated the Sahel.

Three types of historical links between the Dansadau region and the Sahel have been documented. In the first half of the twentieth century, and perhaps before, Dansadau District was a temporary Sudanic refuge for Sahelian people displaced by drought and famine. Dansadau has offered economic opportunities to seasonal migrants from the Sahel, and since the 1920s the region has been a destination for people who migrated permanently during famines. It was not, however, until the 1953-54 famine Muda that substantial numbers of refugees began to settle permanently in Dansadau District. The available data indicate that the refugees from the early 1970s famine who settled in the district were several times more numerous than those who had immigrated during Muda, and the influx during the mid-1980s crisis was at least double that of the previous decade.

Most of the refugee groups suffered extreme deprivation and hardship before and during their migrations. Yet those who reported selling their farmland are a minority. One

group acknowledged the deaths of some of its members during the ordeal of distress migration on foot. Knowledge of Dansadau, and in many cases the ability to pay for motorized transport, reduced the risks and adversity associated with distress migration.

Distress migration contributes to the spread of famine conditions. By distributing food and implementing mitigation activities in famine-stricken localities, distress migration and the expansion of famine zones could be arrested. Yet in the near term refugees have achieved impressive levels of prosperity at their destinations. Should migration occur despite a judiciously administered famine relief effort, then migration could be facilitated in order to reduce morbidity and mortality.

A majority of refugees left their famine-stricken homelands either before or immediately after failed harvests (Figure 7.7). This has major implications for famine early warning programs because sharp increases in grain prices may not be registered until after households have migrated in distress.

After their arrival in Dansadau District, refugees had to contend with the twin imperatives of survival and securing the basis of their future livelihoods. Wage labor and the collection and sale of firewood, often by women, sustained the settlers until their first modest harvests. Settlers then had the time to build permanent housing and to clear additional farmland. A majority achieved self-

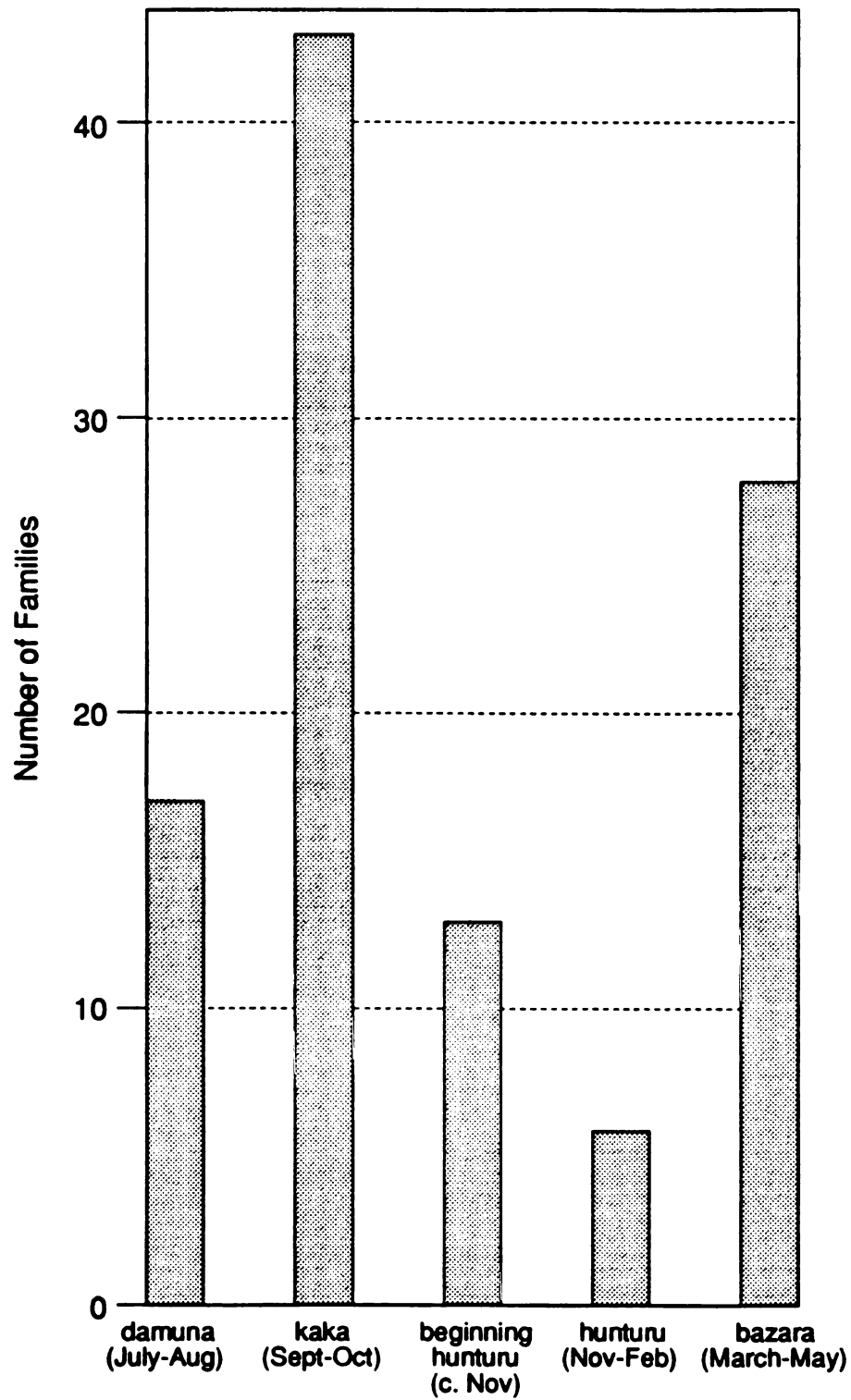


Figure 7.7: Summary of Available Data on Refugees' Time of Departure during Famines of 1953-54, 1972-74, 1983-85, and 1987. Total Families N=107

sufficiency in staple foods after their second harvest (Figure 7.8).

Return migration, according to the available numerical data, is comparatively uncommon (Table 7.10). Overall, the ratio of refugee families that settled permanently to those that reportedly returned to their homelands is about 7 to 1. In contrast, the ratio of reported permanent out-migration to out-migration – subsequent return in the Sahel study settlements is approximately 3 to 1. Refugees' success on their new lands probably explains their reluctance to return.

That often destitute people can, without outside assistance, rebuild their livelihoods and even prosper in Dansadau District has profound implications for famine mitigation and agricultural development initiatives. In a broad sense, the age-old relationship between the Sahel and Sudan zones is still extant, offering opportunities that may be more effective than any international famine relief apparatus.

Some African countries have for several years been net importers of food. Former famine refugees in Dansadau District are food exporters. Agricultural development initiatives in Dansadau and elsewhere in the Nigerian Middle Belt might result in even greater production of food surpluses, particularly if assistance is aimed at alleviating the specific problems identified by the farmers.

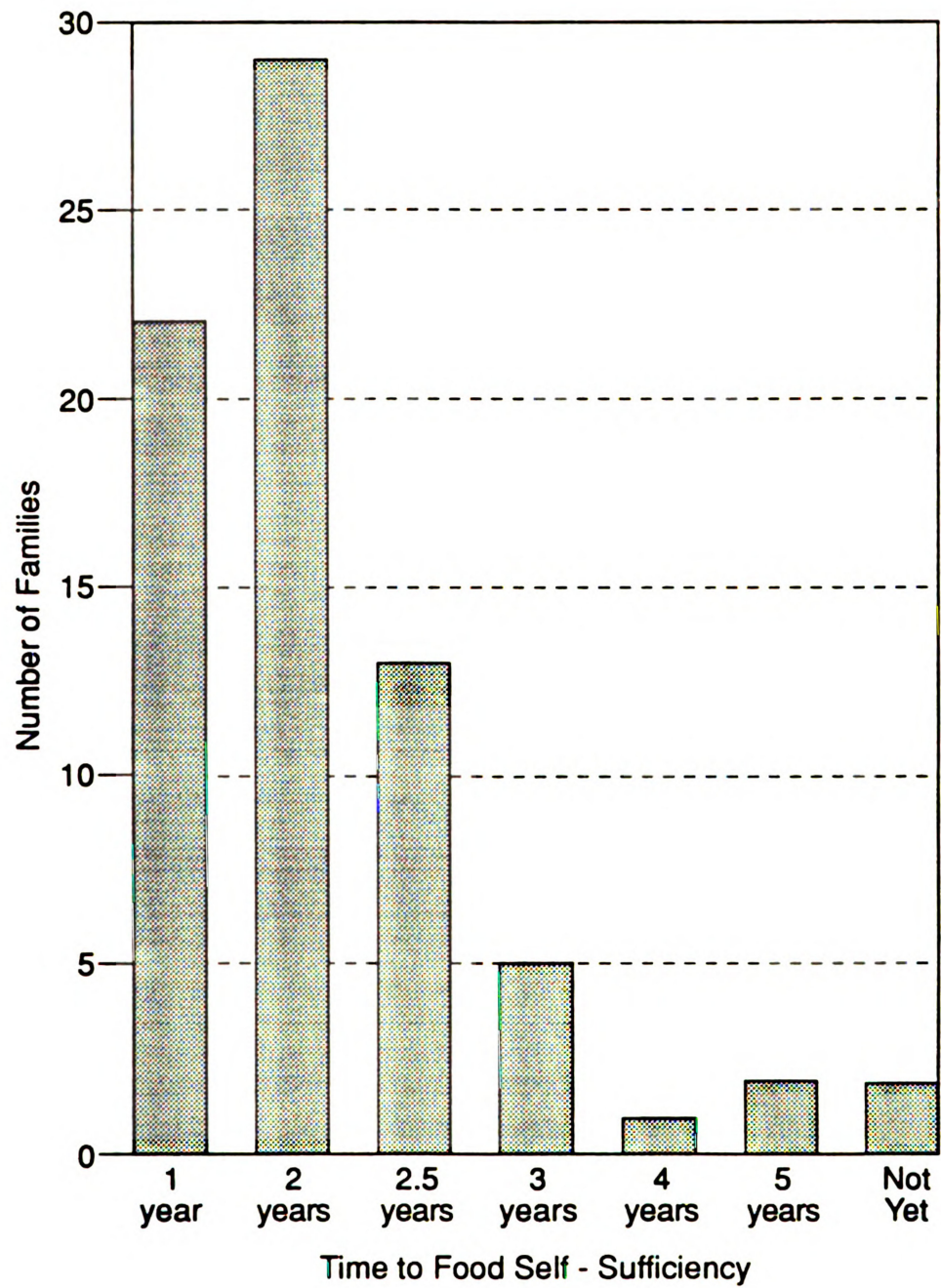


Figure 7.8: Summary of Available Data on Attainment of Food Self-Sufficiency by Refugees from Famines of 1953-54, 1972-74, 1983-85, and 1987

Table 7.10: Ratios of Permanent Out-Migration: Reported Return Migration

Village	Dan Gurgu	Mai Goge	Babban Doka	'Yan Sawaiyu	Mai Tukuniya (Gobirawa)	Dansadau (Neighbor- hood)	Nasarawa (Rugan Fulani)	Maganawa	
								Northerners	Southerners
<u>Years</u>									
1953-54	11:0	7:0		3:0					
c. 1961	2:0								
1973-74	0:2	13:2	6:0	ND	11:2	9:4			
c. 1976					4:0				
1983-85	8:0	5:3	17:0	12:2	41:0			9:6	11:0
1986-89	2:0	3:0	9:0		6:0		7:5		1:0
Overall	23:2	28:5	32:0	15:2	62:2	9:4	7:5	9:6	12:0

On the other hand, the disbanding of Unguwar Gwandu and the Maganawa farmers' reports of friction with the 'yan kasa suggest that limitations exist on such endeavors.

The implications of the research in Dansadau villages for famine mitigation, migration assistance, and rural development will be addressed further in the next chapter.

CHAPTER EIGHT: SUMMARY, CONCLUSION, AND IMPLICATIONS

Throughout history West African people have retreated southward during arid intervals and advanced toward the Sahara following the advent of wetter climatic phases. Twentieth century famines have impelled mass migrations by farmers from the semiarid Sahel. Succeeding years of climatic amelioration have prompted or permitted return migration, with the most recent cycle of advance and retreat occurring during the 1980s.

That most people depart very early during a crisis period strongly suggests that distress migration is actually a "strategic withdrawal," a deliberate attempt to preserve productive assets (Wood and Knight, 1975). Household heads who reported selling some of their farmland before migrating are in the minority, and total liquidation of land assets is extremely rare. Most refugees have secured better assets in new lands while maintaining rights to farms in their villages of origin. Families who migrated during famines have escaped the purported "ratchet effect."

The denouement of famine has indeed entailed positive developments. These developments are perhaps not entirely unlike what Hassan (1988) has envisaged: refugees from the Sahara establishing intensive food production in the Nile Valley, the sine qua non for the emergence of Egyptian civilization.

These revelations, and the fact that out-migration is not always permanent, cast serious doubt on dependency explanations of famine's ultimate cause. Continuum models of the temporal progression of famine advanced by Watts (1983) and others represent (or have been influenced by) a crude and seriously flawed radical determinism. Their deficiencies result from not considering the denouement of famine, and from underestimating African farmers' capacity to cope, adapt, and innovate. "Conjunctures" encompassing environmental, political, and economic perturbations, and taking into account myriad temporal and spatial scales, offer the only viable comprehensive explanation of famine causality (Campbell and Olson, 1990; Blaikie and Brookfield, 1987; Butzer, 1982).

Related to radicals' theorization of famine's ultimate cause is their assertion that the moral economy has been seriously eroded as a consequence of capitalist penetration. This study has determined that the moral economy did operate during recent famines and that the moral economy contributed to the spread of famine across space.

Research undertaken mainly in northeast Africa has demonstrated that distress migration is a principal means by which famine, disease and death diffuse (Cutler, 1984; de Waal, 1989). This study has brought to light examples of this process in Northern Nigeria and Niger. Refugees seek succor through kinship and patronage ties – filaments in the web of the moral economy.

Nigerien refugees from the 1913-14 famine were judged, quite possibly correctly, to have exacerbated the crisis in Sokoto Province. During the 1926-27 famine people in northern Kano communities migrated to relatives' villages in Niger, reportedly in response to lower food prices. The mass migrations consequent upon Muda also arguably caused famine to spread. In the Sahel study area incidents of local inter-village distress migration were recorded for the 1953-54 famine and for the famines of the early 1970s and mid-1980s. Distress migrations occurred from villages that also received refugees. In the course of their hijira, the Dakoro refugees from the early 1970s famine sought assistance from relatives in Intona. Food and other help was forthcoming, but for a limited time. Buzu refugees who had established a village in Talata Mafara LGA during the early 1970s famine related that an influx of other Nigerien refugees seeking relief from the mid-1980s famine contributed to their decision to migrate to Dansadau District. Future fieldwork should investigate in greater detail the spatial diffusion of famine.

Further research should also seek to determine the extent to which Dansadau District is representative of West African Middle Belt refugee destinations. Based on information gathered from fieldwork, Kwasa Kwasa, Dandume, and other settlements in southern Katsina State would be excellent sites for fieldwork. Additional possibilities include, in Sokoto State, Talata Mafara LGA, the Zamfara

River valley, and the localities of Dankurmi and Dangulbi; and in Niger State, the Babban Rami and Tsofon Rami localities. A village identified by Schultz (1976) as having been established in the Zaria region during 1973-74 by refugees from northern Katsina State is another potential research site.

Implications for Famine Early Warning (FEWS) and Rural Development

The success of migration during famine stems from what Mortimore (1989) calls "resilience," the perennial coping strategies of Sahelian farming households. The chronic lack of, and the often extreme interannual variations in, food self-sufficiency necessitates these constant forms of coping. The most salient facet of resilience is off-farm income generation. Several income-earning activities, such as marketing and dry season farming, may be undertaken locally. Others require different degrees of mobility.

The extent to which communities are self-sufficient in staple foods and the various facets of resilience suggest four general categories of baseline vulnerability to famine, the mapping of which would prove immensely valuable to FEWS.

- 1) Highly vulnerable: chronically food deficit villages, with relatively poor local opportunities for off-farm incomes. Labor migration is the key to these villages' subsistence. Jari, the Nigerien village from which 12 Fulani farming families migrated in 1987, would probably be included in this category, as well as settlements in the vicinity of Dakoro, Bouza, and Madaoua.
- 2) Moderately vulnerable I: chronically food deficit villages, with relatively good local opportunities

for off-farm incomes. Most of the settlements in the Sahel study area exemplify this category.

- 3) Moderately vulnerable II: normally food self-sufficient villages, with relatively poor local opportunities for off-farm incomes. Swinton's (1988) study villages in Niger might be included in this category. Villages in Dansadau District are most accurately described as moderately vulnerable II, although the environmental catalyst of famine would most likely be locust attacks or excessive rainfall, not drought.
- 4) Least vulnerable: normally food self-sufficient villages, with relatively good local opportunities for off-farm incomes. Apparently IFPRI's (in USAID, 1992) study villages in western Niger belong in this category.

Unforeseen circumstances have altered this baseline vulnerability. As a consequence of the 1984 currency change operation and the closure of Nigeria's land borders, some communities in the Illela area became highly vulnerable to famine following drought. Many families reportedly lost much or all of their cash savings, which might have been used to purchase food. Local opportunities for off-farm income generation were curtailed. An appreciation of such conjunctures would also represent a significant improvement in FEWS's conceptual capacity.

Judging from the data on famine-induced family migration, vulnerability was highest in villages that lacked a perennial source of domestic water. In Lakoda, Tozai, and Lafani, water shortages may have caused an increase in diarrheal diseases and malnutrition. The need to protect children from these perils might partly explain the greater number of migrant families.

Villages lacking dry season farmland and a constant supply of water could be readily identified. Maps resulting from such an effort could prove to be, along with specifications of food self-sufficiency and resilience, a highly significant first step toward identifying baseline vulnerability to famine and potential future famine epicenters. Subsequent steps should involve systematic interviewing aimed at identifying and evaluating coping strategies, as well as the impacts of recent famines, including migration. (In Niger, sadly, there are three recent famines to focus upon: 1983-85, 1987-88, 1992-93.)

The ability to rapidly identify famine epicenters – highly vulnerable localities and villages from which famine spreads through distress migration – would substantially improve famine early warning systems. Glantz (1989) suggested that seasonal hardship could serve as an optic through which to assess vulnerability to famine. Many of the causes of this "hungry season" have also been identified as causes of famine (Ogbu, 1973; Nurse, 1975; Hunter, 1966, 1967; Annegers, 1973). Moreover, famine evolves from the hungry season (Campbell and Trechter, 1982; Watts, 1983; Mesfin, 1987). Communities that normally experience the worst hungry season impacts are logically most vulnerable because they come closest each year to a descent into famine. Hungry season impacts, quantified by anthropometric measurements accomplished during contrasting seasons, might well prove to be highly effective in assessing baseline

vulnerability to famine and identifying probable famine epicenters.

Anthropometric data could be collated with data on wells and fadama lands, and analyses of satellite-derived vegetation indices. Assessments of wild food reservoirs and other vegetative resources would also be important. Using Geographic Information Systems technology, these data could be integrated with interview data regarding off-farm income sources and famine impacts and coping strategies. The resulting "atlas" of famine vulnerability would identify highly vulnerable areas within which famine epicenters have recently developed. Priority monitoring of these areas, and the rapid deployment of relief and/or the implementation of mitigation activities could, to a great extent, restrict the spread of famine. Such a research effort would also specify rural development initiatives that would significantly reduce vulnerability to famine.

Local people, identified during the course of interviewing, would be essential as monitors of incipient famine. Sarkin Noma A, the patriarch of Katanga, is an example of an individual with extensive knowledge of local conditions. He correctly specified Kadadin Buda, Lakoda, Lafani, and Tozai as villages from which distress migration had been most pervasive during the 1983-85 famine. Alhaji Magaji Barau Dansadau is another individual with remarkable knowledge of his locality. Alhaji's specifications of the origins of refugees and the dates of their arrival in

Dansadau District were in all cases found to be essentially accurate. Rapid anthropometric surveys and rapid rural assessment surveys could be compared to baseline data in order to substantiate the reports of local monitors (Campbell and Trechter, 1982).

In developing insight into the catalytic causes of famine, this study has demonstrated the need for closer monitoring of rainy seasons and the importance of daily rainfall series. These findings would prove most useful to FEWS after baselines for famine vulnerability have been determined through fieldwork.

The 1953-54 famine Muda was triggered by excessive and poorly timed rainfall – a catalytic cause that could easily escape detection by satellite-derived vegetation indices and the reporting only of monthly rainfall totals. Excessive rainfall was also the catalytic cause of famine in 1946, and deficient early season rainfall, followed by torrential rainfall later in the season, led to famine in 1965-67. These lessons could well prove to be significant in the not-too-distant future. Some numerical general atmospheric circulation models, as well as models based on early and mid-Holocene climatic parameters, indicate strengthened monsoons and increased precipitation for the Sahel in a twenty-first century CO₂-warm world (Henderson-Sellers, 1994; COHMAP Project Members, 1988; Butzer, 1983). Instrumental scenarios based on the "warm" 1940s and 1950s may also indicate this possibility (Palutikof, personal

communication). Furthermore, an increase in mean global atmospheric temperature is likely to engender more frequent occurrences of "extreme events" (Wigley, 1989). Perhaps the 1953 rainy season was a harbinger of future major climatic deviations.

Fieldwork in the Illela area also determined that severe famine did not develop as a consequence of ostensible drought years. Informants were nearly equally divided as to whether famine occurred in the early 1970s despite record low annual rainfall totals. By all accounts, the famines of 1953-54 and 1965-66 were much worse. Daily rainfall series might offer a partial explanation for what were apparently fair 1972 and 1973 harvests. In contrast, people in areas farther east and southeast experienced major harvest failures. This finding is significant to regional-scale assessments of famine vulnerability. However, elders in Tozai unequivocally identified the early 1970s as a famine period. This settlement, and perhaps some of the Tudun Gudali Mai Ruwa and Gidan Alkasim hamlets, indicate that local-scale variations in vulnerability to famine exist. In the case of Tozai, the desiccation a decade before of wells and dry season farmland might partly explain greater local-scale vulnerability.

Despite higher annual rainfall totals, harvests in 1983 and 1984 were judged to have been worse than harvests in the early 1970s. Poor harvests, and the aforementioned adverse political and economic developments of 1983-85, conjoined to

trigger famine. Yet harvests in 1985, a year with a lower annual total than either of the two previous years, were universally reported as having been excellent. Daily rainfall series might again explain these extremely different outcomes.

Rainfall data and the data on interannual variations in grain crop yields and food self-sufficiency should also prove significant for programs designed to detect incipient famine. Rainfall in 1988 resulted in an approximate doubling of yields from 1987 levels, and may represent a best-case year. Yields in 1987, with the most deficient June since at least 1933, were for most farmers lower than yields in 1989, a rainy season marred by the most deficient August on record. The recording, transmission, and analysis of daily rainfall, especially in June, could significantly improve predictions of harvest quality and famine early warning.

Of greater significance to FEWS is that a majority of refugees interviewed during fieldwork had departed either before or immediately after failed harvests (c. July-early October). At least in the case of the 1953-54 famine, distress migration was already well underway before sharp increases in grain prices were registered. Famine had already started spreading – and people's lives had thereby been jeopardized – before the highly vaunted indicator of grain prices signalled impending famine. Mortimore's (1989)

data indicate that the predictive power of grain prices may not have been much better in the 1970s and 1980s.

This study has identified a basic problem: migration has contributed in large measure to the spread of famine across space, but migration is also a very effective strategy for maintaining productive assets and for securing new ones. As de Waal (1989) suggested, the timely delivery of food aid to afflicted localities would greatly reduce the incidence of distress migration, the expansion of famine conditions, and deaths from malnutrition-related diseases. But this might also reduce the possibilities of achieving greater prosperity in new lands. The provision of migration assistance might prove to be an effective solution in the near term. In India, migration routes, with stations providing water, food, and fodder, have been prepared in advance (Srivastava, 1968). Johnson and Vogel-Roboff (1980) proposed something similar for Sahelian pastoralists, while Baier (1976) suggested that grazing reserves could be set aside in the Middle Belt for herders fleeing droughts farther north.

A longer-term solution to the problem of recurring famine would require a different orientation for rural development initiatives in West Africa's drylands. The ancient links between the Sudan and the Sahel, illuminated by Lovejoy and Baier (1975), still exist. Moreover, as refugees have demonstrated, these links offer effective means not only for contending with famine, but for

rebuilding and even enhancing livelihoods. These refugees have also demonstrated that considerable scope exists for "bottom-up" approaches to rural development. They have achieved relative prosperity without the assistance of governments and international aid organizations. The most effective development programs are those that facilitate indigenous initiatives. Perhaps the agropolitan approach advanced by Friedmann and Weaver (1979) would be a major facilitator of these initiatives. But instead of agropolitan districts, more appropriate spatial development units would be north-south trending corridors. Corridors would integrate for development purposes densely settled Sahelian zones and sparsely populated areas in the Sudan. The limits of such an approach would depend on the potential for further agricultural development in the West African Middle Belt, a compelling focus for future field research.

APPENDICES

Appendix 1: Vegetation in Sahel Study Area

Appendix 1 — Vegetation in Sahel Study AreaTrees

<u>Hausa</u>	<u>Latin</u>	<u>English</u>	<u>Uses</u>
Aduwa	<u>Balanites aegyptica</u>	Desert date	*-flowers: food *-seeds: food, medicinal -bark: traditional soap
Danya	<u>Spondias sp.</u>		*-fruit: food
Dogon yaro	<u>Azadirachta indica</u>	Neem	*-leaves: medicinal
Dorowa	<u>Parkia filicoidea</u>	Locust bean tree	*-seeds: fermented cakes -extract of husks: hardening floors, sides of indigo pits
Dumniya	<u>Vitex cienkowskii</u>		*-fruit: food, sweet drinks
Gawo	<u>Acacia albida</u>	Acacia (leafless during rains, blooms when dry season begins)	*-leaves: fodder
Giginya	<u>Borassus flabelifer</u>	Deleb palm/ Palmyra palm	*-fronds: mat-making -shoots: food -nut, kernel: food
Goriba	<u>Hyphaena thebaica</u>	Dum palm	*-fronds: mat-making -nut (unripe kernel): food -nut (rind): "molasses," cakes
Gwada		similar to Egyptian Mimosa, but thornless	
Kirinya	<u>Prosopis oblonga</u>	acacia-like	-seeds: cakes

Appendix 1 (Cont.)

<u>Hausa</u>	<u>Latin</u>	<u>English</u>	<u>Uses</u>
Kuka	<u>Adansonia digitata</u>	Baobab	*-leaves: frequent sauce ingredient *-seeds: fermented cakes -fruit pulp: used variously in food and drink
Kurna	<u>Zizyphus spina-christi</u>		*-berries: food
Madauci	<u>Khaya senegalensis</u>	Mahogany	*-bark: medicinal, especially for gastro-intestinal distress and headaches
Marje	<u>Acacia ?</u>	Acacia (yellow flowering)	
Marke			*-chewing sticks
Taramniya	<u>Combretum verticillatum</u>		-gum
Tsamiya	<u>Tamarindus indica</u>	Tamarind	*-pulp of pods: porridge; sweet beverages; medicinal, especially as a laxative and for heartburn

Shrubs

<u>Hausa</u>	<u>Latin</u>	<u>English</u>	<u>Uses</u>
Anza	<u>Boscia augustifolia</u> <u>Boscia senegalensis</u>		*-berries: food -bark: prepared with cereals
Dashi	<u>Balsamodendron africanum</u>	African myrrh	-medicinal -scent for clothing

Appendix 1 (Cont.)

<u>Hausa</u>	<u>Latin</u>	<u>English</u>	<u>Uses</u>
Gaude	<u>Gardenia erubescens</u>		-fruit: food, cosmetic
Geza	<u>Combretum sp.</u>		
Gurmuski	<u>Grewia sp.</u>		*-berries: food
Jirga	<u>Bauhinia rufescens</u>		-pods(?): medicinal -seeds(?): medicinal -leaves(?): medicinal
Kalgo	<u>Bauhinia reticulata</u>		-bark: cordage
Kamu Mowa	<u>Grewia sp.</u>		
Kuru Kuru	<u>Ferentia canthioides</u>		
Magariya	<u>Lizyphus jujuba</u>		*-berries: food
Sabara	<u>Guiera senegalensis</u>		*-leaves: burnt to keep insects off livestock -leaves: food, medicinal, prophylactic of leprosy
Tafasa	<u>Cassia tora</u>		*-leaves: sauce ingredient, snack -leaves: medicinal, as a laxative
Tumfafiya	<u>Calotropis procera</u>	Dead Sea or Sodom apple (a "milkweed")	*-leaves: medicinal, as treatment for scorpion sting

Appendix 1 (Cont.)

Sedges/Grasses/Herbs

<u>Hausa</u>	<u>Latin</u>	<u>English</u>	<u>Uses</u>
Gamba	<u>Andropogon guyanus</u>		*-large mats, used frequently in habitation construction and repair; demarcates farm boundaries
+Gizgiri	<u>Cyperus auricomus</u>		-tuberous root: scent for clothing, medicinal
Karangiya	<u>Cenchrus catharticus</u>	burr grass	*-fodder *-grains: food
Kyamro	<u>Saccharum spontaneum</u>		*-lids of granaries *-arrow shafts
Lamptin barewa/ Ridin barewa (?)	<u>Sesamum alatum</u>	wild species of sesame	*-stimulant
+Sabe	<u>Panicum albidulum</u>		*-grains: food

•Weeds

<u>Hausa</u>	<u>Latin</u>	<u>English</u>	<u>Uses</u>
Bagaruwa kasa	<u>Cassia mimosoides</u>		*-medicinal
Burburwa	<u>Eragrostis tremula</u>		*-fodder *-grains: food
Garamani	<u>Sida cordifolia</u>		*-bark: fiber

Appendix 1 (Cont.)

<u>Hausa</u>	<u>Latin</u>	<u>English</u>	<u>Uses</u>
Harkiya	<u>Digitaria debilis</u>	Finger grass	*-fodder
Kuduji	<u>Striga senegalensis</u>	Witchweed	
Kura shanu	<u>Eryshorbia aegyptiaca</u>		-medicinal
+Lalu	<u>Corchorus tridens</u>		*-frequent sauce ingredient
Nanafo	<u>Celosia trigyna</u>		*-medicinal, as vermifuge, especially for tapeworm
Nonon kurciya	<u>Euphorbia hirta</u>		*-medicinal
Tsaida	<u>Tribulus terrestris</u>		*-food

Other Plants

<u>Hausa</u>	<u>Latin</u>	<u>English</u>	<u>Uses</u>
Albasa kura (grass?)	<u>Urginea nigriflora</u>	Hyena's onion	*-bulbous root: repels snakes from room or compound
Lanje (weed)			*-leaves: food
Madaucin kasa (twiner)	<u>Aristolochia albidula</u>		*-root: medicinal, as Guinea worm treatment
Waken gizo (twiner)	<u>Vigna triloba</u>	Spider's bean	*-fodder

Appendix 1 (Cont.)

Not In Reference Materials

<u>Hausa</u>	<u>Description</u>	<u>Uses</u>
Bibirwa	grass	*-fodder
Bulasa	weed	
+Duagalau	grass/weed	*-fodder
+Girau	weed	*-fodder
Maras	burr grass	*-fodder
+Tonkan kaji	small shrub (?)	*-fodder *-bulbous fruit: food
Tsintsiya mararaki	fern-like grass	*-medicinal, for toothache and earache

- * Use reported by informants
 - Designated as weeds in reference materials and/or by informants
 - + Found predominantly on fadama lands
- Sources: Field data, Abraham (1962), Bargery (1951), Dalziel (1916), Iliya (1988), INDRAP (1983)

Appendix 2: Hausa Language Terms for Atmospheric and
Climatic Phenomena

Appendix 2: Hausa Language Terms for Atmospheric and Climatic Phenomena

sarayin sama - atmosphere
 saurayi - clear sky
 zafi - heat
 gumi - hot (usually humid) weather
 sanyi - cold/dampness/moistness/vegetation
 suraci - vapor
 suracewa - evaporation
 iska - wind
 hihili - light, cool breeze
 gizagizantuwa - condensation
 askara - condensation
 raba - dew
 hazo - fog/mist/drizzle/haze
 ruwan sama - rainfall
 manyan ruwayen sama - torrential rainfall

 damuna - rainy season (June - September)
 agazari - very hot period immediately following the rains
 rani - dry season (October - May)
 dari - cold season (November - February)
 bazara - hot, dry season (March - May)

 hunturu - Harmattan wind (northeast trade wind)
 jaura - very cold interval of dari
 - hot season hunturu (northeast trade wind)
 bugi/bugi-bugi/hazo-hazo - strong hunturu and haze

 malka - period from middle to end of rainy season
 - torrential rainfall
 bushi - dry spell during rainy season
 - drought

 fari - drought
 busa/busu - slight drying, cooling of earth
 kiri - last gusts of southwest monsoon (October)

 girgije - cumulus cloud
 gizagizai - anvilhead clouds
 gajimarai - high white, fleecy clouds
 hadari - rain-bearing cloud
 - storm
 - rainless storm at end of rainy season
 hadarin kura - dust-laden cloud
 - dust storm
 bushaki - black, apparently rain-bearing cloud accompanied
 by strong winds but no rainfall
 jida - fast-moving cloud/movement of such clouds
 fatake - fast-moving cloud/movement of such clouds
 ginnariya - line squall
 aradu - thunder clap

Appendix 2 (Cont.)

tamatsa - thunder clap

tsawa - thunder clap

abassama - loud thunder clap

cida - low rumbling of thunder

walkiya - lightning

kankara - hail/ice

guguhwa - whirlwind, "dust devil"

janzari - high whirlwind

malayewa - flooding

makakewa - flooding

Sources: INDRAP (1983), Bargery (1951), Abraham (1962), Field data

Appendix 3: Birnin Konni Annual and Monthly
Rainfall, 1933-91

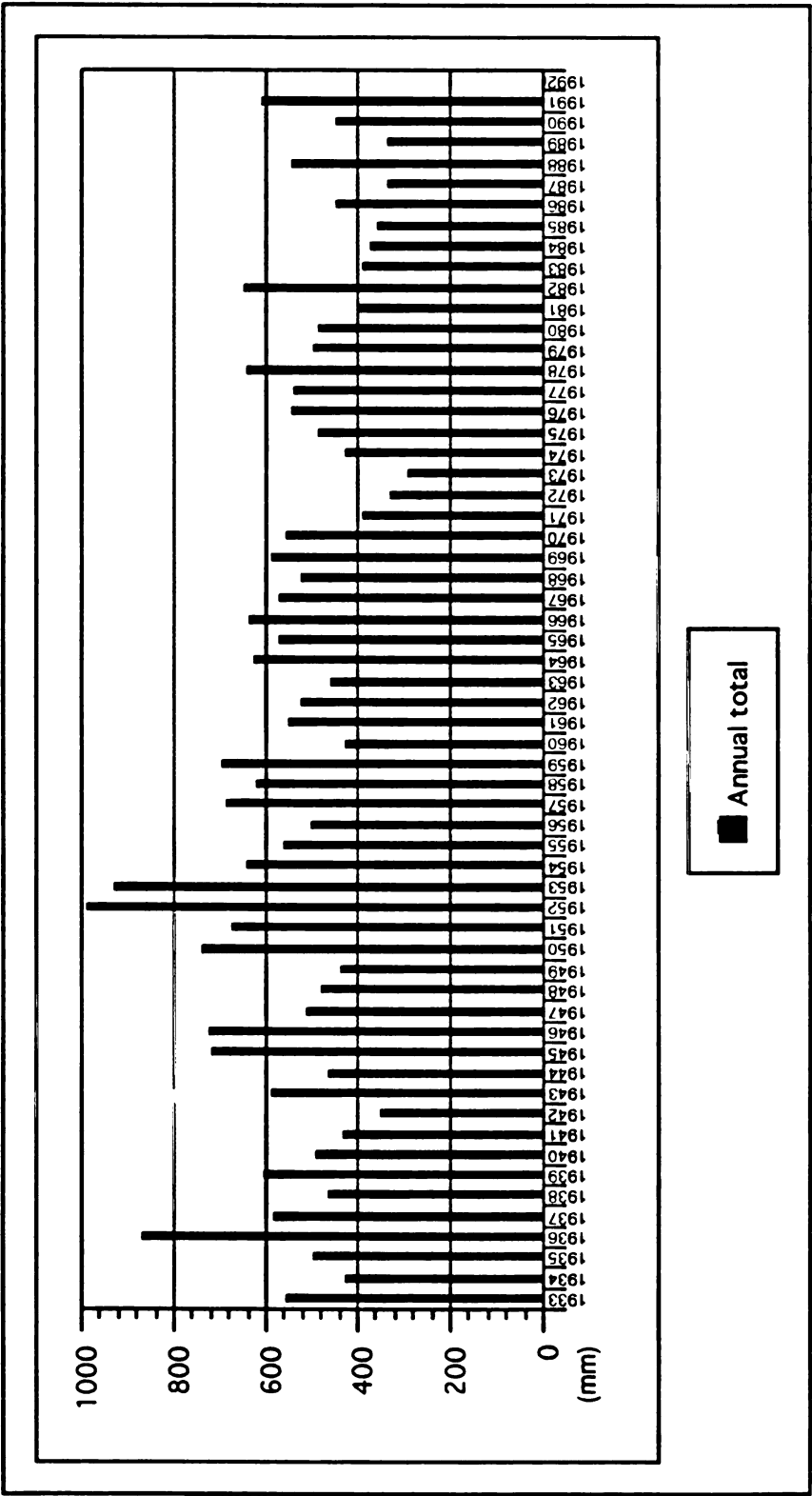


Figure A3.1: Birnin Konni Annual Rainfall, 1933-91
Sources: ORSTOM (1976) and Hulme (1992)

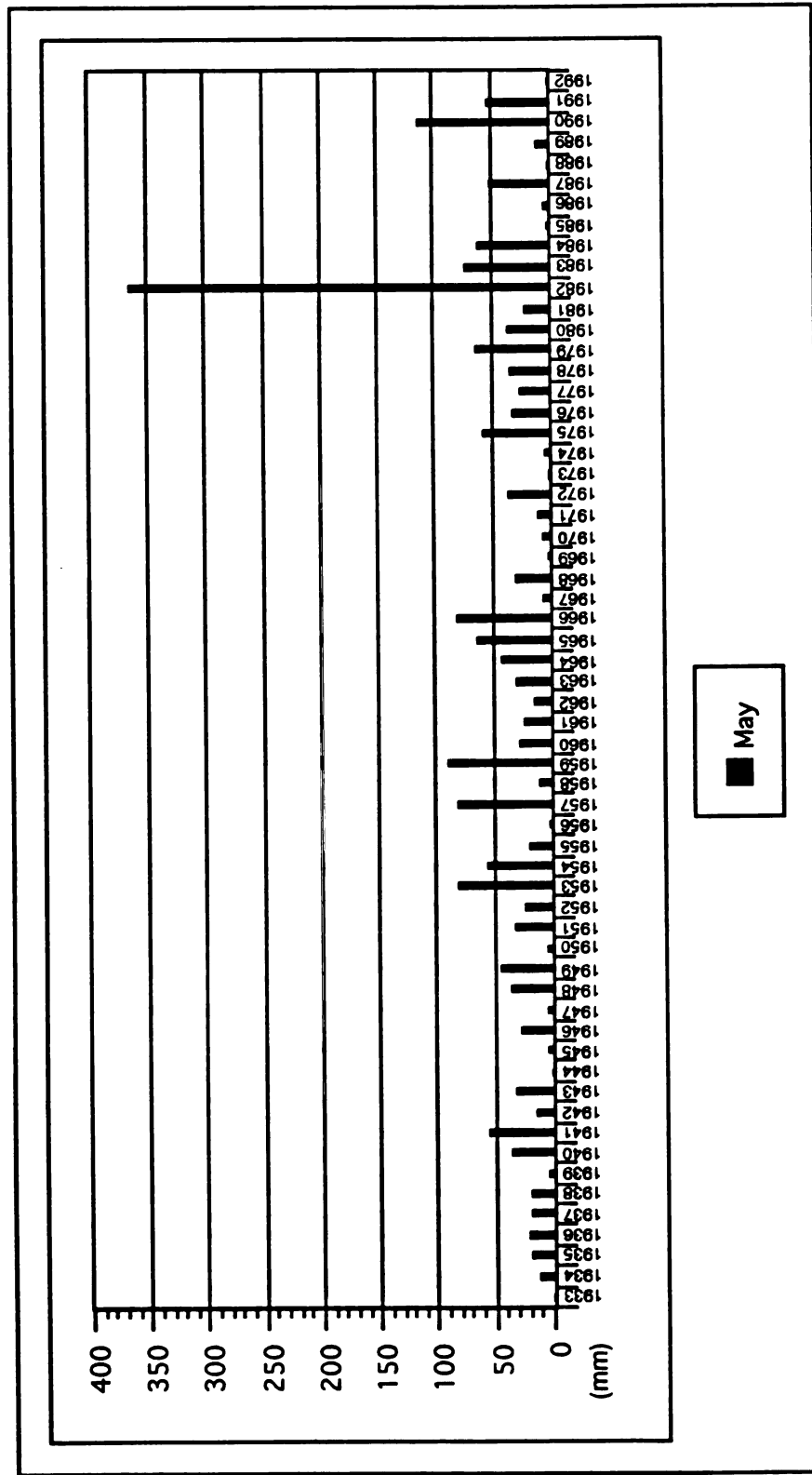


Figure A3.2: Birnin Konni May Rainfall, 1933-91
Sources: ORSTOM (1976) and Hulme (1992)

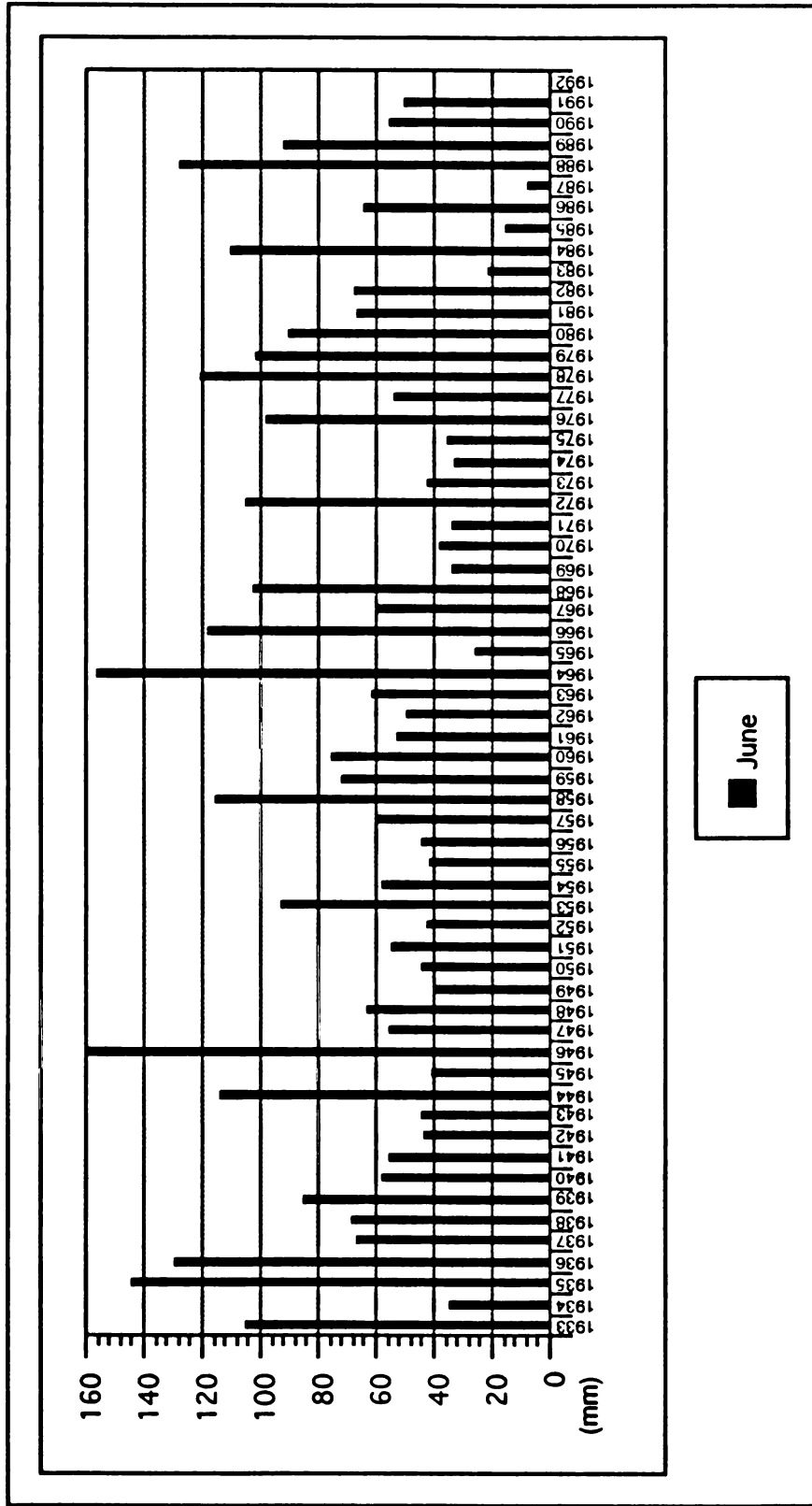


Figure A3.3: Birnin Konni June Rainfall, 1933-91
Sources: ORSTOM (1976) and Huime (1992)

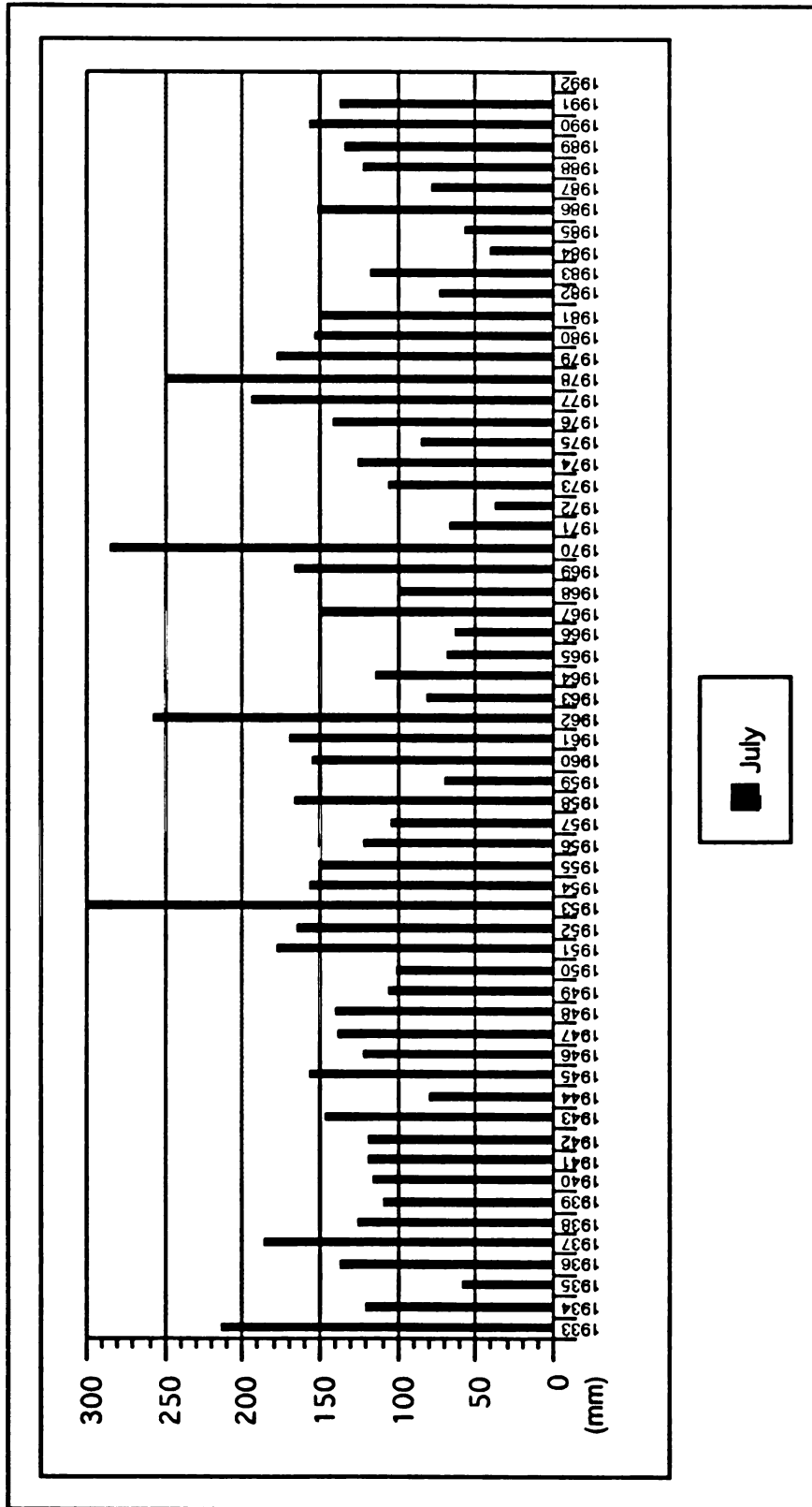


Figure A3.4: Birnin Konni July Rainfall, 1933-91
Sources: ORSTOM (1976) and Hulme (1992)

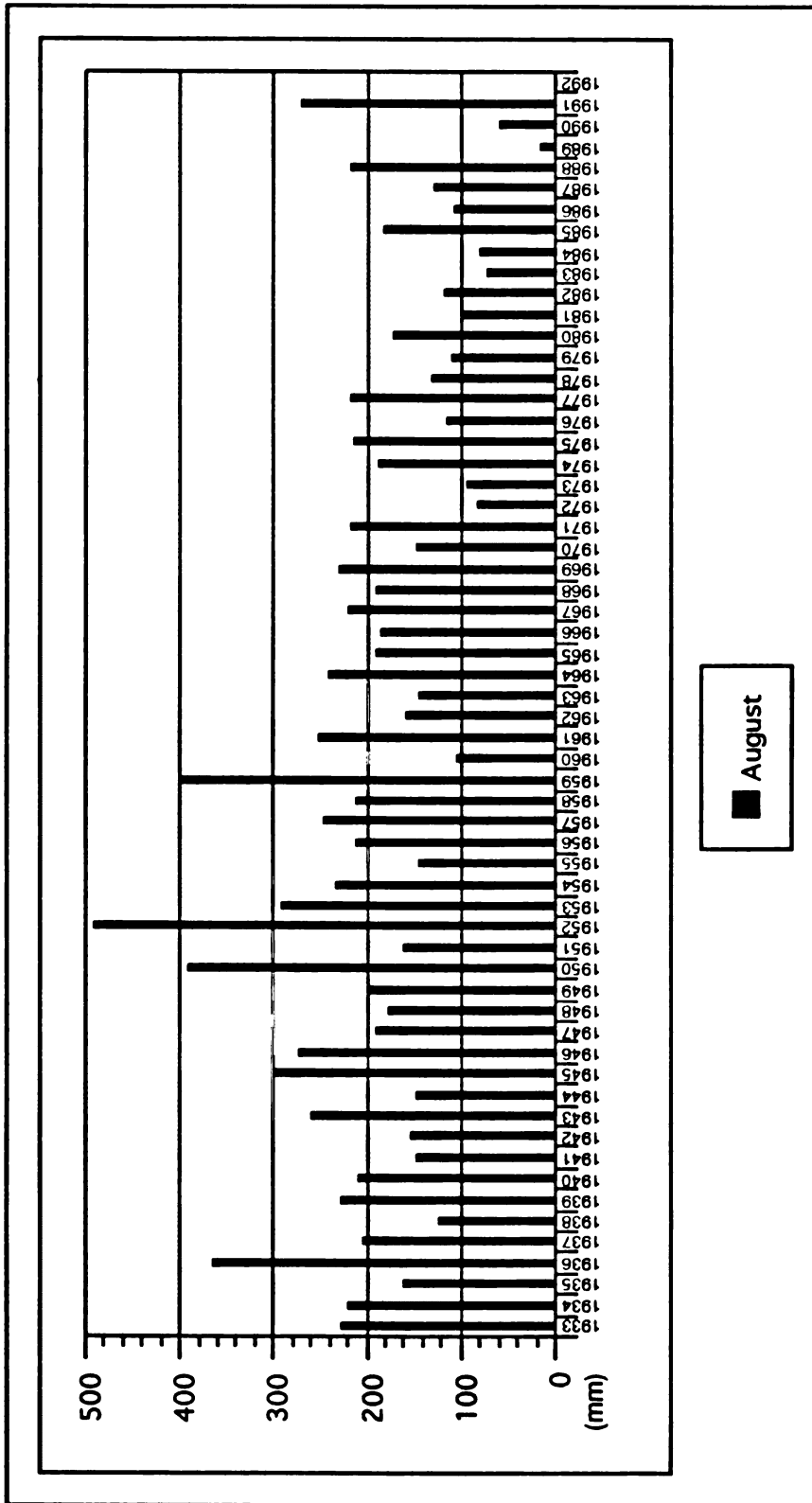


Figure A3.5: Birnin Konni August Rainfall, 1933-91
Sources: ORSTOM (1976) and Hulme (1992)

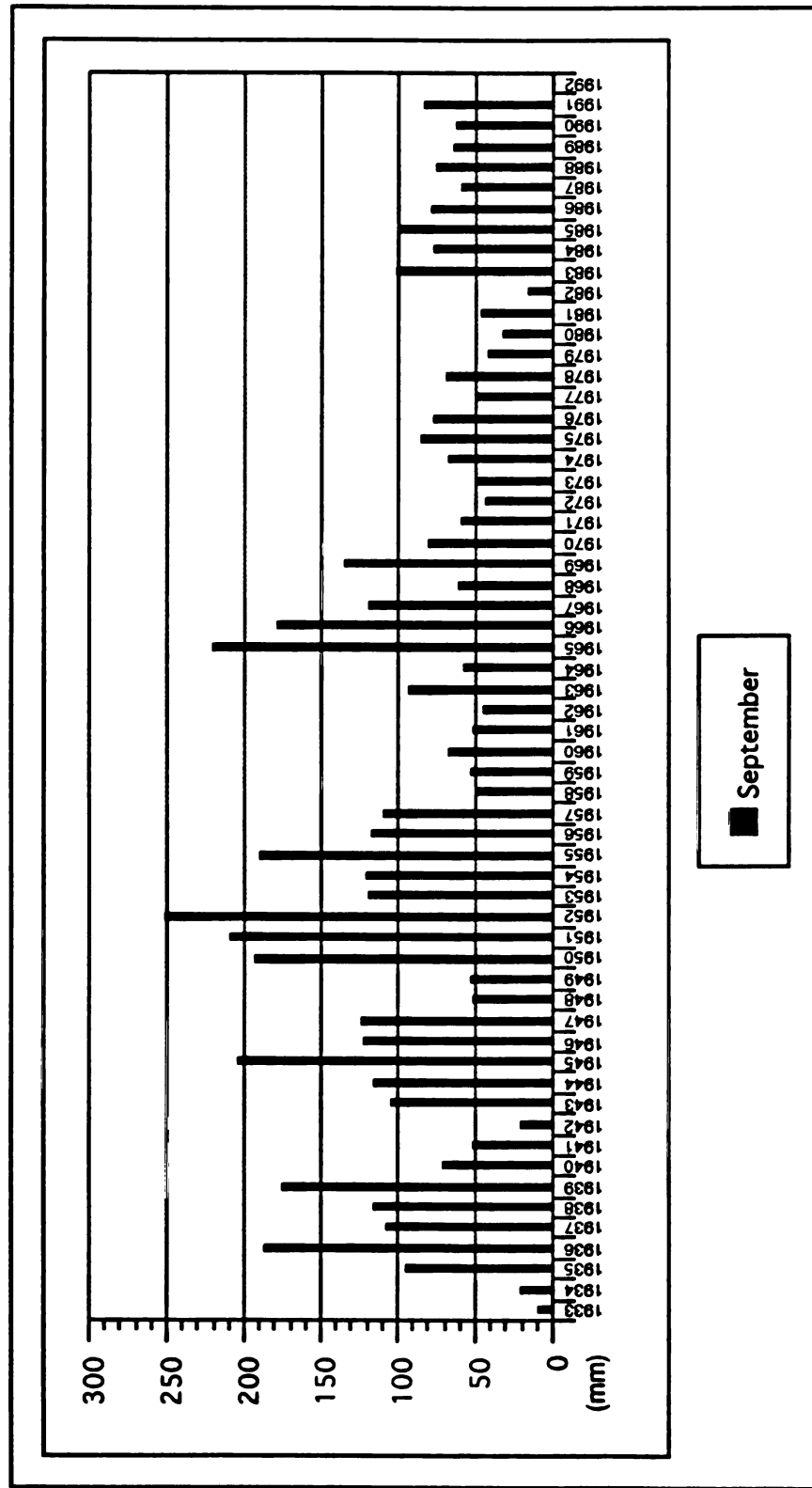


Figure A3.6: Birnin Konni September Rainfall, 1933-91
Sources: ORSTOM (1976) and Hulme (1992)

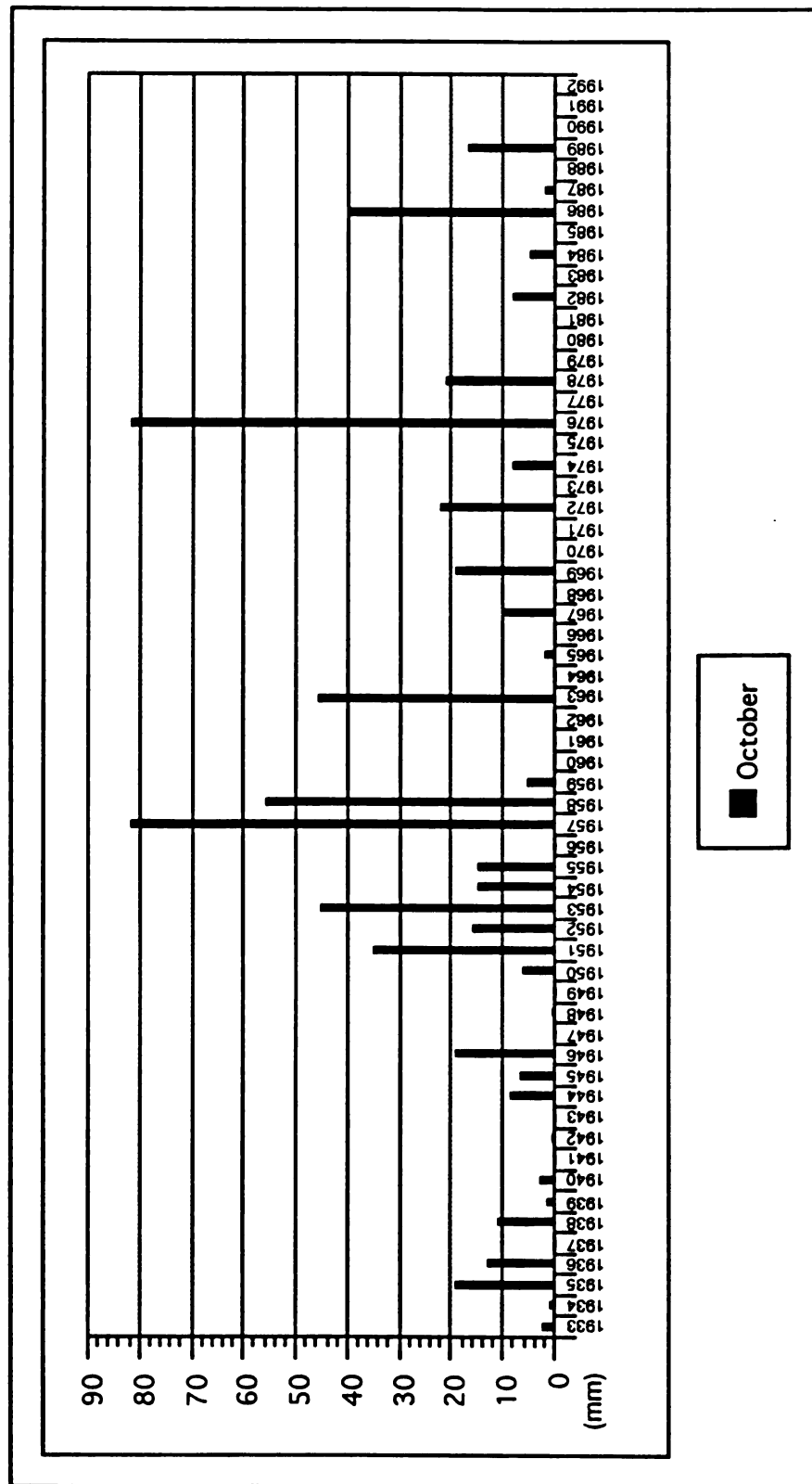


Figure A3.7: Birnin Konni October Rainfall, 1933-91
Sources: ORSTOM (1976) and Hulme (1992)

Appendix 4: Levels of Self Sufficiency in Grains,
Sahel Study Area Villages
(numbers designate households; see chapter five and
chapter five end notes 12-15 for explanation)

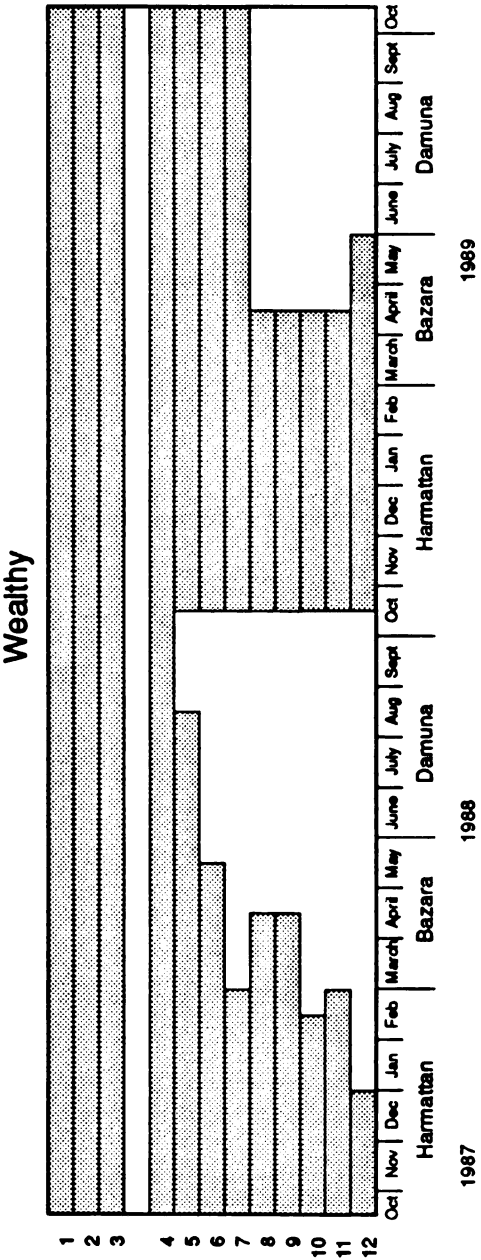


Figure A4.1: Levels of Self-Sufficiency in Grains, Amarawa

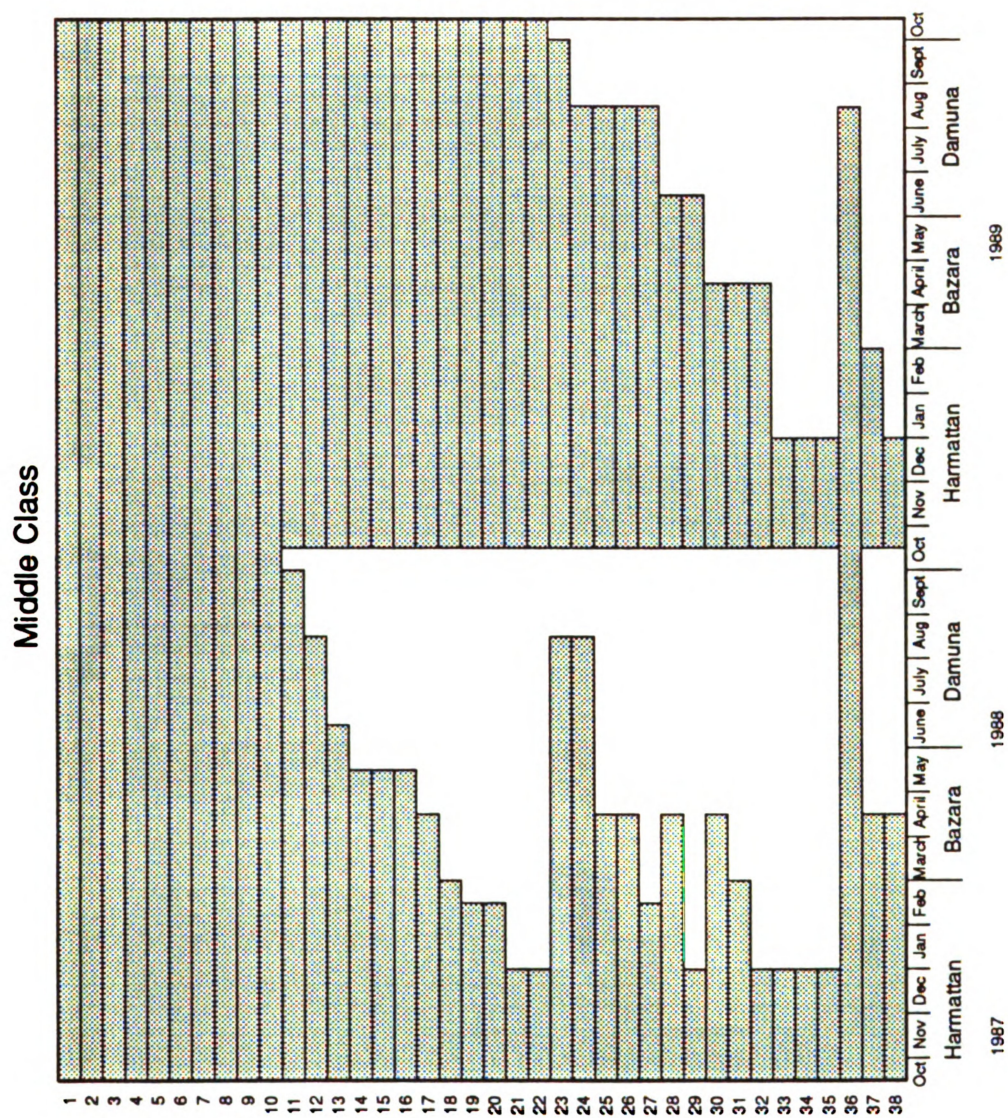


Figure A4.2: Levels of Self-Sufficiency in Grains, Amarawa

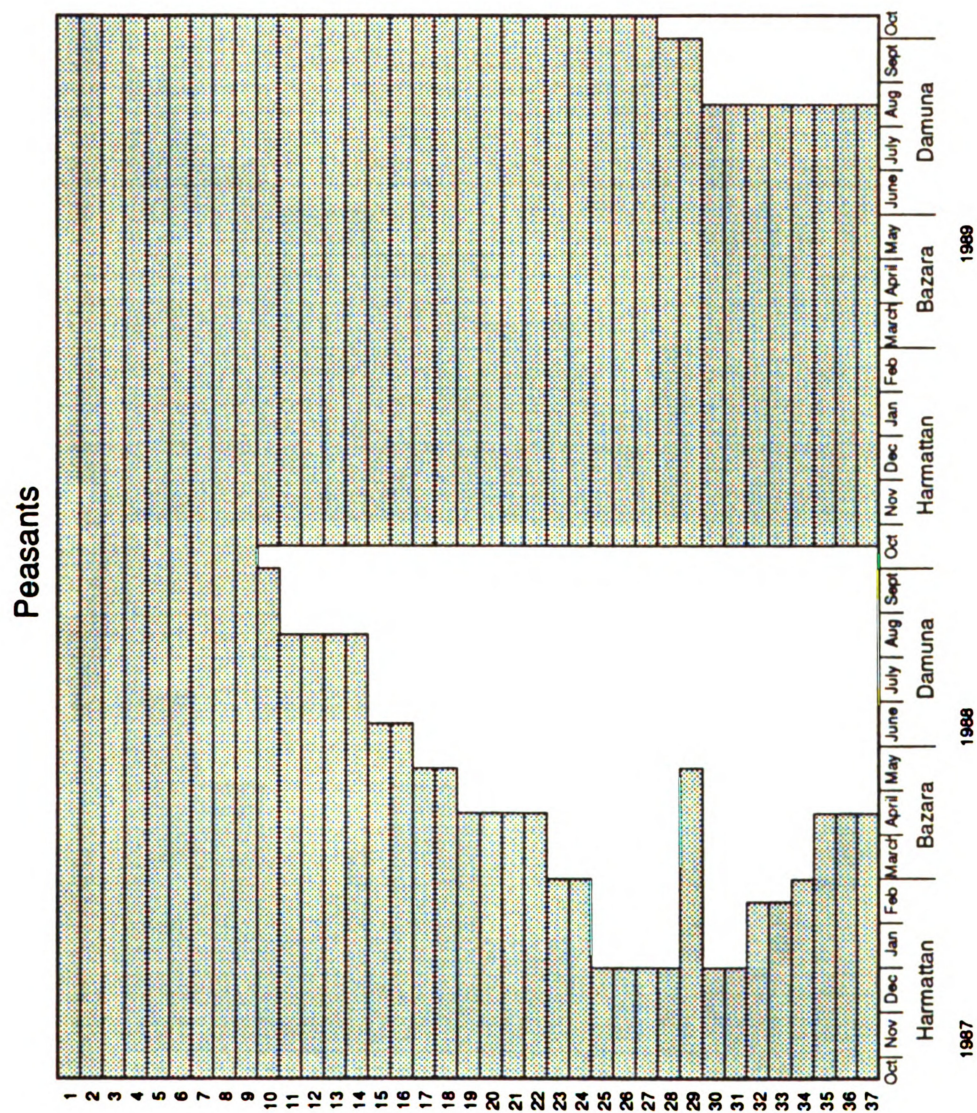


Figure A4.3: Levels of Self-Sufficiency in Grains. Amarawa

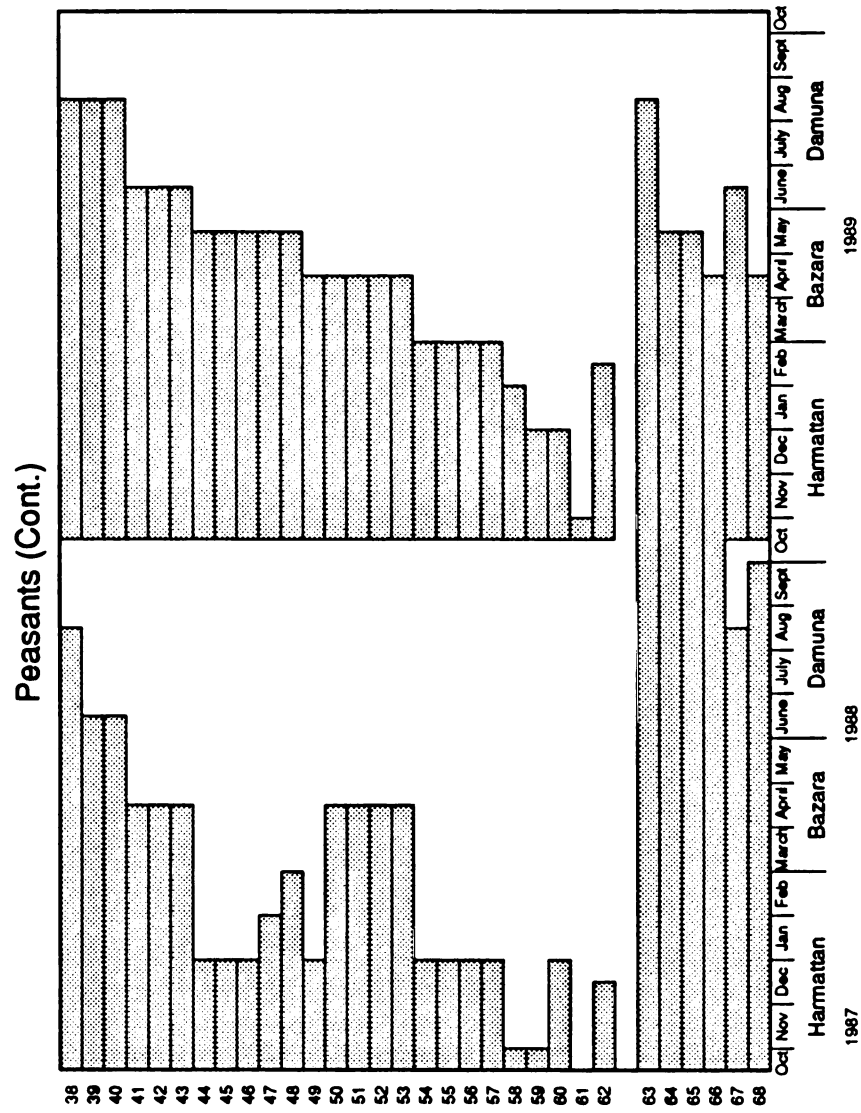


Figure A4.4: Levels of Self-Sufficiency in Grains, Amarawa

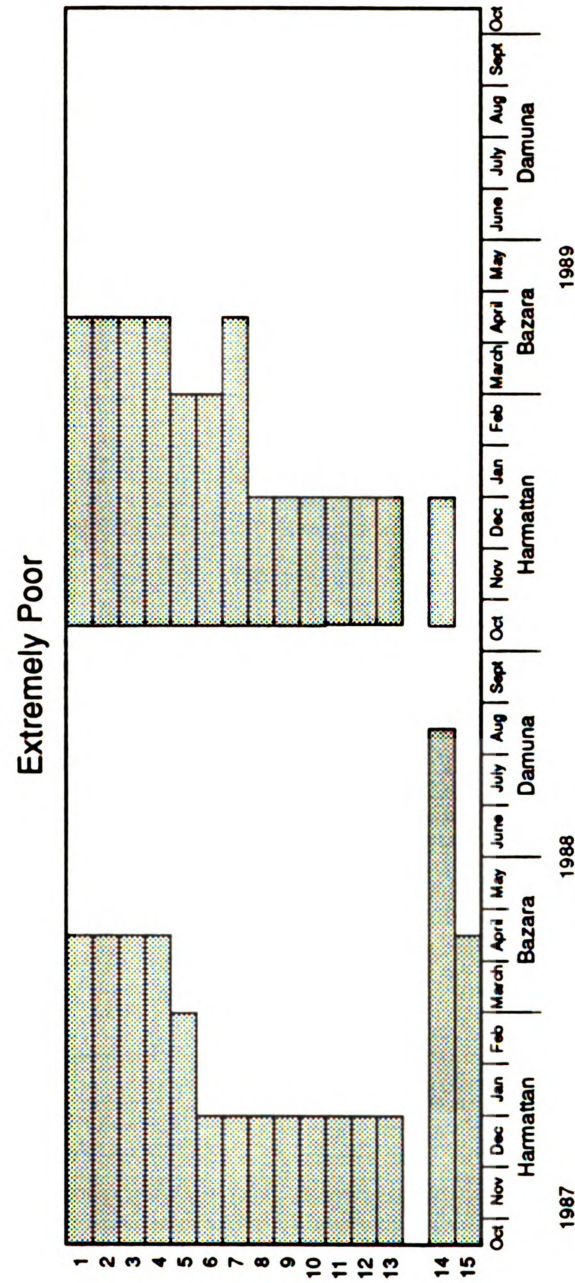


Figure A4.5: Levels of Self-Sufficiency in Grains, Amarawa

Wealthier

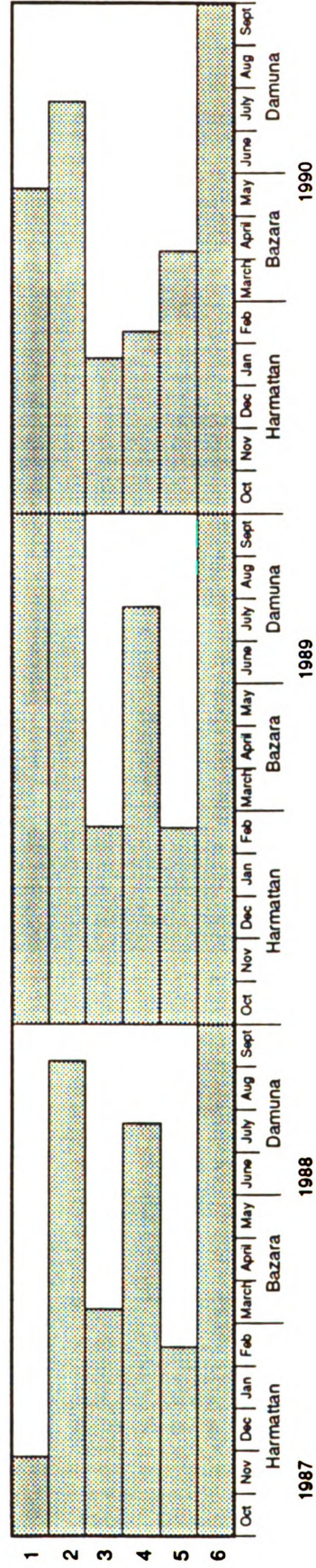


Figure A4.6: Levels of Self-Sufficiency in Grains, Tudun Gudali Mai Ruwa

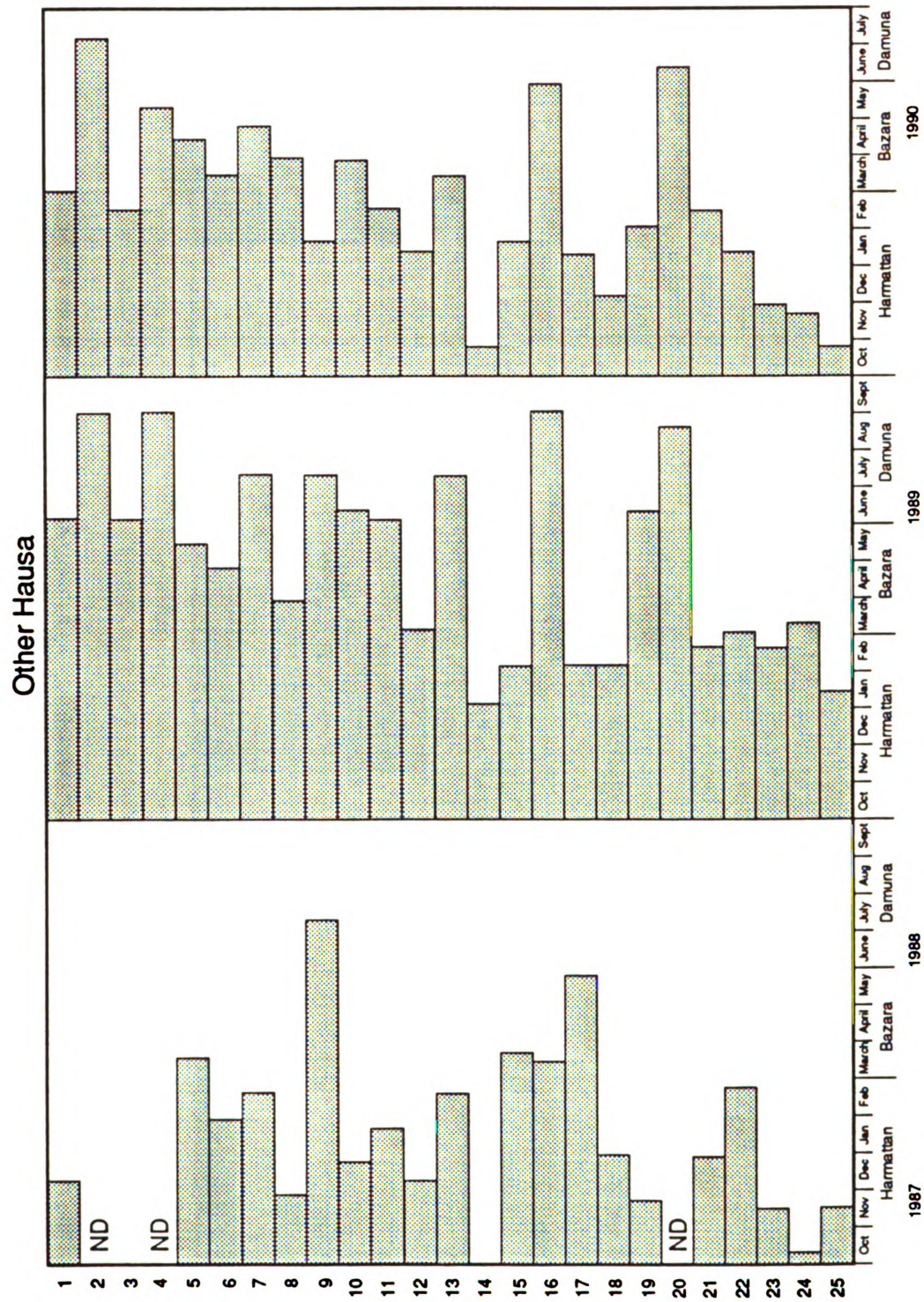


Figure A4.7: Levels of Self-Sufficiency in Grains, Tudun Gudali Mai Ruwa

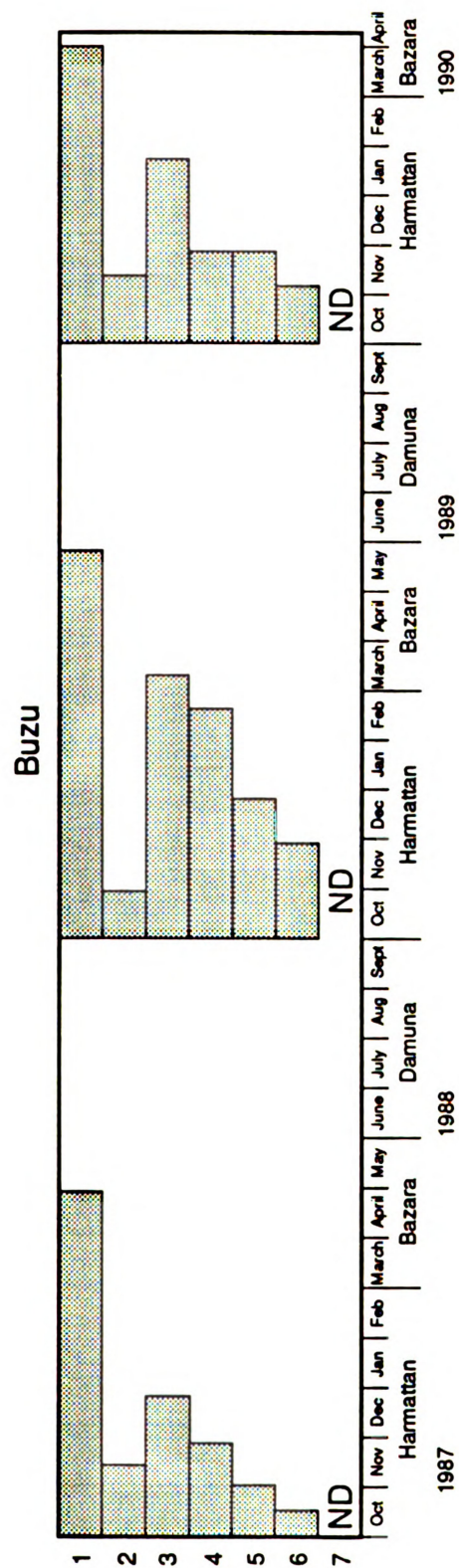


Figure A4.8: Levels of Self-Sufficiency in Grains, Tudun Gudali Mai Ruwa

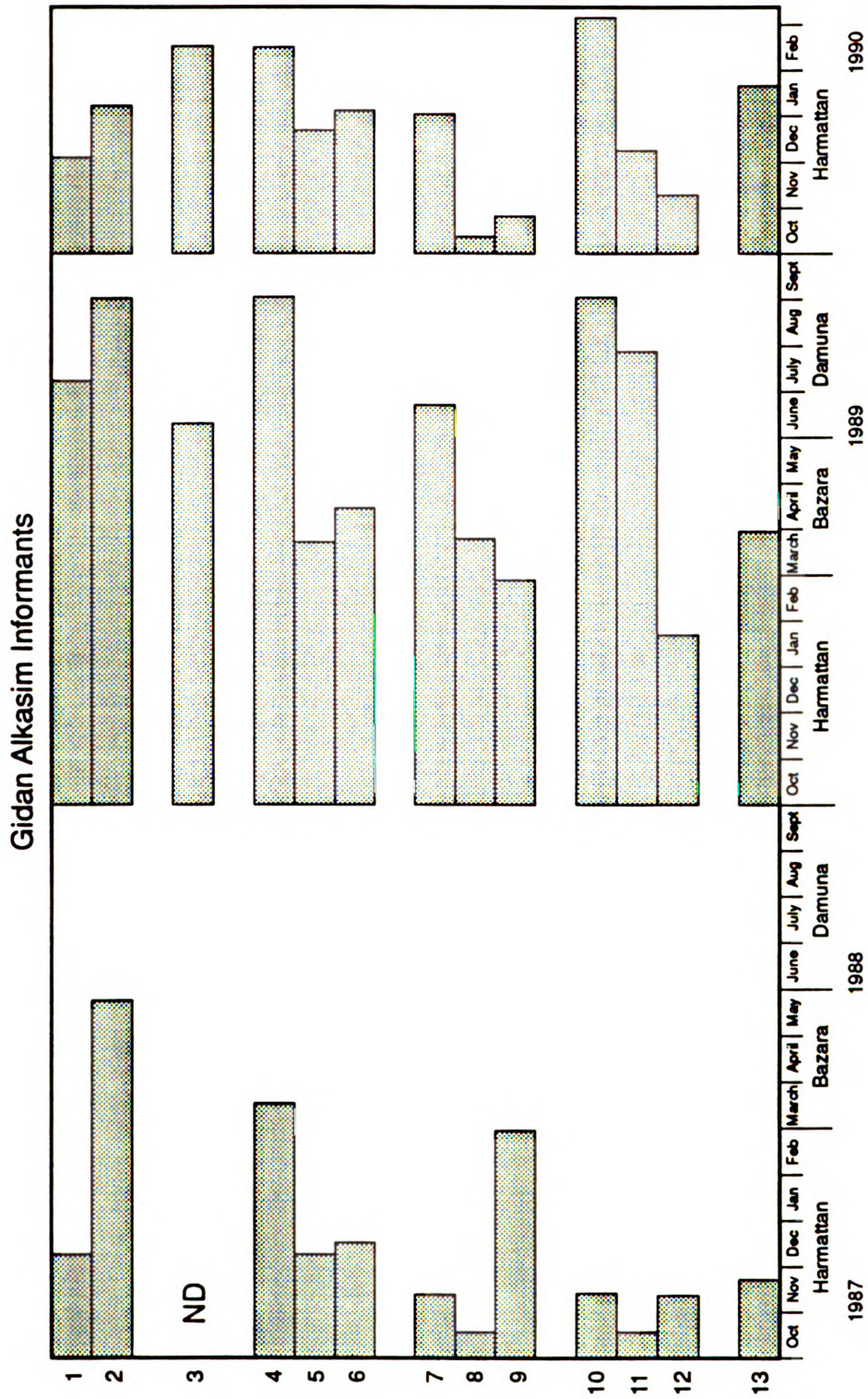


Figure A4.9: Levels of Self-Sufficiency in Grains, Gidan Alkasim Hamlets

Appendix 5: Grain Transactions by Socioeconomic Class,
Amarawa Village, 1988-89

**Appendix 5: Grain Transactions by Socioeconomic Class
Amarawa Village, 1988-89**

	Attajurai/Masu Dan Hali (Wealthy) N=14	Masakaita ("Middle Class") N=39	Talakawa (Peasants) N=81	Jan Talakawa (Extremely Poor) N=15
Sell Grain at Harvest	0	5	17	2
Buy Grain at Harvest	2	5	6	1
Sell Grain to Pay for Harvest Porterage (Cameliers)	1	3	7	1
Sell after Harmattan	0	3	2	0
Sell Livestock/Buy Grain at Harvest; Sell Grain after Harmattan	0	0	1	0
Sell Cowpeas/Buy Grain at Harvest	0	0	1	0
Receive Grain at Harvest in Exchange for Services	0	0	0	1
Involved in Grains Trade (Long Distance or in Illela)	5	10	4	0
No Transactions Reported	6	13	43	10

Appendix 6: Data Pertaining to Self-Sufficiency in Grains,
Sahel Study Area Villages

Appendix 6: Data Pertaining to Self-Sufficiency in Grains

Amarawa Attajirai ("Wealthy") N=9	Self-Sufficient, 1987-88, 1988-89 N=4	≥ 5 Months Deficit, 1987-88 1988-89 N=5
Upland Farms		
Total	27	19
Per HH Head	6.75	3.8
Fadama Farms		
Total	6	11
Per HH Head	1.5	2.2
Government Acres (Rainy Season)		
Total	14	5
Per HH Head	3.5	1.0
No Fadama Farm or Acre (N informants)	1	0
Flooding Reported on Fadama Farm(s), 1988 (N informants)	2	3
Farm(s) Planted, Abandoned, 1988 (N informants)	0	2
Family Labor		
Gandu (N informants)	3	1
Unrealized Potential for Gandu (N informants)	0	2
Sole Adult Male in Compound (N informants)	0	1
No Data (N informants)	1	1
Estimated Grain Consumption of HH and Dependents in Bundles per Week (N informants)	# bundles <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> 1 1 2	# bundles <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> 1 1 1 1 1

HH = Household Head

Appendix 6 (Cont.)

Amarawa Masakaita ("Middle Class") N=30	Self- Sufficient 1987-88, 1988-89 N=10	Self- Sufficient, 1988-89, Deficit, 1987-88 N=12	≥ 5 Months Grain Deficit 1987-88, 1988-89 N=8
Upland Farms			
Total	43	74	31
Per HH Head	4.3	6.2	3.9
Fadama Farms			
Total	23	32	10
Per HH Head	2.3	2.7	1.25
Government Acres (Rainy Season)			
Total	8	17	12
Per HH Head	0.8	1.4	1.5
No Fadama Farm or Acre (N informants)	0	0	2
Flooding Reported on Fadama Farm(s), 1988 (N informants)	5	4	3
Farm(s) Planted, Abandoned, 1988 (N informants)	1	0	2
Family Labor			
Gandu (N informants)	5	7	3
Unrealized Potential for Gandu (N informants)	1	3	2
Sole Adult Male in Compound (N informants)	4	0	2
No Data	0	2	1
Estimated Grain Consumption of HH and Dependents in Bundles per Week (N informants)	# bundles 1 2 3 4 5 6 7 8 2 3 5	# bundles 1 2 3 4 5 6 7 8 1 8 2 1	# bundles 1 2 3 4 5 6 7 8 2 1 1 2 1 1

HH = Household Head

Appendix 6 (Cont.)

Amarawa Talakawa ("Peasants") N=46	Self- Sufficient 1987-88, 1988-89 N=9	Self- Sufficient, 1988-89, Deficit, 1987-88 N=18	≥ 5 Months Grain Deficit 1987-88, 1988-89 N=19
Upland Farms			
Total	30	45	49
Per HH Head	3.33	2.5	2.6
Fadama Farms			
Total	14	23	18
Per HH Head	1.6	1.27	0.9
Government Acres (Rainy Season)			
Total	3	20	8.5
Per HH Head	0.33	1.11	0.44
No Fadama Farm or Acre (N informants)	1	0	4
Flooding Reported on Fadama Farm(s), 1988 (N informants)	3	2	5
Farm(s) Planted, Abandoned, 1988 (N informants)	2	3	4
Family Labor			
Gandu (N informants)	1	4	3
Unrealized Potential for Gandu (N informants)	4	2	7
Sole Adult Male in Compound (N informants)	3	7	8
No Data	1	5	1
Estimated Grain Consumption of HH and Dependents in Bundles per Week (N informants)	# bundles 1 2 3 4 5 6 7 5 3 1	# bundles 1 2 3 4 5 6 7 5 8 4 1	# bundles 1 2 3 4 5 6 7 0 1 0 4 3 2

HH = Household Head

Appendix 6 (Cont.)

Amarawa Jan Talakawa "Extremely Poor" N=13	
Upland Farms	
Total	19
Per HH Head	1.4
Fadama Farms	
Total	8
Per HH Head	0.6
Government Acres (Rainy Season)	
Total	0
Per HH Head	0
No Fadama Farm or Acre (N informants)	7
Flooding Reported on Fadama Farms, 1988	5
Farm(s) Planted, Abandoned, 1988	0
Family Labor	
Gandu (N informants)	4
Unrealized Potential for Gandu (N informants)	2
Sole Adult Male in Compound (N informants)	7
No Data (N informants)	0
Estimated Grain Consumption of HH and Dependents in Bundles per Week (N informants)	# bundles <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> 4 6 2 1

HH = Household Head

Appendix 6 (Cont.)

Tudun Gudali Mai Ruwa Hausa Talakawa "Other Hausa" N=14	Self-Sufficient, ≥ 8 months, 1988-89, 1989-90 N=5	Self-Sufficient, ≤ 5 months, 1988-89, 1989-90 N=9
Upland Farms		
Total	13	16
Per HH Head	2.6	1.8
Debagi Farms		
Total	1	7
Per HH Head	0.08	0.77
Rafi Farms		
Total	4	10
Per HH Head	0.20	1.1
No Rafi (N informants)	1	1
Farm(s) Planted, Abandoned, 1989 (N informants)	0	1
Family Labor		
Gandu (N informants)	0	3
Unrealized Potential for Gandu (N informants)	3	3
Sole Adult Male in Compound (N informants)	2	3
No Data (N informants)	0	0
Estimated Grain Consumption of HH and Dependents in Bundles per Week (N informants)	# bundles <u>1 2 3 4 5 6 7 8</u> 2 2 1	# bundles <u>1 2 3 4 5 6 7 8</u> 0 2 3 2 2

HH = Household Head

Appendix 6 (Cont.)

Amarawa Talakawa "Peasants" N=59	0-2 Time Intervals Difference 1987-88, 1988-89 N=22 (excluding households self- sufficient 1987-88 & 1988-89)	3-5 Time Intervals Difference 1987-88, 1988-89 N=24	6-8 Time Intervals Difference 1987-88, 1988-89 N=7	Self- Sufficiency 1987-88 > 1988-89 N=6
Upland Farms Total Per HH Head	51 2.3	64 2.7	24 3.4	15 2.5
Fadama Farms Total Per HH Head	27 1.22	26 1.08	12 1.7	7 1.2
Government Acres (Rainy Season) Total Per HH Head	7.5 0.34	26 1.08	4 0.57	12 2.0
No Fadama Farm or Acre (N informants)	4	0	1	0
Flooding Reported on Fadama Farm(s), 1988 (N informants)	5	6	1	2
Farm(s) Planted, Abandoned, 1988 (N informants)	5	5	2	1
Family Labor Gandu (N informants)	3	6	8	4
Unrealized Potential for Gandu (N informants)	7	7	5	6
Sole Adult Male in Compound (N informants)	8	2	3	0
No Data	4	3	0	0
Estimated Grain Consumption of HH and Dependents in Bundles per Week (N informants)	# bundles $\frac{1}{3} \frac{2}{12} \frac{3}{3} \frac{4}{2}$ $\frac{5}{2} \frac{6}{6} \frac{7}{7} \frac{8}{8}$	# bundles $\frac{1}{1} \frac{2}{13} \frac{3}{9} \frac{4}{0}$ $\frac{5}{1} \frac{6}{6} \frac{7}{7} \frac{8}{8}$	# bundles $\frac{1}{2} \frac{2}{4} \frac{3}{1} \frac{4}{1}$ $\frac{5}{5} \frac{6}{6} \frac{7}{7} \frac{8}{8}$	# bundles $\frac{1}{1} \frac{2}{4} \frac{3}{1} \frac{4}{1}$ $\frac{5}{5} \frac{6}{6} \frac{7}{7} \frac{8}{8}$

HH = Household Head

Appendix 6 (Cont.)

Amarawa Masakaita "Middle Class" N=28	0-2 Time Intervals Difference 1987-88, 1988-89 N=10 (excluding households self- sufficient 1987-88 & 1988-89)	3-5 Time Intervals Difference 1987-88, 1988-89 N=10	6-8 Time Intervals Difference 1987-88, 1988-89 N=5	Self- Sufficiency 1987-88 > 1988-89 N=3
Upland Farms Total Per HH Head	35 3.5	50 5.0	33 6.6	14
Fadama Farms Total Per HH Head	21 2.1	21 2.1	11 2.2	4
Government Acres (Rainy Season) Total Per HH Head	9 0.9	20 2.0	3 0.6	3
No Fadama Farm or Acre (N informants)	2	0	0	1
Flooding Reported on Fadama Farm(s), 1988 (N informants)	3	4	1	1
Farm(s) Planted, Abandoned, 1988 (N informants)	1	1	0	1
Family Labor Gandu (N informants)	5	1	3	1
Unrealized Potential for Gandu (N informants)	4	4	0	2
Sole Adult Male in Compound (N informants)	4	1	0	0
No Data	1	1	0	1
Estimated Grain Consumption of HH and Dependents in Bundles per Week (N informants)	# bundles $\frac{1}{1} \frac{2}{2} \frac{3}{3} \frac{4}{2}$ $\frac{5}{1} \frac{6}{0} \frac{7}{0} \frac{8}{1}$	# bundles $\frac{1}{1} \frac{2}{0} \frac{3}{4} \frac{4}{3}$ $\frac{5}{1} \frac{6}{0} \frac{7}{1} \frac{8}{0}$	# bundles $\frac{1}{0} \frac{2}{1} \frac{3}{2} \frac{4}{1}$ $\frac{5}{0} \frac{6}{0} \frac{7}{1} \frac{8}{0}$	# bundles $\frac{1}{0} \frac{2}{0} \frac{3}{2} \frac{4}{0}$ $\frac{5}{0} \frac{6}{0} \frac{7}{1} \frac{8}{0}$

HH = Household Head

Appendix 6 (cont.)

Tudun Gudali Mai Ruwa Hausa Talakawa "Other Hausa"	0-2 Months Difference, Self-Sufficiency, 1988-89, 1989-90 N=10	4 Months or More Difference, Self-Sufficiency, 1988-89, 1989-90 N=6
Upland Farms		
Total	18	19
Per HH Head	1.8	3.2
Debagi Farms		
Total	7	0
Per HH Head	0.7	0
Rafi Farms		
Total	11	9
Per HH Head	1.1	1.5
No Rafi (N informants)	1	0
Farm(s) Planted, Abandoned, 1989 (N informants)	1	1
Family Labor		
Gandu (N informants)	2	2
Unrealized Potential for Gandu (N informants)	6	3
Sole Adult Male in Compound (N informants)	2	1
No Data (N informants)	0	0
Estimated Grain Consumption of HH and Dependents in Bundles per Week (N informants)	# bundles <u>1 2 3 4 5 6 7 8</u> 1 2 4 3	# bundles <u>1 2 3 4 5 6 7 8</u> 0 2 2 2

HH = Household Head

Appendix 7: Local Sources of Off-Farm Incomes, Sahel Study
Area Villages

Appendix 7: Local Sources of Off-Farm Incomes, Amarawa Village

Attajirai/Masu Dan Hali (Wealthy) (N=14)

	f
<u>Marketing</u>	13
mattresses	2
fish	1
peanut oil	1
unspecified	9
<u>Tobacco Brokerage</u>	1
<u>Currency Trading</u>	1
<u>Koranic Scholarship</u>	1
<u>Masonry</u>	1
<u>Canteen Ownership</u>	1

Masakaita ("Middle Class") (N=39)

	f
<u>Marketing</u>	28
grains	10
fish	3
pots and pans	2
cowpeas	2
peanuts	2
vegetables/fruits/condiments	1
flour	1
tobacco	1
chickens	1
cosmetics	1
unspecified	7
<u>Koranic Scholarship</u>	5
<u>Tailoring</u>	3
<u>Livestock Trade</u>	2
<u>Butchering</u>	2
<u>Barbering</u>	1
<u>Security Guard</u>	1
<u>Labor</u>	1
<u>Currency Trading</u>	1
<u>Gasoline Trading</u>	1

Appendix 7 (Amarawa Cont.)

Talakawa ("Peasants") (N=81)

	f
<u>Marketing</u>	45
vegetables/fruit/condiments	8
tobacco	8
fish	8
grains	4
petty trade	3
cola	3
firewood	2
kerosine	1
cowpeas	1
peanut oil	1
sugar	1
candy	1
scrap metal	1
chewing sticks	1
fodder	1
new seed varieties	1
unspecified	8
<u>Labor</u>	19
<u>Koranic Scholarship</u>	9
<u>Family Support</u>	6
<u>Tailoring</u>	3
<u>Livestock Trade</u>	2
<u>Security Guard</u>	2
<u>Bicycle Repair/Leasing</u>	1
<u>Barbering</u>	1
<u>Butchering</u>	1
<u>Carpentry</u>	1
<u>Mat-Making</u>	1
<u>Cobbling</u>	1
<u>Embroidery</u>	1
<u>"Full Time Farmers"</u>	2

Jan Talakawa (Extremely Poor) (N=15)

	f
<u>Marketing</u>	6
petty trade	3
traditional medicine	2
firewood	1
<u>Labor</u>	9
<u>Family Support</u>	2
<u>Alms</u>	2
<u>Traditional Surgery</u>	1

**Appendix 7: Local Sources of Non-Farm Incomes,
Tudun Gudali Mai Ruwa**

Wealthier (N=5)

	f
<u>Marketing</u>	5
vegetables/fruits/condiments	3
grain	1
cola	1
<u>Livestock Trade</u>	2
<u>Labor</u>	2

Other Hausa (N=29)

	f
<u>Marketing</u>	7
vegetables/fruits/condiments	6
kerosine	2
cola	1
grain	1
unspecified	1
<u>Labor</u>	10
<u>Livestock Trade</u>	8
<u>Butchering</u>	4
<u>Sorghum Stalk Bed Manufacture</u>	3
<u>Barbering</u>	2
<u>Camel Porterage</u>	1
<u>Tailoring</u>	1
<u>Radio Repair</u>	1
<u>Alms</u>	1

Buzu (N=11)

	f
<u>Marketing</u>	5
modern rope	3
traditional medicine	1
fodder	1
<u>Labor</u>	4
<u>Livestock Care</u>	1
<u>Smithing</u>	1
<u>Clay Brick Manufacture</u>	1

**Appendix 7: Local Sources of Non-Farm Incomes,
Gidan Alkasim Hamlets**

Wealthier (N=4)

	<u>f</u>
<u>Marketing</u>	4
vegetables/fruits/condiments	4
<u>Livestock Trade</u>	1
<u>Koranic Scholarship</u>	1

Others (N=14)

	<u>f</u>
<u>Marketing</u>	7
vegetables/fruits/condiments	3
modern rope	3
unspecified	1
<u>Livestock Trade</u>	3
<u>Labor</u>	2
<u>Butchering</u>	1
<u>Cobbling</u>	1

Appendix 8: Participation in Seasonal Migration, Sahel
Study Area Villages

Years Since Last Seasonal Migration (N Household Heads)

[illegible]

[illegible]

Appendix 8 (Tudun Gudali Mai Ruwa Cont.)

Years Since Last Seasonal Migration (N Household Heads)													
Buzu (N=9) N	0												
4 ~50-59	1		1						1				1
2 ~40-49	1	1											
3 ~30-39	2		1										
0 ~20-29													

Appendix 8: Participation in Seasonal Migration, Gidan Alkasim Hamlets

Years Since Last Seasonal Migration (N Household Heads)														
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	≥ 25	NEVER
N														
Age														
≥ 60	1	1								2			1	1
4 ~50-59		1				1								2
4 ~40-49	1	1												2
0 ~30-39														
0 ~20-29														

Appendix 9: Seasonal Migration Destinations, Sahel Study
Area Villages

**Appendix 9: Seasonal Migration Destinations
75 Amarawa Household Heads**

<u>Destination</u>	<u>Frequency Cited</u>
"Kurmi" (southwestern Nigeria)	36
Dandume	20
Gusau	16
Talata Mafara	14
"Adar" (Niger)	10
Zaria	9
Rawaiyu	8
Niamey (Niger)	4
Sokoto	3
Bida	3
Kano	3
Dansadau	2
Funtua	2
Goronyo	2
Jibiya	2
Minna	2
Wanke	2
Zamfara	2
Zuru	2
Accra	1
Argungu	1
"Chadi" (Northeastern Borno State, Nigeria)	1
Dankurmi	1
Dutsen Ma	1
Gada	1
Geshuwa	1
Gigane	1
Gwadabawa	1
Isa	1
Kaduna	1
Kankure	1
Kaura Namoda	1
Kumasi	1
Kwankwasa	1
Mada	1
Maiduguri	1
Otukpo	1
Ruwan Wanke	1
Shinkafe	1
Wurno	1

Appendix 9: Seasonal Migration Destinations
38 Tudun Gudali Mai Ruwa Household Heads

<u>Destination</u>	<u>Frequency Cited</u>
"Kurmi" (southwestern Nigeria)	26
Zamfara	3
Zaria	3
Kaduna	2
Abuja	1
Benin City	1
Dandume	1
Gusau	1
Jos	1
Kano	1
Kontagora	1
Makurdi	1
Onitsha	1

**Appendix 9: Seasonal Migration Destinations
Nine Household Heads of the Gidan Alkasim Hamlets**

<u>Destination</u>	<u>Frequency Cited</u>
"Kurmi" (southwestern Nigeria)	3
Talata Mafara	2
Abuja	1
Dandume	1
Dansadau	1
Makurdi	1
Onitsha	1
Zamfara	1
Zuru	1

Appendix 10: Occupations at Seasonal Migration
Destinations, Sahel Study Area Villages

**Appendix 10: Occupations at Seasonal Migration
Destinations by Socioeconomic Class
75 Amarawa Household Heads**

Attajirai (Wealthy) N=3

<u>Occupation</u>	<u>Frequency</u>	<u>Cited</u>
Marketing	1	
Koranic school	1	
Water selling	1	

Masakaita ("Middle Class") N=20

<u>Occupation</u>	<u>Frequency</u>	<u>Cited</u>
Agricultural wage labor	9	
Koranic school	5	
Traditional construction and agricultural wage labor	3	
Marketing	2	
Tailoring	2	
Petty trade	1	
Trade in chickens	1	
Gardening	1	
Butchering/meat selling	1	
Fishing	1	
Barbering	1	
Music	1	

Talakawa ("Peasants") N=43

<u>Occupation</u>	<u>Frequency</u>	<u>Cited</u>
Agricultural wage labor	27	
Traditional construction and agricultural wage labor	9	
Koranic school	9	
Petty trade	4	
Marketing	4	
Traditional construction	3	
Koranic scholarship	3	
Fishing	3	
Cola nut trade	2	
Porterage	2	
Tailoring	2	
Bicycle repair/hire	1	
Masonry	1	
Weaving	1	
Water selling	1	
Meat selling	1	
Motor park work	1	

**Appendix 10: Occupations at Seasonal Migration
Destinations by Socioeconomic Class
75 Amarawa Household Heads
(continued)**

Jan Talakawa ("Extremely Poor") N=9

<u>Occupation</u>	<u>Frequency Cited</u>
Agricultural wage labor	3
Traditional construction	3
Koranic school	1
Petty trade	1
Barbering	1

**Appendix 10: Occupations at Seasonal Migration
Destinations By Group
38 Tudun Gudali Mai Ruwa Household Heads**

Gidan Sarauta (Household Heads Affiliated with Village Head) N=5

<u>Occupation</u>	<u>Frequency Cited</u>
Agricultural wage labor	2
Traditional construction	2
Traditional construction and agricultural wage labor	1
Cola nut trade	1

Other Hausa N=25

<u>Occupation</u>	<u>Frequency Cited</u>
Traditional construction and agricultural wage labor	10
Agricultural wage labor	5
Traditional construction	3
Petty trade	3
Meat selling	3
Livestock trading	2
Barbering	2
Cola nut trade	1
Hunting	1
Begging	1

Buzu N=8

<u>Occupation</u>	<u>Frequency Cited</u>
Traditional construction and agricultural wage labor	5
Agricultural wage labor	1
Water selling	1
Traditional medicine selling	1
Snake charming	1

**Appendix 10: Occupations at Seasonal Migration Destinations
Nine Household Heads of the Gidan Alkasim Hamlets**

<u>Occupation</u>	<u>Frequency Cited</u>
Agricultural wage labor	4
Traditional construction	1
Butchering	1
Water selling	1
Cobbling	1
Grain caravanning	1
Begging	1

Appendix 11: Long-Term Migration in the Sahel Study Area
Not Related to Famine

APPENDIX 11: Long-Term Migration in the Sahel

Study Area Not Related to Famine

Immigration Not Related to Famine, 1910s - 1940s

Figure A11.1 portrays migrations to Amarawa from the 1910s to the 1940s that reportedly were not associated with famines. All but one of these migrations were from Niger. Forced labor was the recollected motive for the flight of five families. Of the four families who were living in Dan Tudu, a refugee hamlet constructed in Amarawa's hinterland, two now rank among the "middle class." It is perhaps significant that of the immigrants to Amarawa during the 1910s-1940s interval, the only two who are jan talakawa came as a result of the death or divorce of their mothers.

French forced labor in the 1920s prompted the founding of the Tudun Gudali Mai Ruwa nuclear settlement. For the same reason, one Buzu and five Hausa families joined the settlement during the next decade. Two Hausa informants in Zangon Yamma (the southwestern Gidan Alkasim hamlet) acknowledged that their families had been refugees from military conscription or forced labor in the 1930s or 1940s.

Four Buzu informants cited "kiwo" (grazing/transhumance) as the reason their families migrated to Tudun Gudali Mai Ruwa during these years. Three identified Dan Makeri, Niger, as their village of origin. One stated only that he and his family had come from the east. Their habitations were initially mashekari (base camps) from which they continued practicing transhumance.

KEY TO FIGURE A11.1

<u>Map ID #</u>	<u>Migrants</u>	<u>Migrated from</u>	<u>Time</u>	<u>Reasons Stated for Migration</u>	<u>Other Long-Term Migrations</u>	<u>Present Socioeconomic Class</u>
1	informant's grandparents	Dankadau village	before 1920	unrecollected	no	talaka (peasant/commoner)
2	informant's grandparents	Bimin Konni town	before 1920	Koranic studies	no	talaka (peasant/commoner)
3	informant, informant's mother, father	Dossai village	1920s	forced labor	no	talaka (peasant/commoner)
4	informant, informant's mother, father, other relatives	Malawa village	1930s	forced labor	migrated from refugee hamlet Dan Tudu to Amarawa during Muda (1953-54)	masakaita ("middle class")
5	informant's mother, father, other relatives	Malawa village	1930s	forced labor	migrated from refugee hamlet Dan Tudu to Amarawa during Muda (1953-54)	talaka (peasant/commoner)
6	informant, informant's wife, children	Malawa village	1930s	forced labor	migrated from refugee hamlet Dan Tudu to Amarawa during Muda (1953-54)	masakaita ("middle class")
7	informant's mother, father, other relatives	Malawa village	1930s	forced labor	migrated from refugee hamlet Dan Tudu to Amarawa during Muda (1953-54); family migration during Buhanyya (1984-85)	talaka (peasant/commoner)
8	informant, informant's mother, other relatives	Bimin Konni town	1930s	mother's divorce	no	jan talaka (extremely poor)
9	informant, informant's mother, father, other relatives	Mogheur village	1930s	unrecollected	parents migrated to Amarawa, Saketariya (1913-14); migrations Shekara Kyamro (1931-32) and Muda (1953-54)	talaka (peasant/commoner)
10	informant, informant's father	Raban Marwa village	1940s	death of mother	no	jan talaka (extremely poor)

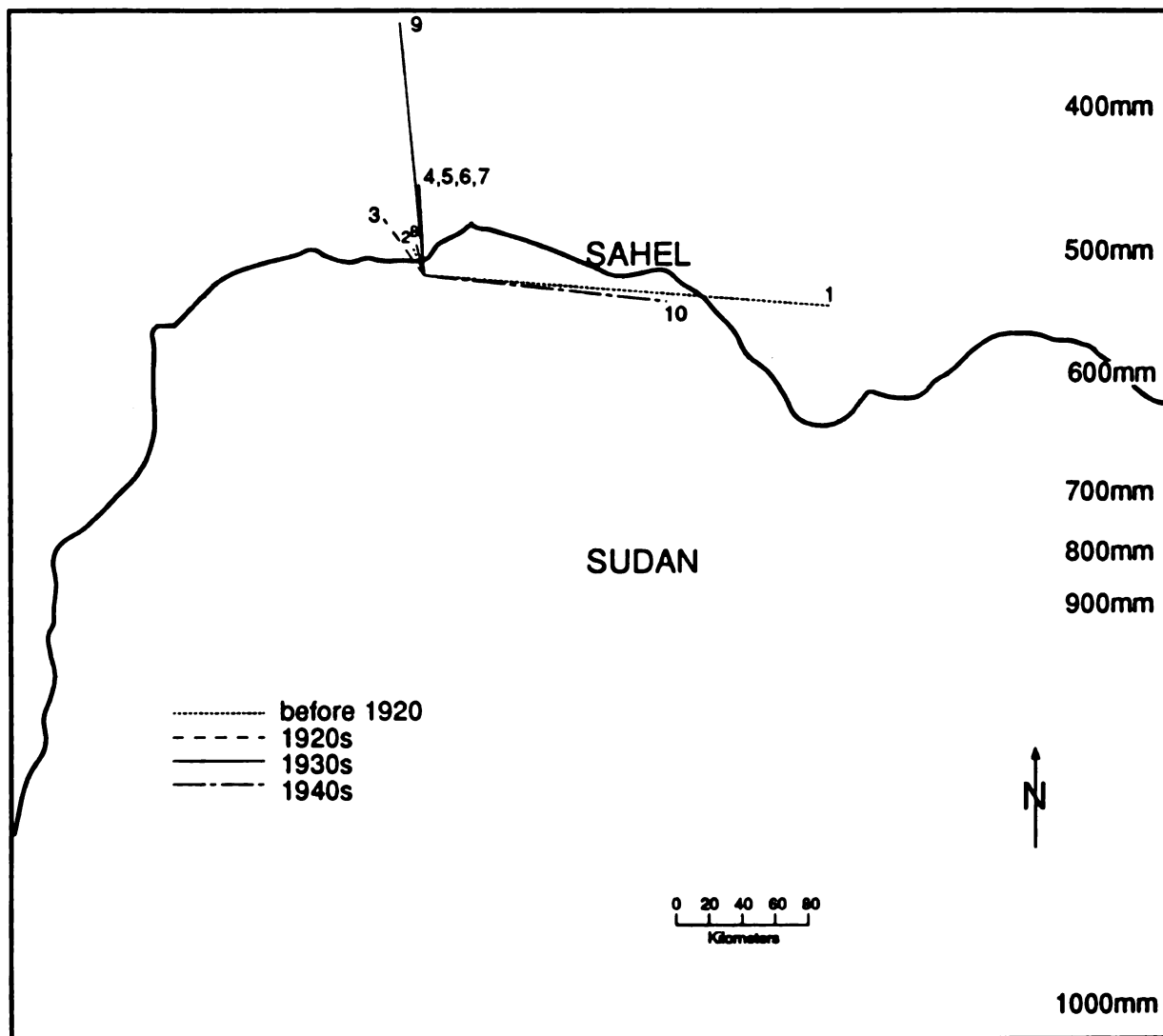


Figure A11.1: Immigration to Amarawa Village during Non-Famine Periods, 1910s-1940s

After a number of years they gradually became involved in agriculture, clearing bushlands to make farms. The last dry season migration with flocks of sheep and goats was in the early 1960s. The family of one Buzu informant arrived in the 1940s in Zangon Yamma during the course of "kiwo," and decided to build a compound and begin farming.

Out-Migration c. 1944 - c. 1952

Informants from Tudun Gudali Mai Ruwa and Gidan Alkasim reported no permanent out-migration from their settlements during the period c. 1944 - c. 1952. Three single young men, one man of uncertain domestic status, and one family reportedly emigrated permanently from Amarawa in these years (Figure A11.2). Two individuals migrated and subsequently returned (Figure A11.3). Al Haji MW made the pilgrimage to Mecca on foot, returning to Amarawa in 1953 after an absence of nearly ten years. S migrated with his young family to Galmi in 1951. He asserted that his migration was in no way caused by the poorly remembered famine Shago or any other hardship. T, who immigrated to Gidan Alkasim during Mazarkwela, spent two years working in the Jos tin mines in the latter half of the 1940s.

Migration c. 1955 - c. 1965

Migration to Amarawa during the apparently famine-free years c 1955 - c 1965 is portrayed in Figure A11.4. The Illela market and cross-border commerce attracted three informants, two of whom were classified as attajirai (wealthy) and one as masakaita ("middle class"). Another

KEY TO FIGURE A11.2

<u>Map ID #</u>	<u>Migrant(s)</u>	<u>Reported Domestic Situation at Time of Departure</u>	<u>Time</u>	<u>Destination</u>	<u>Reported Outcome</u>
1	man	single	1940-52	Zuru area	began as a laborer, now wealthy with four wives
2	family		1940-52	Kwangila town	family head got salaried job in a quarry, left one son in Amarawa with farms, compound
3	man	ND	1940-52	Ile-Ife city	ND
4, 5	men	single	1940-52	Gusau area	have farms, families
6	man	ND	1940-52	Mecca	living in Hausa community in Sudan
7	man	single	1955-65	Malanville (Benin)	became skilled tradesman after apprenticeship
8	man	ND	1955-65	Daki Takwas village	has farms
9, 10	families		1955-65	Tangaza area	have farms
11, 12	men	ND	1955-65	Kurfaya village	have farms, families
13	man	ND	1955-65	Makurdi town	has farms, family
14	family		1955-65	Zana city	involved in marketing
15	man	ND	1967-71	Kao village	has family, is a barber
16	man	ND	1975-81	Ibadan city	ND
17	man	ND	1975-81	Bimin Konni town	works as a taxi driver
18	family head	left family Amarawa	1987-88	Ibadan city	ND
19	man	single	1987-88	Ibadan city	labor to earn money for marriage expenses

ND = No data

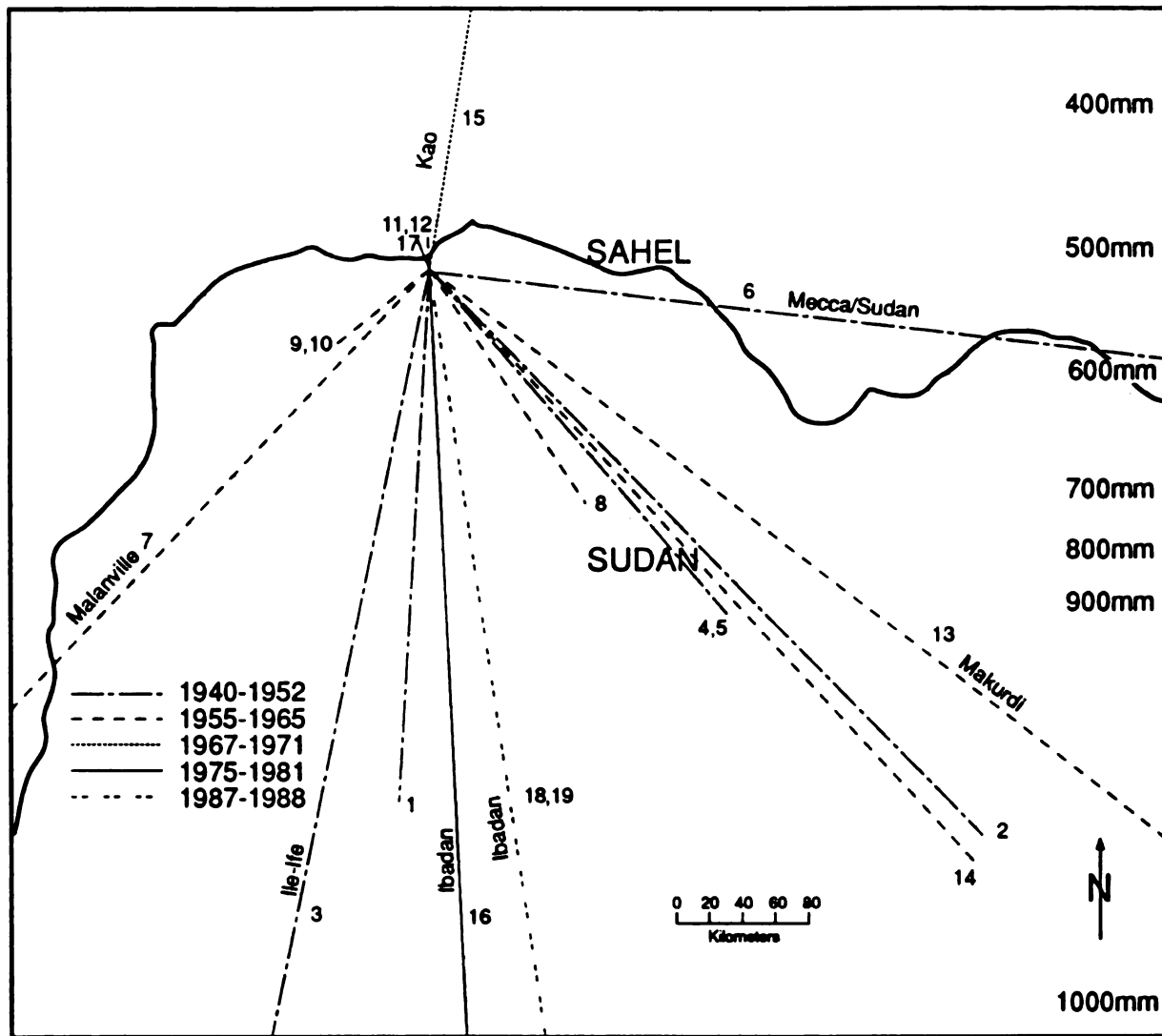


Figure A11.2: Reported Permanent Out-Migration from Amarawa Village during Non-Famine Periods, c.1940-1988

KEY TO FIGURE A11.3

Map ID #	Migrant(s)	Destination(s)	Years of Absence	Reason Stated for Migration	Reason Stated for Return	Other Long-Term Migrations	Present Socioeconomic Class
1	informant	Mecca; Borno	c. 1941-53	pilgrimage	completion of pilgrimage	Muda (1953-54); Muna Sane (1972-74)	talaka (peasant/commoner)
2	informant, informant's wife, children	Galmi village	c. 1951-60	"bida duniya" (to seek the world)	thoughts of home	no	talaka (peasant/commoner)
3	informant	Chafe town	c. 1957-59	wage labor, seeking farmland	to marry	c. 1965-74, in Chafe (with wife 1972-74)	masakaita ("middle class")
4	informant	Takanama village	c. 1959-84	not stated	famine	no	jan talaka (extremely poor)
5	informant	Kano area	c. 1960-64	not stated	not stated	Mai Zobe (1965-67); Buhariyya (1983-85)	talaka (peasant/commoner)
6	informant, informant's wife, children	Jahun village	c. 1965-73	Koranic studies, farming, trade	to help family in Amarawa	no	talaka (peasant/commoner)
7	informant	Illele-Umani	c. 1965-87	trade; to get farms	death of brother	left Illele-Umani 1973 with family for Bacaka village, from whence returned Amarawa	talaka (peasant/commoner)
8	informant, informant's wife, children	Zaria city, Lagos	c. 1968-79	tailoring	not stated	no	talaka (peasant/commoner)
9	informant, informant's wife, children	Lagos, Ghana	c. 1970-87	trading, gardening	was losing expatriate clientele for vegetables; had farms, compound Amarawa	no	talaka (peasant/commoner)
10	informant	Rawlayu town	1975-76	to accumulate capital	farming, trade	no	masakaita ("middle class")
11	informant	Argungu town	c. 1976-78	construction work	opportunity ceased; farms, patronage Amarawa	no	talaka (peasant/commoner)
12	informant	Lagos	c. 1976-79	trading, labor	return to wife, children	no	masakaita (peasant/commoner)
13	informant, informant's wife, children	Zaria city	c. 1978-80	construction work	opportunity ceased; farms in Amarawa	no	talaka (peasant/commoner)
14	informant	Kano city	c. 1979-87	job as motor vehicle driver	not stated	no	masakaita ("middle class")

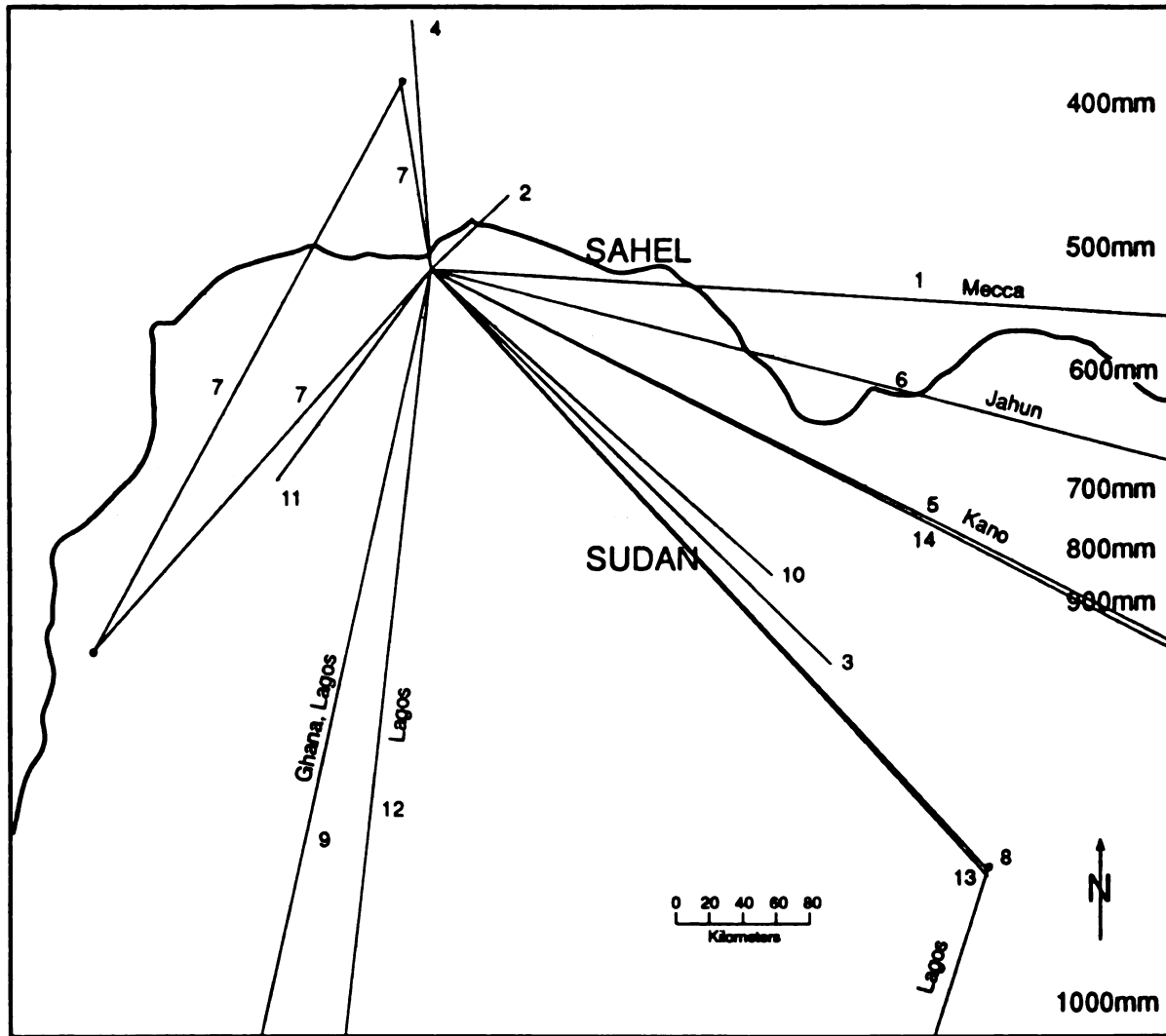


Figure A11.3: Out-Migration from Amarawa Village during Non-Famine Periods and Subsequent Return, c.1940s-1988

KEY TO FIGURE A11.4

<u>Map ID #</u>	<u>Migrant(s)</u>	<u>Migrated From</u>	<u>Time</u>	<u>Reasons Stated for Migration</u>	<u>Other Long-Term Migrations</u>	<u>Present Socioeconomic Status</u>
11	informant, informant's mother, father	Goronyo village	1950s	marketing opportunities	no	masakaita ("middle class")
12	informant, informant's mother	Illela town	1950s	mother's marriage to Amarawa man	no	masakaita ("middle class")
13	informant	Luguhuru village	1950s	not stated	long-term traveling throughout West Africa	masakaita ("middle class")
14	informant, informant's mother	Gaidau village	1950s	death of father	no	jan talaka (extremely poor)
15	informant, informant's wife, children	Zaria city	1960s	marketing opportunities	informant's family later returned to Zaria	attajiri (wealthy)
16	informant, informant's wife, children	Kajiji village	1960s	Koranic teaching, marketing opportunities	no	attajiri (wealthy)
17	informant, informant's wife, children, other relatives	Yar Gada village	1970s	fishing opportunities	one previous similar migration for fishing	masakaita ("middle class")
18	informant, informant's wife, children	Tozai village	1980s	opportunities for patronage, work as security guard	bread seller in Zaria with family (three years, early 1980s)	talaka (peasant/commoner)
19	informant	Karsaka village	1980s	opportunity for work as water seller	two years working as water seller Ambarusa village before coming to Amarawa 1987	jan talaka (extremely poor) (?)

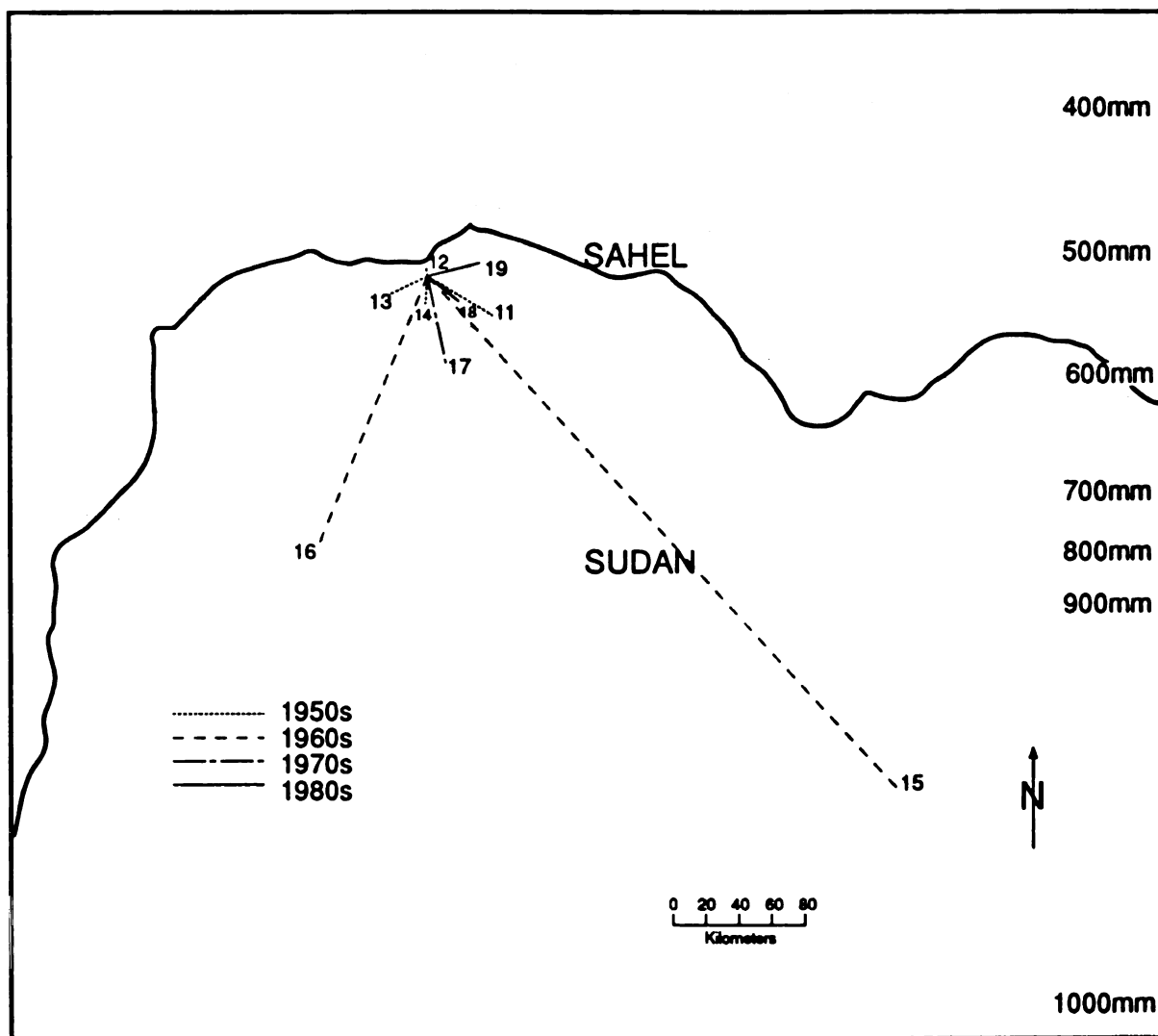


Figure A11.4: Immigration to Amarawa Village during Non-Famine Periods, 1950s-1980s

masakaita informant, a successful tailor, decided to move from Lughuru to Amarawa in the late 1950s. Two informants were brought as boys to Amarawa by their mothers. The individual whose mother married an Amarawa man is now a member of the masakaita group. The informant who came to Amarawa after his father's death is extremely poor. In Gaidau, his natal village, he inherited a small farm that he now lets; in Amarawa he has only his mother's small parcel.

Reportedly no one migrated to or emigrated from the Gidan Alkasim hamlets in these years. One family and one man of undetermined civil status emigrated permanently from Tudun Gudali Mai Ruwa (Figure A11.5). Three informants emigrated alone and subsequently returned to this settlement (Figure A11.6). In one case a family quarrel prompted migration; in another, the informant left to take a salaried job. L undertook what was to be the first of three long-term migrations, leaving Tudun Gudali Mai Ruwa in the late 1950s for Salewa village, Niger, and returning in the early 1960s to become a client of one of the wealthier household heads.

Eight instances of permanent out-migration from Amarawa were recalled, six to rural destinations where the migrants continued in agriculture, and two to urban areas (Figure A11.2). Figure A11.3 represents the emigration during this period of five Amarawa informants who subsequently returned. The return migration of two of these informants occurred during famine. The man who emigrated to

KEY TO FIGURE A11.5

Map ID #	Migrant(s)	Reported Domestic Situation at Time of Departure	Time	Destination(s)	Reported Outcome
1	man	ND	1960s	Kafe village	has farms
2	family		1960s	Godel Jeddawa village	has farms
3	man	ND	1970s	Bakura, Argungu	after trips to Bakuru to attend adult Koranic school, got government job as a cook in Argungu
4	family		1980s	Zaria city	family head a successful trader

ND = no data

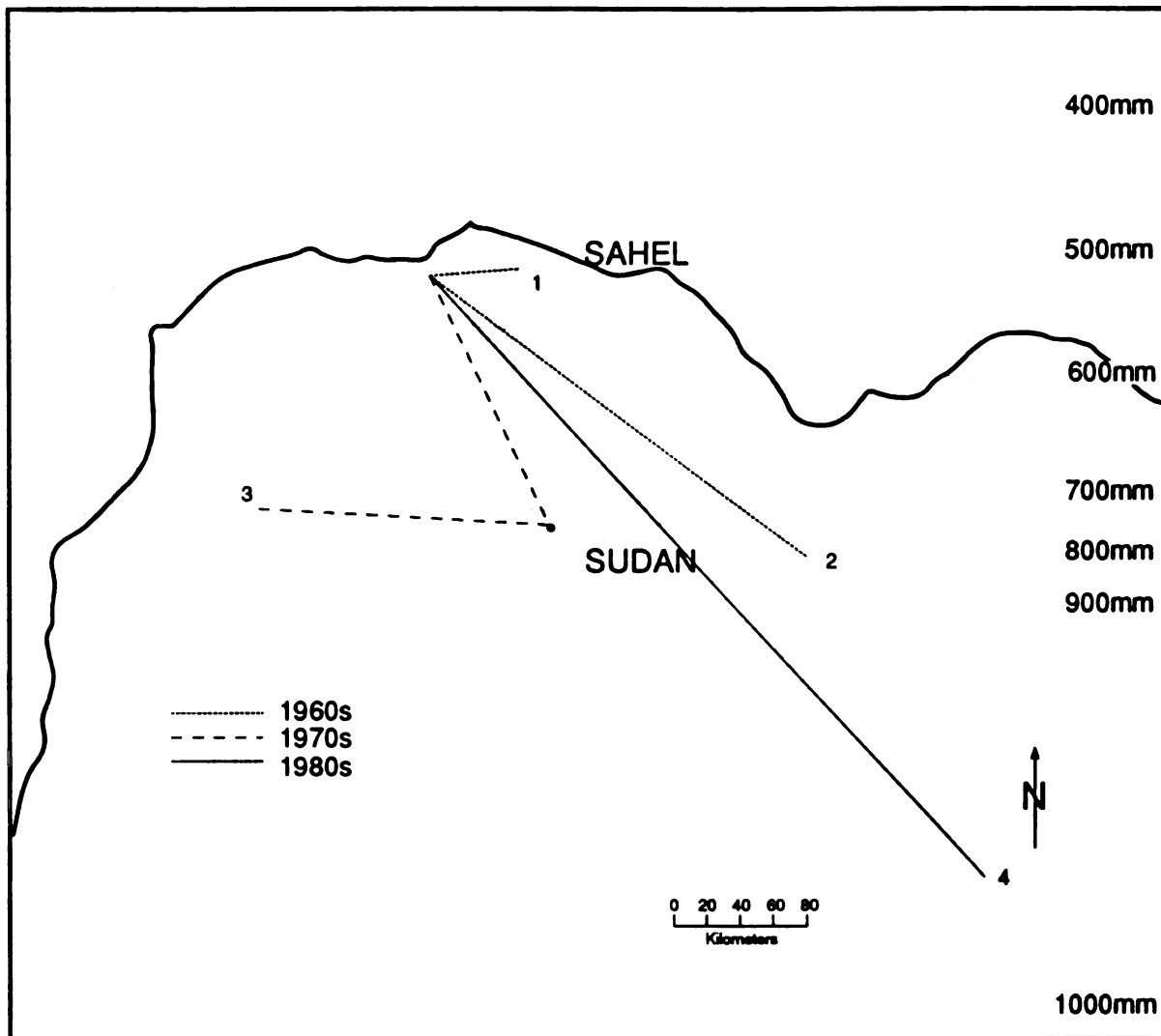


Figure A11.5: Reported Permanent Out-Migration during Non-Famine Periods from Tudun Gudali Mai Ruwa, 1960s-1980s

KEY TO FIGURE A11.6

<u>Map ID #</u>	<u>Migrant(s)</u>	<u>Destination(s)</u>	<u>Years of Absence</u>	<u>Reason Stated for Migration</u>	<u>Reason Stated for Return</u>	<u>Other Long-Term Migrations</u>	<u>Group</u>
1	informant	Birnin Yauri town	early 1960s	opportunity for job as boat pilot	not stated	Buhanyya (1983-85)	"other Hausa"
2	informant	Mammande village	early 1960s	quarrel with family members	not stated	no	Buzu
3	informant	Salewa village	late 1950s-early 1960s	not stated	patronage of wealthy household head	1973-84 Kwatarkwashi, Bungudu	"other Hausa"

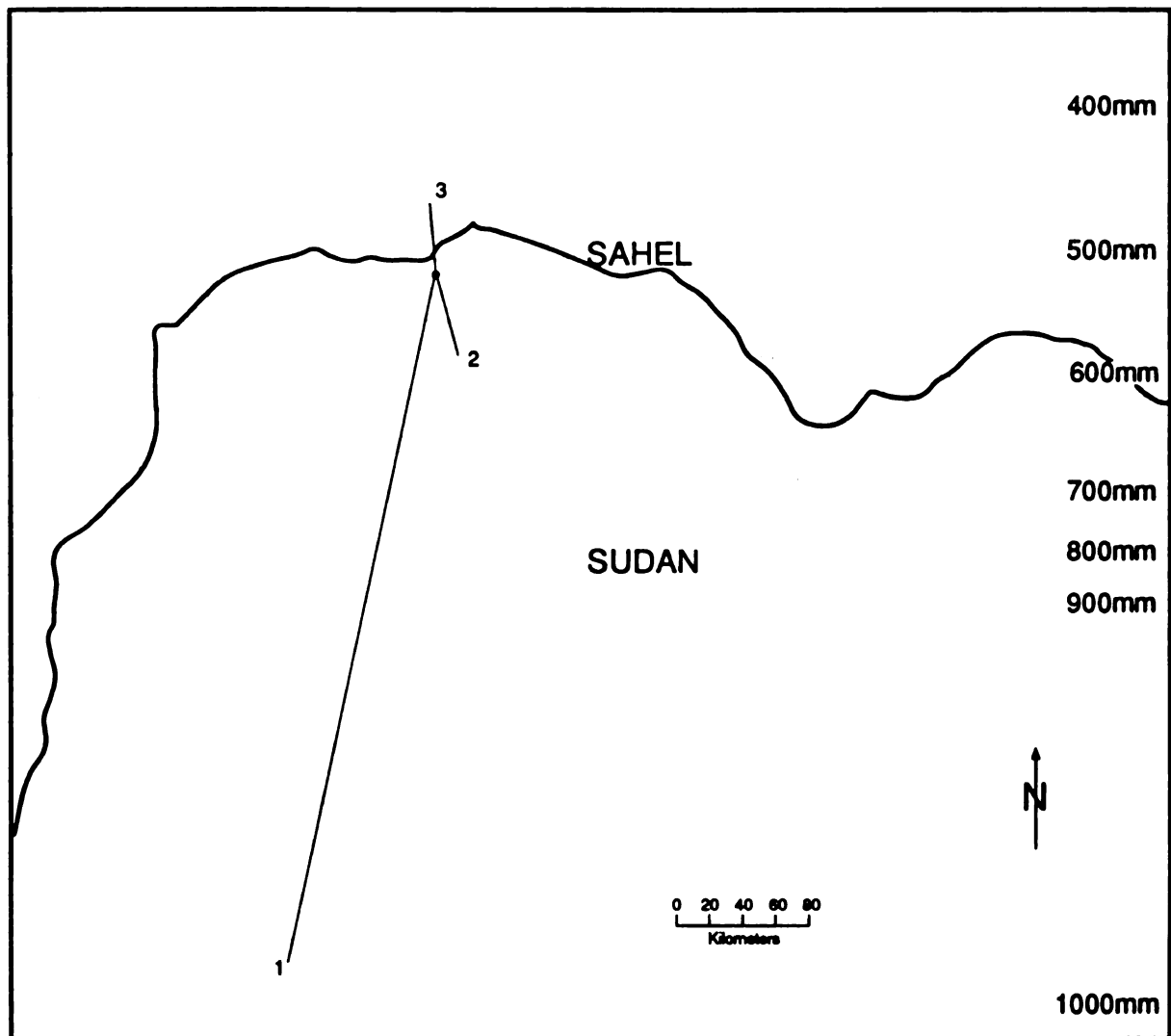


Figure A11.6: Out-Migration from Tudun Gudali Mai Ruwa (TGMR) during Non-Famine Periods and Subsequent Return

Takanama, Niger, in c. 1959 married there, had children, and was farming on his own account. According to this son, the family's migration to Amarawa in 1984 was forced by the hardship of famine. Although classified as extremely poor, the household head maintained rights to two small upland farms and two fadama parcels suitable for dry season vegetable production. His compound consists of two small clay brick rooms surrounded by sorghum stalks. Inside, however, is a cow. The other return migration during famine occurred in 1973. This household head stated that his motive for coming back was to help his mother and other family members in Amarawa. His agronomic and other successes in Jahun, where he had migrated with his wife and young daughters in 1965 and cleared bushlands to make farms, enabled him to do so.

In 1965 MZ migrated alone to the town of Illela-Umani, Niger, where he married, was given farms, had children, and became established in the traditional candy (alewa) trade. He emigrated from Illela-Umani with his family in 1973, eventually taking up residence in Bacaka village, where he received one farm as a gift and later purchased another. Better opportunities in the candy trade, not famine, was cited as the reason for this migration. His return to Amarawa in 1987 was necessitated by the death of his brother. MZ is a talaka ("peasant"), with two upland farms that he cultivates himself, and two very small fadama farms that he loans to his nephew. He states proudly that his

candy trade at the Illela market on Sundays is very remunerative. The sojourns of two single men are the remaining cases from the 1955-65 period of out-migration -- subsequent return. One was working in Chafe town from c. 1957 to c. 1959, the other near Kano from c. 1960 to c. 1964.

Two informants, both considered attajirai (wealthy), became multilocal during the early 1960s. After several years alone as a peripatetic trader in southwestern Nigeria, Benin, and Ghana, YM became a quasi-permanent resident of Malanville, Benin. Here he married and fathered children. He now has a large cement compound, farms on a government agricultural scheme, and is deeply involved in marketing. He returns to Amarawa at least once a year to visit his brother, who supervises the cultivation of YM's six farms. Al Haji MA has made, and continues to make, what he describes as a small fortune trading in used modern clothing. He began this trade in Niamey, where he spent 12 years. He then moved to Alela village, Niger, where he now has two wives and a family. After six years he moved to Sanam village, Niger, where he also has two wives and a family as well as farmland on loan. He apportions his time between these two homes and Illela-Amarawa, where he trades, supervises work on his nine farms, and cares for his family. His compound in Amarawa consists, surprisingly, of large clay brick rooms only partially surrounded by sorghum stalks.

Migration c. 1967 - c. 1972

No immigration to the three study settlements was reported in the interval between Mai Zobe and 1972. Only one incident of permanent out-migration from Amarawa, and one from Tudun Gudali Mai Ruwa, occurred (Figures A11.2 and A11.5). Two Amarawa informants emigrated during this period and later returned (Figure A11.3).

Migration c. 1974 - c. 1982

In the years between Muna Sane and Buhariyya (1974-82), only one instance of in-migration was recorded in the three study settlements (Figure A11.4). This family came to Amarawa primarily to fish in Lake Kalmalo. Classified as masakaita, they have purchased and rented farmland and have constructed a large clay brick compound.

Two instances of permanent out-migration from Katanga occurred during the late 1970s (Figure A11.7). The older brother of Sarkin Noma A, the hamlet's patriarch, migrated with his family to Gidan Kwano, a village east of Kano. Another man moved with some of his family members to Ibadan, where he works in the livestock trade and also farms.

Tudun Gudali Mai Ruwa experienced two instances of permanent out-migration. One man found a government job as a cook in Argungu during the late 1970s; another, after several years of dry season migration to Zaria, established himself there permanently as a trader and sent for his family in 1981 or 1982 (Figure A11.5). Two permanent out-

KEY TO FIGURE A11.7

<u>Map ID #</u>	<u>Migrant(s)</u>	<u>Hamlet</u>	<u>Reported Domestic Situation at Time of Departure</u>	<u>Destination</u>	<u>Reported Outcome</u>
1	family	Katanga		Gidan Kwano village	have farms, plow and oxen
2	family head, some family members	Katanga		Ibadan city	family head cultivates yams, corn; is an assistant to a livestock trader
3	family head	Gidan Alkasim	family head divorced wife, left family Gidan Alkasim	Sokoto city	trades in fish; returned c. 1986 to sell farmland

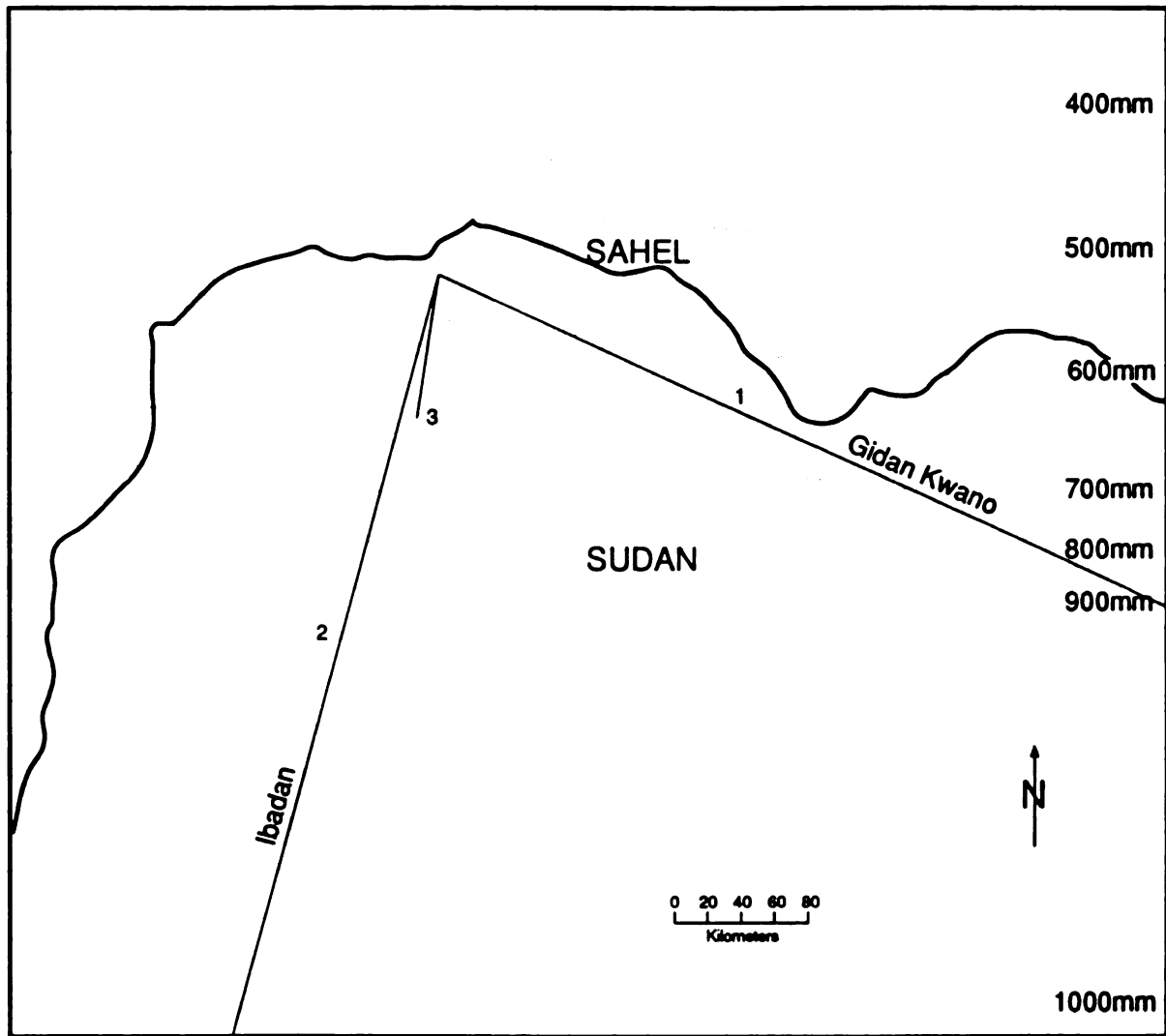


Figure A11.7: Reported Permanent Out-Migration from Gidan Alkasim Hamlets during Non-Famine Periods (late 1970s)

migrations from Amarawa also occurred during these years, both by men of unrecollected civil status (Figure A11.2).

No instances of out-migration and return were recalled as having occurred in this period from either Tudun Gudali Mai Ruwa or the Gidan Alkasim hamlets. On the other hand, five Amarawa informants spent several years outside their village during the middle and late 1970s (Figure A11.3). These migrations may have made possible the accumulation of capital to invest in marketing activities at home. Expanded economic opportunities in urban areas during the oil boom may have facilitated this effort.

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