PERCEPTIONS OF FAMINE AND FOOD INSECURITY IN RURAL NIGER

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A Study of Food Security Perceptions, Tillaberi Department

Social Soundness Analysis: Disaster Preparedness and Mitigation Project

Local Famine Chronologies

Literature Review: Disaster Preparedness and Mitigation

Niamey, Niger
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FORWARD

In preparation for the design of a Disaster Preparedness and Mitigation Project, USAID/Niger initiated work in early 1992 to better understand rural Nigeriens' perceptions of food security. This work focused on the victim's perceptions of disaster which, in the Nigerien context, most frequently equates with drought-induced food shortages. Field work was conducted in the departments of Diffa, Tillaberi and Zinder, preceded by a literature review of material relevant to the Sahel and Niger from a socio-economic perspective. Field work was conducted in Diffa Department by Steve Anderson; in Tillaberi Department by Stryk Thomas; and in Zinder Department by Eva Koeninger. Ellen Taylor-Powell provided additional field work and with Sidi Iddal Mohamed interviewed Tuareg residents in the Tillaberi Department.

The following papers document the findings of this perception study work. They include A Study of Food Security Perceptions, Tillaberi Department; Social Soundness Analysis for the Disaster Preparedness and Mitigation Project; Local Famine Chronologies; and Literature Review: Disaster Preparedness and Mitigation. These selections are considered the beginning steps in an area that is little understood, yet critical to the effective implementation of early warning and response systems.

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A STUDY OF FOOD SECURITY PERCEPTIONS
· Tillaberi Department

Stryk Thomas
March-April 1992

This study explored villagers' perceptions of food security in 11 sites in the arrondisements of Tera, Filingue, and Ouallam in Tillaberi department. Information was gained through formal group and individual interviews, and informal interviews. Information contained in brackets represents the researcher's interpretation of responses and personal observations. Filingue and Ouallam arrondisements were chosen for their record of chronic food deficits, and Tera arrondisement as a comparison due to its generally greater supply of natural resources.

DIOUBOURGA

Tera arrondisement, Dargol canton.
Group meeting with 50 men, mostly middle-aged and older.
Chief, samaria, and elders called for their knowledge of oral history.
Three individual interviews: the samaria, a middle-aged man, and one woman gardener.

Large, densely settled village with a population of 4,970 in three quartiers. The village sits in a shallow, sandy valley thick with acacia trees (similar to the Dallol Bosso). A seasonal river runs to the west of the village. During most of the dry season it is a dry wash. The houses are banco with mud walls lining orderly streets and squares where men meet to talk, giving the village an urban feel. The population is Songhay, and some pastoralist Fulani live in fields nearby in the bush.

History

Dioubourga was founded by a Songhay, Geyko Farmo, who arrived in the area from Gao (Mali). He had fled Gao due to warfare between the Songhay and the Fulani, settling in the present location. The spot was chosen because it had fresh, fertile land without ownership and away from enemies. Being in a valley, the water table was close to the surface and millet grew well. The village was abandoned after conflict with the neighboring village of Firiniare (3 km away). The village moved about from place to place until under the leadership of Zou it came from a place called Anzourou and resettled Dioubourga.

When the village was founded, the area was uncultivated bush with a very low population. It was lush with trees and grass thick enough to severely limit visibility, and there was plentiful

wildlife including lions and gazelle. Rains were heavy and regular, so the small portion of the bush under cultivation produced a good harvest. Now, the trees are slowly dying, field productivity is decreasing, and the water table is receding. Respondents perceived the lower field productivity as stemming from less fertilization of fields by livestock whose numbers have been diminished by recent droughts.

Famines

The respondents at the group meeting spoke in great detail about the various famines they had experienced. The old men reminisced about each famine, and the samaria, a younger man, repeated what they said more clearly and audibly, translating "old men's talk." The famines listed by name, date, meaning of name, cause, and responses mentioned:

ganda beri (early 1900s) refers to how the famine affected a huge area. No rain, villagers resorted to eating wild foods, leaving the village to wander in search of food.
pamparam (1926) great famine. Red crickets ate young millet, villagers ate wild foods and left to look for food.
wande wasu (1930) one sent his wife away because there was only enough food to feed himself. Red crickets again, same responses as before.
haray keyna (1932) small famine. Red crickets again, same responses as before.
ataram (1946) people looked everywhere for food but found nothing. No rain, same responses as before.
ce kuri (1948) people walked in search of food until their feet bled. No rain, same responses as before.
gari (1954) year of the manioc flour. No rain, manioc flour brought from Benin by strangers [colonial authorities?] and sold to village. People also left to search for food.
banda bare (1967) turn your back on others and secretly eat what little you have. Young millet killed by drought, people ate wild foods and left to search for food. [Famine name provoked laughter by respondents who found such unwillingness/inability to share shameful, but humorous in retrospect.]
tombola (1970) those who found food considered it like winning the lottery. No rain, same responses as before.
koporro (1976) received food from a distribution center. No rain, received food aid of millet, wheat, sorghum, oil, and dried milk. Respondents attributed the food aid to Seyni Kounché and his style of government.
jebba zoli (1984) clothing falls off the thin bodies. No rain, received food aid of wheat and sorghum.

The early famines, particularly **ganda beri**, were the worst. Reasons cited included the lack of external assistance (market transport of food, food aid) and the fact that the earlier famines affected a huge area---everywhere one could walk to within a few days. Respondents indicated that they had no expectations of insufficient production or a cycle between good and bad years. They admitted to no recognition of any indicators or early warnings of a bad year. They did emphasize that one of the major impacts of a famine was to drive families to emigrate from the village in search of food, in many cases not to return. Villagers replied that they continued to

live there despite a recent history of insufficient production out of pride for their ancestral home and in the belief that the future will not necessarily be bad. They see a cycle of times when they are well off and times when they are not.

Income Sources and Diversification

Villagers indicated that they pursued multiple strategies for producing food and income. Farming was the activity identified as the main source of livelihood. Only old people do not work in the fields---"those too blind to farm." Men cultivate millet, sorghum, cowpeas, and peanuts. Women work some of husbands' fields independently, growing sauce leaf crops such as okra and hibiscus. Other activities engaged in by men include gardening, livestock raising, commerce, forgeron, tailoring, transport, fetching water, labor, butchery, exode, fishing, and making mud bricks. Women engage in gardening, pottery, selling processed foods, fetching water, pounding millet, and gathering/selling wild foods and firewood. The village gardens are located down in and near the riverbed, and contain a variety of vegetables, herbs, and fruit trees. Most activities are done during the dry season, and depending on the year's harvest, additional activities may be taken up in order to make up for poor returns in the fields. Respondents ranked the top sources of revenue as farming, metalsmithing, commerce, and exode. Most activities are done to earn money and to exchange for goods. Exode is to a variety of places, particularly Benin, Ghana, and Komabangou in the Gourma region on the border with Burkina Faso, where villagers mine for gold. Respondents noted that exode earnings are not as profitable as they were in past, and in the Komabangou mines gold is becoming scarcer. Fulani who live near the village take part in few of the above activities. Instead they herd livestock for Songhay villagers, sell milk/exchange for millet, and hold manure contracts with Songhay farmers on whose land they keep their animals.

Perceptions of Food Security

Village respondents indicated that they ate a variety of millet, sorghum, and bean dishes as their staple food. Fruits and vegetables from gardens supplement their diet during the dry season (particularly the late cold season through mid hot season). Their diet is then rounded out by meat, fish, milk, butter, rice, and wild herbs and nuts. Fish is caught from the seasonal river using nets and traps, and wild foods are collected in the nearby bush. One individual interviewed said that his family consumed goat milk in addition to cow milk. Spices, sauce ingredients, rice, millet, processed foods, and meat are bought from vendors in the village and from the markets of Bantara (5 km) and Gotheye (28 km). Most foods which are sold are exchanged as well, usually informally.

Millet and other grains are stored in two types of granaries: grass and banco. Individuals interviewed expressed no preference for one type over the other. He explained that banco granaries are stronger, but pests such as rats can penetrate them as well as grass granaries, and that banco granaries do not allow air to circulate (to prevent millet from rotting) as well as grass ones do.

Seasonal foods such as fruits and vegetables are consumed while they are in season; few individuals try to preserve them by drying or other methods. [I did see fish being dried,

however.] During the soudure, little or no meat is eaten in order to save income. Meals are prepared regularly but in smaller portions.

Perceptions of Individual Vulnerability

Individuals interviewed expressed that during a poor production year or famine, it is the head of household who bears the brunt of the burden of providing for the family. Female heads of households are especially vulnerable as they have housekeeping and food preparation duties to do as well. In times of famine, old people and infants were mentioned as suffering the most in the village. Neither of these two groups has the strength to deal with food stress as well as adults. People without families are also vulnerable as they have less assistance in the search for food or income. In general, respondents spoke of those who are weakened by hunger to the point where they don't have the energy to seek out food or money as "The lightening of their burden is up to God."

Coping

During poor production years villagers intensify dry season activities. Examples were given of expanding garden size and the variety of crops grown, starting gardening where one had not gardened before, and engaging in commerce. Villagers go on exode even in good production years, but during bad years or famines the numbers increase. Respondents spoke of exode as having a long history in the village, with established connections (including kin) in coastal countries, making it appear that exode is one of the village's main coping strategies.

One individual interviewed mentioned the Komabangou mines as a common destination for exode during famines (for himself included), particularly the famine of 1984, but that those who went to mine gold earned little money. Due to the famine, prices for all goods and services were extremely low. He also spoke of how his household rationed food to one small meal a day.

Local Forms of Assistance

The two forms of local assistance mentioned were food gifts in small amounts to the needy in the village, and a charity tithe for kin and relatives who were needy. With the latter, one sets aside one bundle of millet out of ten to give away. Respondents said that there is generally more of this type of assistance now than in the past, but less during the last few years than during the last famine.

Food Aid

During the group meeting, when villagers spoke of their responses to the two most recent famines, they simply said that they received food aid. They no longer talked about other or traditional responses to famine. One respondent spoke of receiving food aid every year since the famine of 1984. Last year his family received three sacks. Food aid was distributed according to the number of households on the chief's income tax lists, with larger families receiving slightly more than smaller ones. The respondent was satisfied with method of distribution.

Several villagers mentioned having participated in a food for work scheme last year. They did soil conservation work on a mesa overlooking the village and were paid in bowls of millet. They approved of the scheme, and would do the work again (for payment, not on their own).

KAKASSI

Tera arrondisement, Dargol canton.
Group meeting at chef de village's house with 11 elders, including samaria, alhaji and one old marabout, a designated historian, who we waited for before starting.
Heated discussion of each question, and chef gave the final "consensus" to me, occasionally oversimplifying.
Three individual interviews: two with middle-aged women (one related the chef) and one man, the secouriste.

Large, densely settled village on plateau 8 km from Niger river. Landscape barer than around Dioubourga, fewer trees, water table much deeper. Seasonal river runs by village, but few gardens since water table is deep. Foot pump 1 km away and seasonal river water and traditional wells next to village.

History
Over 200 years ago, two ancestors followed the Niger river south fleeing conflict. They stayed in the villages of Daraway and Lossa, but kept moving in search of a place where no one else had settled, in order to find safety from enemies and previously uncultivated land. They arrived at the present location at the same time as some Fulani. The Fulani left but the Songhay stayed to found the village of Kakassi. The land was originally lush, and the location chosen for its convenient access to water. Now, field productivity is down, the water table has receded and the river has become seasonal and holds fewer fish.

Famines/Disasters

jamari fumba [early-mid 1800s] "everyone stank." Cause unknown, village abandoned with people going in every direction in search for food. They spent one year away before returning to resettle village. Some families never returned.
zarma ganda jirey [mid-late 1800s] one sold one's child to people from around Ouallam in exchange for millet to eat. Cause unknown and same responses as before.
ganda beri [early 1900s?] see Dioubourga. [Cause and responses not given, I assume responses the same as before.]
wande wasu [1930, see Dioubourga and above] A year remembered for many deaths.
flooding (1951) overflowing of seasonal river by the village ruined nearby fields. Heavy rains ruined fields on hilltops. Village moved to higher ground and many people left in search for food, returning later.
konorra (1972) epidemic "vomiting and diarrhea until you died." Villagers ate Acacia nilotica seed as traditional medicine to survive until they could reach a dispensary. Doctors came to

village to give injections, but arrived "too late."
banda bare see Dioubourga.
jebba zoli see Dioubourga.
ganda beri and **wande wasu** are remembered as the worst famines experienced by the village, for the most number of people died. The distinction was made between a bad production year, which brought hunger and suffering, and a famine year, when people died. Famines were perceived as punishment from God for bad practices or rituals poorly or infrequently performed. "God deserted us," said an elder. Village would perform tam-tams to appease God and to bring about good rains the following year.

Income Sources and Diversification

Cropping, gardening, livestock raising, fetching water and commerce are done by both sexes. The women of Kakassi are known in the area for their production of pottery, which is sold in nearby markets. The two markets frequented by villagers are Kouli Koira (3 km) and Gotheye (8 km). Other activities of the women include midwifery, weaving mats, selling processed and wild foods, gathering and selling fodder and wood, and cropping okra, hibiscus, and sesame. Three women related to the village chef took part in next to none of the above activities, relying instead on the wealth and status of their social position to make up for any food production/income generating shortfall.

The village men crop millet, sorghum, cowpeas, and peanuts. They also engage in rope making, Koranic teaching, transport, labor, fishing, exode, and selling medicine (secouriste). There is a forgeron, weaver, and a butcher (a Hausa) in the village. Nearby Fulani hold manure contracts on village fields and herd livestock for villagers. The only people in the village who do not crop are old people and the butcher. All the nearby farmland has ownership, though not all the land is under cultivation. Some households are short of labor to farm all their fields. Other households which do farm all their fields, but want to increase, can borrow field land from a relative. [Typically in this situation, there is no money involved though a portion of the harvest is set aside for the owner.] Livestock raised included goats, sheep, and cattle. Village elders stated that women's livestock was more intact than men's because men spent their income and assets (such as animals) to look after the family, while women keep their earnings separate. If their husbands provide for the family, they can withhold selling their animals. Respondents indicated that in poor production years households add to and diversify the dry season activities they engage in. The villagers responded that there is a large exode, especially in bad years when most of the young and middle-aged men and a significant number of women (mostly as part of their husband's household) go to Ghana and other coastal countries. At the group meeting the top five sources of food/revenue were given as cropping, metalsmithing, gardening, remittances from relatives and exode.

Perceptions of Food Security

Food consumption in Kakassi is similar to Dioubourga. Villagers indicated that after the harvest, they make a point of eating well, consuming millet, cowpeas, and fish with sauces that do not skimp on ingredients. During the cold season, the diet is supplemented by salad from gardens, sorghum, and rice bought in Gotheye. During the soudure, people ration their food

and mix in wild, gathered foods in order to stretch the food supply, and sell livestock if necessary in order to buy food. Soudure meals were identified by respondents as millet and rice (usually bought) and food aid sorghum. Individuals responded that they produced cereals, garden crops, fish, cowpeas, and some condiments and meat themselves. They bought cereals, processed foods (millet and bean cakes, etc.), condiments, meat, and fruit, and gained through exchange cereals, milk, and butter. They gathered wild tubers, fruit, and leaves.

There was no mention of any taboos regarding talking about food supply and production, although at the end of the group meeting a marabout led a prayer for the coming planting season. [I interpret this as a means of preventing the bad things we had discussed all morning—famines, epidemics, and survival—from recurring.]

Perceptions of Individual Vulnerability/Local Forms of Assistance

All respondents stated that in times of poor production, it is the male head of household who suffers the most, because he carries the burden of providing for the family. The women I spoke with noted that during the famine of 1984 or even the bad year of 1991 those who suffered the most in the village were women whose husbands were on exode, forcing them to become the providers as well as the cooks and mothers. Also, children whose parents were both on exode were identified as among the worst off during a famine year, and on a regular basis. They receive food and shelter from kin and neighbors. Village elders noted that households are of different sizes, and so some can afford to buy food to make up for a crop deficit, and some cannot. Throughout the village, identification of the needy is by word of mouth. Other assistance is given between individuals through labor in exchange for millet. During the last famine (1984) there was an increase in alms giving in the village, but since then it has become rarer again, according to villagers. The harvest has returned, and in the past several years people have been receiving some harvest and income and need less special assistance.

Coping

At both the group and individual interviews, it was stressed that the main impact of famine was to cause migration in search for food. The village was abandoned, and fewer families returned to resettle the village. The women interviewed also gave details into the wild foods exploited by the village during famine times. Fish from the seasonal river was a major source, but in recent years the number of fish had declined drastically. The women attributed this to the river dividing from one channel into several. They seem to regard this change in the river as a bad omen for the village and its future. Gathered plants mentioned included the fruit and blossoms of *Balanites aegyptica*; the leaves of *Leptadenia arborea*, *Maerua Crassifolia*, and *Tribulus terrestris*, and the fruit of *Diospyros mespiliformis*. Not all of the village women gather these foods: those who do bring them back to sell to those who do not. While some of these plants are also eaten in bad production years, the *Maerua* and *Tribulus* leaves are consumed only when people are starving. One man responded that remittances from relatives on exode make a big difference in helping his household survive a famine, though the food/income it brings is less than what they earn themselves through exode, gardening, or commerce.

Food Aid

Food aid received since 1984. Women interviewed identified the food aid as belonging to the men. [When one woman didn't understand what I meant by food aid, her friend said, "You know, the sacks that truck brought the men."] Both men and women responded that the 1991 food relief, when divided, amounted to two sacks per household [enough to last 1-2 months, depending on household size, I have found]. One man told me that it arrived at the right time, during the period of field cultivation [July].

GOTHEYE

Tera arrondisement, Dargol canton.
Group meeting with five elders and chef at chef's house, old quartier.
Chef did most of the talking, but one old man recounted the oral history.
Three individual interviews: a Hausa butcher, a woman from hamlet across the river, and a functionnaire's widow.

A small town densely settled on the banks of the Niger river, population 7,000 in 11 quartiers. Large, regional market, dispensary and administrative post. Majority Songhay, with Hausa, Fulani, and Tuareg in order of predominance. One "old town" quartier with successive quartiers growing up around it in recent years. **Zongo** quartier for other ethnic groups and outsiders, mostly Hausa. Some of these people have been in town for two generations, but others are recent arrivals as adults. Those interviewed responded that they came here for the commercial opportunities along the river.

History

After the breakup of the Songhay empire, the Songhay followed the Niger river south, fleeing warfare. They settled in four places: Ayorou, Namaro Gounga, Karma, and Gotheye. The Gotheye group settled first by a mesa, then moved upstream to the outskirts of the present-day town. Two brothers settled the village, the younger one founding the current town center. They chose the location for the availability of water and previously uncultivated land.

Elders spoke of the Niger river becoming narrower and shallower over time. They explained that the river is now filling up with sediments. The disappearance of the once-prevalent grasses in and out of the water has contributed to soil erosion. Fish were once abundant among underwater grasses, where they fed off the plant and animal matter there. Now, the grasses are becoming choked by sediment, eliminating the preferred environment for the fish. Fish are becoming scarcer as a result. Elders also noted that in the past one rice harvest per year produced a sufficient yield. Now, two harvests need to be culled per year to yield an equal amount of rice.

Famines

gounga hanna (1922) refers to the living and gardening that was done on little islets which appeared in the river. Crickets ate the young millet.

wande wasu (1931-32) see Dioubourga. Crickets ate the young millet.
gari (1954) see Dioubourga.
banda bare (1956)
famine (1973 or 1974) received food aid.
jebba zoli (1984) see Dioubourga.

Respondents at the group meeting were not clear in their information on past famines. The name commonly attributed to the famine(s) of the late 1960s-early 70s they identified with a famine of 1956. On other famines, their information was sketchy.

The worst famine remembered was in 1931-32. It was two years of famine in a row, and there was no external assistance such as food aid or transportation of food for sale to points villagers could reach (such as a market). Villagers were forced to consume their own livestock, which respondents viewed as one of the ultimate signs of deprivation. Respondents drew the distinction between a poor production year and a famine year by the number of villagers on exode and the number of livestock for sale and the prices received. 1984 stuck out in their minds both by the great number of villagers who left on exode to find food and the high number and low prices fetched for livestock at market.

Income Sources and Diversification

Gotheye, being a small town, has a full array of food producing and income earning activities. Men are primarily involved in cropping, gardening, fishing, commerce, transporting water, and exode. The cropping is similar to Dioubourga and Kakassi. In addition, village men farm rice on the banks of the Niger. Women engage in cropping, livestock, gardening, commerce, processed foods, fetching water, pounding millet, and exode. The river allows a long gardening season of onions, lettuce, tomato, eggplant, sweet potato, and fruit trees. Respondents mentioned onions as being especially profitable. These onion gardeners are primarily women. Gardens are private and many have motorpumps which irrigate crops via canals. Forgerons, butchers, leather workers, and other tradesmen and craftsmen are present in the village. At the group meeting elders ranked the top sources of food/revenue as cropping, gardening, and fishing. Fulani in the nearby bush herd animals for others and hold manure contracts with farmers. Only individuals whose ancestors lived in the village have rights to gardening space along the river. Others, such as the Hausa, may hold fields through loans, mortgaging, etc., but they have no access to the land on the river. [I assume that rights over this territory are guarded most carefully by their owners, due to its great profitability.] Some villagers are employed as functionnaires, and so receive salaries. Others have relatives who draw salaries in Niamey or earn income on exode, and send remittances home.

Perceptions of Food Security

The diet is probably similar to that in Dioubourga or Kakassi, but with more consumption of salad, fruit, and fish over a longer period of time, and increased consumption of meat and processed foods. [These are probably due to the proximity of the river and slightly higher incomes than in small villages.] One respondent said that villagers prefer millet over rice, for they find millet more filling and one gets tired of rice if one eats it all the time. Villagers

produce cereals, fruit, vegetables, meat, and some condiments themselves. They buy the same, as well as dry goods, from stores to supplement their own production. Gathering of wild foods probably goes on, but all those interviewed did not engage in it. Food items bought are also exchanged or transferred, as the opportunity arises. For store-bought goods, prices fluctuate according to scarcity and the overhead costs paid by the storeowner. Fruits and vegetables are more expensive at the beginning and end of their seasons. Food consumption patterns are similar to Dioubourga and Kakassi.

Perceptions of Individual Vulnerability

One widow interviewed replied, "He who God wants to suffer will suffer regardless of help given him by other men." Heads of households bear the burden of providing for the family, all respondents said. The widow pointed out that female heads of households are especially vulnerable, since they are performing a husband's duties as well as their own. The elders indicated that large families are needier in bad times, for there is greater burden on fewer adults. They have more small children to feed but cannot contribute to the food supply or income. The widow noted that during the 1984 famine, slave caste Tuareg pastoralists came down from the north looking for food or work. There were too many of them to find assistance, so they grew desperate enough to steal food, and to sift through piles of millet chaff for stray millet seeds. The chef indicated that there were people living in the village but who were not actually registered there. They had come to town during recent famine and poor production years in search of work. According to the chef, these outsiders had caused no problems as a group; there were only disputes among individuals. There is an expression in Zarma/Songhay which says that no matter how much water there is in the river, the river will always accept more. Everyone will accept assistance, whether they truly need it or not. Every little bit helps, and if one has extra, he can give it away or save it in reserve for an emergency.

Coping

Coping strategies were the same as indicated in the smaller villages. Villagers sold livestock, took out loans, went on exode, and begged for food. An elder replied that during one famine he lived with his livestock to share what little he had with his animals. Respondents also mentioned food sharing with relatives and friends, and food rationing: going two or three days without food.

Local Forms of Assistance

"A good friend is better than a good cousin," answered the widow. Favoritism can bring one a long way. Food/money gifts and loans and employment were mechanisms of local aid mentioned. Such assistance can occur between kin, neighbors, friends, and influential figures: chef, marabout, rich person, or alhaji.

Food Aid

The widow felt that corruption needed to be rooted out of the system of food aid distribution: those officials who take their cut of the aid being distributed. There is the perception that these officials are taking their tribute which they feel is their due, but which is in reality corrupt. [Widows in Niger often have the social position where they can afford to be frank.] The only

differences in shares of food relief should be between larger and smaller households (larger ones receiving more), answered respondents.

Respondents indicated that they had experience with a food for work project last year (1991). They had done soil conservation work (reforestation, dune stabilization) and had been paid in bowlfuls of millet. The villagers were in favor of such schemes. Suggestions given by respondents included ensuring that only those who worked received the food. They felt that with the project last year payment had not been adequate. Payment should instead reflect established labor wage of the region, even if payment is in the form of food. The widow indicated that certain work would be refused by many Songhay on the basis of caste: she gave the example of Songhay refusing to work as porters since they belonged to a "higher" caste and refused to debase themselves by doing such work.

KOGORI

Filingue arrondisement, Tagazar canton.
Group interview with chef, imam, schoolteacher, and two young men.
Imam led discussion with dramatic gestures and diagrams drawn in the sand.

A mixed slave caste Tuareg and Zarma village dispersed over several kilometers, starting from the dallol floor at the foot of a cliff and winding up over some dunes onto a plateau. Far end of Kogori has a different chef de village. Households live scattered in their own fields. Little communication between households. Chef is well respected but not well attended as villagers live too far away.

History

Ancestors fled warfare in a place called Malle, settling first in village of Tanka. After a dispute, they moved on, settling in Kogori about three generations ago. They chose the site for its plentiful water and grass, good hunting, and refuge from warfare and slave raiding. When conflict died down, households spread out to homestead fields. Ancestors and brothers stayed in Kogori, founding the village. Since then the village has observed marked degradation of the environment, inconsistency of the rains, and reduction in field productivity.

Famines

ganda beri (1917) refers to hunger over a wide area. Crickets ate the young crops, villagers ate the crickets for food, ate wild foods, and ate and milked livestock.
soudan (?) means that there were enough crickets to fill up a house. Crickets came and ate the young crops. Village was not able to follow same coping strategies, no food available to sustain people so they sought wild foods---a lot of people died. People ate their own livestock; those without animals were given the skins to cook and eat by those who had livestock.
dezey (1931) "the scattering." Millet eaten by underground pests. Village was abandoned in the search for food. Many families still have not returned.

toukoulfa (?)
gari (1954) manioc flour sold.
kiilo (1969)
kogay (1984)
jebba kuru (1990) refers to clothing falling off people's thin bodies.

The early famines, particularly **soudan**, were perceived as the worst. A lack of food aid and of transport for villagers to/from location of food hindered the relief of people's suffering. Not much information was given for the later famines. Respondents implied that responses to the famines remained the same, except that they started receiving food aid famine relief from the 1969 famine onwards. During one of the famines [probably **toukoulfa**, but those interviewed didn't specify], the villagers pooled money, sent some people by camel to the Hausa region to buy food and bring it back. Villagers divided food equally. 1990 was identified as qualifying as a famine year by the village. Other villages in the area perceived it as a bad production year only. [My observation of 1990 was that it was a poor production year, the second in a row. People suffered, but I heard of no starvation.]

Income Sources and Diversification

Villagers identified themselves as farmers, but also stressed the importance of livestock raising and gardening. The principal crops grown are millet, sorghum, and cowpeas by the men and hibiscus, okra, and sesame by the women. Women do not work in the fields [as they do in Gotheye area] but cultivate a small area near the house instead. Gardening, livestock raising, gathering fodder, and commerce were identified as activities of both sexes. Men are involved in rope making, labor, gathering and selling natron, and exode, and there is a leather worker and a weaver in the village. Women engage in mat weaving, processed foods, and gathering and selling of fodder and firewood. The men at the group meeting responded that women earn a significant income from selling mats in the markets of Baleyara and especially Niamey. [In Baleyara, the mats are sold to middlemen for a low price, but in Niamey women can sell the mats themselves for a huge profit. It seems that Kogori women do both.] A few Fulani in the area hold manure contracts and herd livestock for farmers. Respondents indicated that over half the village raised livestock. Goats were the most common, followed by sheep, cattle, and camels respectively in order of abundance. The number of villagers on exode was high, according to respondents. They stressed that slave caste Tuareg women do not go on exode themselves, and they rarely accompany their husbands. The women on exode tended to be Zarma.

[Dry season gardening is significant, according to my observations. In a huge bas-fond area village men grow sweet potatoes and manioc, along with some fruit trees. From experience I know that these food items earn significant income in the markets of Sandire and Baleyara.] Village elders specified, however, that they had only been growing manioc and sweet potatoes for about 40 years, since a Hausa came and introduced them to it. Beforehand, they had only grown cotton in their gardens.

Perceptions of Food Security and Individual Vulnerability

Village elders stated that food security is assured through the ownership of livestock. Such assets could be sold in time of need for food. Since food is extremely expensive during a famine, someone without livestock could not come up with either the money or goods necessary to obtain food for their family. Villagers produce cereals, fruit, and vegetables themselves. They buy cereals (particularly corn, for variety), processed foods, fruit, and vegetables to supplement their food supply. Gathering is done by women on a very small scale for personal use, but not for sale.

Coping

Elders stated that while in a poor production year villagers sold livestock for food, during famine years they often were forced to eat their animals. Also, fields were mortgaged to obtain money to buy food. Villagers indicated that they did not give out loans, for they had no faith in being reimbursed after the famine was over.

The village imam indicated that if little or no dust occurred in rainstorms at the beginning of the rainy season, then the rains would not be good that year. He noted that this indicator no longer held true. The rains had become too unpredictable. He knew of no way to forecast the weather any more.

Local Forms of Assistance

Mechanisms of assistance seem to be limited to alms, food and money gifts, and the mortgaging of fields. [The villagers are very individualistic, and so stress such activities as the ownership of livestock so that one can help oneself in times of need. They have little faith in altruism.] The imam mentioned that in the past, when there was still warfare and slave-raiding in the region, assistance among individuals and within the community was stronger. People used to live in communities as protection against the common threat of conflict and slave taking. But since the arrival of peace, this unity has broken down. People have become divided, living apart from one another and showing little solidarity in work and charity.

TONDI CIRE

Filingue arrondisement, Tagazar canton.
Group meeting with 16 men and 10 women in the evening under community neem tree.
An old woman and old man especially summoned for their knowledge of oral history.
They did most of talking, and young men spoke about exode, current activities.
Two individual interviews: a Fulani man and a Zarma woman.

Dispersed village spread beneath a prominent cliff with a mix of Zarma and Fulani. There are a few households gathered near the village mosque, while the others live down near a bas-fond and others live out in their fields, away from the cliff. There are two men claiming the title of chef, and while both are addressed as chef, it is a third man, the samaria, who wields actual authority. Relations between the ethnic groups seem to be good.

History

The village was settled by Fulani, who came from the west to settle in the fields of another village, Sandire. They lived there under manure contract with Sandire's farmers. For many years the village was part of Sandire, until eventually the Zarma and Fulani living in the area established their own village.

Elders mentioned that in the past land tenure was non-existent, for with the low population there was more land than people could farm and so plenty of terrain to clear and call one's own. "The bush was the only field boundary." Now, the population pressure causes people to move across canton boundaries to farm, creating field boundary disputes between the cantons.

Famines

ganda beri see other villages. Crickets ate the young millet.
soudan "hyenas ate the bodies." Crickets ate the young millet. Villagers ate their livestock and wild leaves and roots to survive.
toukoulfa see Borgo Beri. Sorghum brought wrapped in mats from Tahoua and sold to villagers.
gari see other villages.
banda bare see other villages.
kan ta kala je (1984) "nothing but the providence of God." No rain, villagers traded cattle for millet (one granary full of millet traded for 30 cows), received some sort of loans from government/development agency, and ate the roots of a grass in the temporary lakes.

The elders had trouble dating the famines. They perceived the famine **soudan** as having been the worst, for there was less millet available to buy or receive as a gift or on credit. During recent famines there has been food aid and more individuals with millet to sell, loan, or give.

Income Sources and Diversification

The top sources of food/revenue were ranked by respondents as cropping, herding, gardening, and commerce. The main crops are millet, sorghum, cowpeas, and hibiscus. The men farm, garden, raise livestock, do commerce, make rope, transport, gather and sell fodder and wood, hold manure contracts, herd for others, and go on exode. Women garden, raise livestock, do commerce, make pottery, weave mats, and gather and sell wild foods. Villagers indicated that they only began to garden manioc 30-40 years ago. Only about ten years ago did they start growing contre-saison vegetables. The number of gardens in the village was said to be increasing. Garden produce is sold as well as eaten and shared with kin. Commerce on a serious scale is only done by a limited number of individuals who have the necessary capital. These individuals are involved in trade between Baleyara and Malanville (Benin). [Goods which are cheap in Malanville---yams and millet mostly---are transported and sold in Baleyara, and vice versa with goods cheap in Baleyara---mats, calabashes, and livestock.] This Baleyara-Malanville trade was considered quite lucrative. Other markets for goods and services are Sandire (4 km) and Yedda (10 km). Villagers responded that less than half the village owned livestock. Goats were the most common animals, and then sheep, cattle, and camels, in that order. Livestock

raising is not considered as profitable as it used to be. The herds do not grow in number as they used to because villagers have to sell their animals in order to buy food every time there is a poor production year. Exode is engaged in by both men and women. Respondents claim that over the last 20 years people migrate out and never return so the village population is not growing.

Perceptions of Food Security

Respondents recognized that farming alone will no longer produce an adequate food supply. They perceived that an adequate food supply can only be pursued through diversification of food producing activities: gardening, recessional agriculture around temporary lakes, and fruit tree raising. Villagers produce cereals, fruit, vegetables, milk, and cowpeas themselves. They buy the same when their food supply runs low. Zarma women in the village gather wild foods for consumption and sale, but Fulani women only gather wild foods during famine times.

Perceptions of Individual Vulnerability

Several women interviewed pointed to large families as the households most vulnerable during a famine. Fewer adults have to strive to feed more children. A woman with a large family is perceived as suffering the most. Women respondents stated that during a famine a mother will give what little food there is to her children, and go without food herself.

Coping

Regardless of a good harvest or a poor one, villagers farm all their land and go on exode. In a good year,it is mostly young men who go, and they don't stay long. During a bad production year, more young and some middle-aged men go on exode. Some households also sell a portion of their livestock in order to buy food. Others take out a loan of millet from a wealthy person, and they have to pay the loan back with interest the following year, i.e. if one borrows 20 bundles of millet, one pays back 30 bundles after the next harvest. Women gather wild foods to mix into regular meals in order to stretch the food supply. During a famine year such as 1984, villagers sold their livestock in mass numbers because there was absolutely no food. Food prices would rise so people would try to buy lots of food at once, despite the high price, before it rose any higher. The rush of livestock on the market drove the price per animal extremely low, until one had to sell many animals just to buy a little food. One elder said that during the famine called **soudan**, a goat cost 75 CFA, while a calabash spoonful of millet [about 4 heaping tablespoons] cost 100 CFA. Also during a famine, the village would be all but abandoned as people left in search of food, and those who stayed behind would subsist on wild, famine foods. 1991 was spoken of as a poor production year which produced little millet but lots of grass. Villagers indicated that a year such as this was rare. While people had little food, livestock had been healthy and produced plenty of milk. Cowpeas also did well, so the combination of milk and cowpeas made for a larger food supply than millet alone. This year (1992) livestock prices were rising due to the health of herds, respondents noted.

Villagers interviewed indicated that wild, famine foods were rare in number and quantity in the region. They said that there used to be more than was available now. Many individuals denied knowledge of more than one famine food. Famine foods identified were the fruits of *Balanites*

aegyptica, *Po inari macrophylla*, and *Diospyros mespiliformis*, the leaves of *Tribulus terrestris*, and the roots of a tall grass which grows by temporary lakes, *Echinochloa stagnina*.

Local Forms of Assistance

Forms of assistance mentioned by villagers include food and money gifts among kin and neighbors, alms, and loans of millet from the wealthy, to be paid back with interest after the following harvest. Respondents pointed out that traditional systems of assistance are breaking down. The threat of warfare and slave raiding created tight bonds within the community in the past. Peace and high population are blamed for the breakdown of solidarity in recent times.

BORGO BERI

Filingue arrondisement, Tagazar canton.
Group meeting of 15 elders and middle-aged men at a baptism.
Imam and other marabouts present, even participation from many individuals.
Five individual interviews: a Hausa man married into the village, his Zarma wife, a Fulani herder, and two middle-aged Zarma men.

Large village with a clustered center around the marketplace, more households living off in their fields up to a few kilometers away. Located at the foot of mesas on the eastern side of the dallol. The village has a cereals bank cooperative, weekly market, and a Friday mosque. Population is entirely Zarma with some Fulani living in the nearby bush.

History

Ancestors of the village originated in Songhay country. They traveled down the river, spending time in Namaro and Seberi before migrating north up the Dallol Bosso and settling beneath the mesas at the current location. The ancestors were always farmers and chose the village site for its previously uncultivated land, location next to the mesas which provided a haven from enemies, and the good hunting in the area. Even men in their 30's can remember when there were gazelle, hyena, girarfe, and cape buffalo in the nearby bush. The water table has receded over the years; several locations which were temporary lakes about 30 years ago are now bas-fonds with a water table about four meters below the surface.

Famines and Coping

tama banyaize (1922) one kept the coin for oneself, did not give it to one's kin. No rain.
maouri koni (1932) "the Hausas had some." No rain, villagers went to Hausa country to buy food and transport it back to their families.
haray bero nda sey (1937) refers to people scattering during a time of great hunger. No rain, people abandoned village in search for food.
mangaize koni (1942) "the people towards Tahoua had some." Red crickets ate the millet. Villagers went towards Tahoua to look for food.
tchoukourfou (1951) refers to mats being used as packaging. Crickets ate the millet, sorghum

was brought wrapped in mats and sold in Baleyara.
gari (1953) manioc flour. Too much rain which ruined the millet but there was plenty of grass. Compared to 1991 except much worse, no food at all. Manioc flour brought up from the south.
banda bare (1970) see other villages. No rain, no food aid, food sold in Baleyara.
kogay (1984) "a great dryness." No rain, received food aid, villagers had some money to buy food with, received food remittances from kin on exode.

Villagers observed how the last three years, while not famine years, have been poor production years, each year further draining household resources. 1991 was the worst year since 1984, because few assets or income remained to sell or exchange for food. There has been no time to recover food stocks, livestock, or income savings. Food is cheap on the market, but there is no money to buy it with. However, the 1991 harvest produced cowpeas and grass, so there has been a little food this year. But that had run out by the end of 1991. One old man said to me, "If it wasn't for the cowpeas, you wouldn't have found us here now!" They would have already left in search of food, in other words. In 1984, villagers who were on exode in Cote d'Ivoire bought food for their relatives in Niger and hired a truck to transport the shipment to the village. A list of recipients was included so the food could be properly divided amongst the relatives. In 1991-92, this had yet to occur, and the villagers were unaware whether such assistance was in the works. In 1984, some villagers had obtained millet loans, which were repaid the following year. Others worked in wealthy people's fields, and were paid in millet. In 1991 villagers say that these coping strategies were impossible, for there are no individuals who possess lots of food and can loan or give. Respondents stated that for the 1992 rainy season, there is no seed stock to plant. It has already been consumed by the farmers' families.

Income Sources and Diversification

Cropping, livestock, exode, and remittances from relatives are the top food/revenue earners. Men crop millet, sorghum, and cowpeas. They garden moderately, raise livestock, do commerce, make rope, run Koranic schools, transport materials, gather and sell fodder and wood, and go on exode. There is a forgeron, tailor, and a butcher (Hausa) in the village. Women grow rainy season condiment crops, garden moderately, raise livestock, weave mats, make processed foods, gather and sell wild foods, gather wood, and, rarely, go on exode. The greatest money earners for women are mats and gathered foods, but neither makes much of a difference when it comes to buying food for the household. The only households in the village which do not crop are those of the forgeron and the butcher. The forgeron's fields are farmed for him by community work parties. The butcher is a Hausa outsider who has no fields in the village. Fulani near the village exchange milk for millet, hold manure contracts with Zarma villagers, and herd village livestock. One Fulani interviewed stated that he cropped the field on which he lived, through an agreement with the field owner. He considered cropping and herding as complementary activities, for he was fertilizing his field with manure for free. Exode plays a big role in the village. Most families have at least one member who is on exode, and the rest have a close relative there who sends them remittances.

Perceptions of Food Security

Diet is similar to that of other villages in area. Since the population is almost entirely Zarma, different varieties of wild foods are a regular part of the diet. Even in good years, they are eaten as snacks, and in years when production is worse, these foods substitute for bought ingredients in order to save money and stretch the food supply. One woman interviewed explained that the wild foods eaten during good or poor production years are not all the same as those consumed during a famine. Certain wild foods, while considered edible, taste bad enough that they are only consumed when one is desperate during a famine (i.e. cram-cram seeds).

Villagers produce cereals, legumes, some vegetables and fruit, and milk and meat (rarely). Many households produce only millet and sorghum. Other than gathered foods, the rest of their food supply is bought or exchanged. Villagers buy cereals, legumes, fruit and vegetables, processed foods, meat, and exchange millet for milk with Fulani pastoralists. Food consumption patterns are similar to those of other villages: eating well while there is food, and rationing and skipping meals during the soudure.

Perceptions of Individual Vulnerability

Most respondents answered that the male head of household suffers since it is he who bears the responsibility of providing food for the family. Village men perceived it as shameful if one could not provide for his own family. One woman interviewed, who is from the village but is married to an outsider without relatives in the area (a Hausa from the Dogon Doutchi region), specified that households which do not own their own fields are particularly vulnerable to food stress. Such households are those whose male head does not come from the area and who has no relatives or inherited fields in the area. He relies on obtaining fields through loans and mortgaging. In a poor production year or a famine, this puts him at a disadvantage. Loaned fields can be reclaimed at any time, and during a year of food stress an owner often reclaims his field without warning. He can even reclaim a field after planting and cultivation by the borrower, and the borrower will receive nothing of the harvest despite his work. Also, in times of food stress, villagers who have mortgaged their fields often decide to demand more money for their field. The outsider who holds the field must either give the sum demanded or give up the field, exactly at a time when he needs both money and the field space.

Local Forms of Assistance

No community mechanisms for helping the needy were mentioned. Individual mechanisms include alms, loans between kin, and gifts of food and labor between kin. There is little assistance between individuals who are not related. A Fulani pastoralist responded that he and the other Fulani near the village receive gifts of labor and loans from both their kin and from the Zarma villagers. During famine times, however, he receives no food gifts, even from those villagers whose livestock he herds. In a recovery year after a famine or bad production year, he is sometimes given some millet seed to plant by a Zarma villager.

Food Aid

Food aid is picked up by the village at the canton capital 12 km away. The village is

responsible for transportation; they employ village donkey carts and hire a market taxi to bring the food aid to the village. The aid is divided according to the chef de village's tax list of households, though even those households which have not paid their taxes receive food. The food aid is divided by quartier, and then each chef de quartier divides it among the households in his quartier. Large families receive slightly more than small families. No respondents complained of unfair practices with distribution at the village level. Several perceived cheating occurring at the canton level: when the village representatives arrive late to a food aid distribution, they find that they are shorted their fair share and/or receive the damaged portion (e.g. torn sacks given to them and counted as full sacks). The Fulani responded that he received an equal share of the food aid, and denied any prejudice against the Fulani at a food aid distribution.

ALKAMA

Filingue arrondisement, Tagazar canton.
Group meeting at the school in the late afternoon.
15 men, including chef, elders, and a forgeron.
Six women.
Individual interview with a divorced woman.

A dispersed village spread over a sandy plain and dunes in the middle of the dallol. Households live scattered in their own fields. Houses are round, grass huts and there is little fencing or walls outside of the garden areas. Population is slave caste Tuareg and a few Fulani pastoralists.

History

A woman and her family left the village of Wangara when her husband died. They stopped in Tabla, but did not settle there. A marabout from Tabla led them into the bush to a spot they wanted to settle and homestead. The place was uninhabited and had a lake. He cast some magic to control the spirits and make the place safe for them to settle. As part of the magic, the marabout gave the woman some wheat seeds. He told the woman that if the wheat seeds germinated, then it would be safe for the family to stay there. The wheat grew well, so the family settled and founded the village. The village grew wheat in the moist bas-fonds for generations, though it ceased before the oldest person in the village was born. [No wheat farming for 100+ years.] In the past there was little livestock in the village. Due to warfare and slave raiding, people did not find it advantageous to keep animals.

Famines

tuma banyaize (?) no rain.
soudan (1933) too much rain. Village ate wild foods and carried food on their heads from Hausa region. No livestock in the village to sell for food.
takoro (1952) People from Tahoua brought and sold sorghum wrapped in mats. Villagers also

ate wild foods.
gari (1954) see Borgo Beri. Village had livestock to sell for food by this time.
banda bari (1966) see other villages. Poor rainfall, but grass grew. Not many animals died.
burtchin teyfa (1981) refers to those people who went to a garden and were given food by the garden owner. Drought killed the young millet. Villagers ate manioc and sweet potatoes from their gardens, and since they had money that year, bought rice from the cooperative in Baleyara.
kossou-kossou (1984) "emptiness." No rain, lots of livestock died. Village received food aid.

The early famines were seen as the worst ones, for there had not been external assistance of any kind. During recent famines there had been food available---food aid and food for sale in markets---but no money with which to buy it.

Income Sources and Diversification

The men are involved in farming millet and cowpeas, gardening, making rope, and exode. The two main garden crops are manioc and sweet potatoes, which villagers claim to have grown for over 100 years (one old man said, "For 7000 years."). Gardens are private and vary in size, some as large as a field. Some gardens are situated on the edge of temporary lakes. Respondents indicated that they earn much income from these main crops, which they raise to sell in Baleyara. Other garden crops include lettuce, tomato, and potatoes, along with fruit trees such as mangoes, limes, and dates. The gardening work is begun after the millet harvest, and continues over six months, into the hot season. There is a forgeron, a leather worker, and a weaver in the village. Women are engaged in gardening, livestock raising, selling processed foods, and making artisan goods: mats, fans, and calabash holders. The artisan goods are the main income generator for the women. They sell them in Baleyara market, and buy cloth and other items for themselves with the money. While the income is significant, it does not appear to be enough to buy substantial amounts of food items. At the group meeting, women claimed not to make much money from the artisan goods, but later on one woman confided in me that the sum is significant. Fulani in the area hold manure contracts, herd livestock for others, and exchange milk for millet.

Perceptions of Food Security

Villagers consume a diet similar to that of other villages in the region, and a lot of fruit and vegetables. They receive milk from their own livestock and exchange cereal for it with nearby Fulani. There is little drying of garden produce; what is not consumed by the village is sold. [It is assumed that the pattern of food consumption is similar to that of other villages in the region, but the high amount of intensive gardening done would ensure vegetables in the village diet, causing the soudure to start later than in villages without such gardening activities. In addition, crops like manioc and sweet potatoes are eaten in place of millet or other cereal, allowing millet to last until a later part of the year.]

Coping

Respondents stated that their intensive gardening made a big difference during famine years. In past years, it was as important an activity as farming, but now with the shrinking of temporary lakes and the reduction in the water table it is becoming less productive and less

helpful in a year when the millet fails. Other coping strategies pursued are the sale of livestock for food and exode. Villagers indicated that remittances from relatives tend to be small, since men who spend the rainy season away from the village tend to have their family join them on exode. Villagers continue to raise livestock as insurance against famine, and they mentioned that since 1984, their herds have been slowly rebuilding. But each poor production year inhibits this growth, for a few animals need to be sold off for food to cover the year's deficit harvest. Several bad production years in a row can be as devastating as a famine, for each year reduces their income and assets, their ability to cope with food deficits.

Other

This year there has been renewed discussion and confrontation between the village of Alkama and the Zarma village of Fandou in the canton to the north, over field boundaries. Seyni Kounche is from Fandou, and his brother remains an influential figure in the area. The brother led a move to seize fields belonging to Alkama villagers over the canton boundary. Alkama never had the fields returned to them and this year the dispute has risen again, with violence requiring the intervention of the Sous-Prefet and soldiers. Villagers indicated to me that in light of the poor harvests of the past few years, they want to expand the amount of land they cultivate. They need the fields stolen by Fandou more than ever, and so have renewed the fight to get them back.

BONKOUKOU

Filingue arrondisement, Imaman canton.
No group meeting.
Five individual interviews: 2 elders, 2 merchants, and a leather worker.

A large village on the road to Filingue, at the foot of a line of cliffs. Banco houses and walls line wide, sandy streets. It is a canton capital, and has a dispensary and a large market which draws people from all over the arrondisement and nomads from Mali and northern Niger. The population is mostly Tuareg (of various castes), with an evenly mixed minority of Zarma and Hausa. Some Fulani live in the nearby bush.

History

The Tuareg settlers of Bonkoukou originally came from the pastoral Azawak region to the north, moving south to raid Zarma and Hausa villages. They were led by a man named Akili. When the French came to the region, they fought numerous conflicts with the Tuareg of the area. Finally, under French pressure, the Tuareg came and settled by some cliffs and a huge temporary lake, joining some Zarma already settled there. The place became known as "Bonkoukou" in reference to the temporary lake there. The leather workers arrived in the village at a much later date from Mali. Most are now in their second generation in Bonkoukou.

Famines

Elders I spoke with remembered the early famines of **tama banyaize** and **soudan** and the two

most recent famines of **banda bare** and **kan ta kala je** (1984), but did not mention any in between. There was no knowledge of any famines before **tama banyaize**. Before then, people were healthy and wealthy with livestock. They identified **soudan** as the worst famine, when they drank goat's blood to survive. During other famines, villagers ate wild leaves and roots, and their livestock, and women sifted the sand for stray millet seeds. In 1984, there was a massive loss of livestock. Those nomads who came south in search of relief were given no special treatment and little alms. Since the 1984 famine, respondents have seen no recovery: only 1985 and 1988 had good harvests, and any livestock acquired since 1984 was sold during the bad production years.

Income Sources and Diversification

Everyone in Bonkoukou now farms. The main crops are millet, sorghum, and cowpeas. In the past, the caste heirarchy allowed only some villagers to farm. These farmers traded and paid all the other castes in millet for their goods and services. Now, there is not enough millet for forgerons, leather workers, etc. to be paid in millet, so these groups have begun to farm to produce some of their food themselves. They continue to do their traditional trade. A leather worker indicated that the selling of artisan goods earns significant income. Many artisan goods are made from rare materials such as special wood, and as the materials have become scarce, the price for the goods has risen. The artisans go to more trouble now than they once did to obtain materials, but they can get higher prices for the finished product. A wood carver said that he would walk a full day to reach the place of certain trees he made bowls from. He would spend a week in the bush collecting wood, and then would transport it back by donkey, a ten day trip total in the bush to collect his work materials. [I observed with several artisan caste families that both the husband and wife produce artisan goods and earn income by that means.] Other villagers garden in the dry season. Potatoes and other contre-saison vegetables are grown, as well as some fruit trees. Commerce is another important activity, with the market and a paved road to Niamey giving village merchants the opportunity to buy goods from the bush and sell them to other merchants who take the goods on to Niamey. Zarma women gather and sell wild foods. There are several Hausa butchers. [Many villagers are either functionnaires, former functionnaires (and may have significant income savings), or receive remittances from salaried individuals in Niamey.]

Perceptions of Food Security

People in Bonkoukou indicated that they eat similar foods as people in smaller villages do. [But as they live in a large village on a main road, incomes are higher. This allows villagers to buy a greater variety of fruits, vegetables, meat, and store dry goods. Food consumption patterns are also similar, but since villagers are wealthier than people from smaller villages, they can better supplement their diet during the soudure.]

Perceptions of Individual Vulnerability

A wood carver responded that leather workers and Fulani are the most vulnerable during a famine. Traditionally, both groups rely heavily on livestock for their income. The leather workers kept herds for other Tuareg castes and used the hides from the animals for their trade. When famines occurred in the past which killed a lot of livestock (especially 1984), both groups

were particularly vulnerable due to their dependence on animals. Since Fulani herders were mobile, they were able to cope with a lack of grass by migrating with their herds to better pastures. Tuareg leather workers, settled in as a community's craftsmen, were not able to follow the same strategy. Their herds died from lack of grass and were slaughtered for food.

Coping

Respondents spoke of how in poor production years they sold off livestock and engaged in income generating activities once proscribed by caste. The traditional division of labor is breaking down. Villagers are pursuing multiple strategies, including such work as farming, gardening, and commerce which they once refused to do. During famines people resorted to more extreme behavior. They ate their own livestock, sifted millet grains out of the sand, and ate famine foods: Balanites aegyptica leaves and doum palm roots.

The wood carver pointed out natural signs which clue him in that the rainy season will begin soon. The wind shifts and starts to blow consistently from the west [the end of the harmattan]. Lannea microcarpa begins to blossom and Sclerocarya birrea starts to produce fruit in anticipation of the rains. He indicated that some villagers, upon recognition of these signs, begin to dry plant millet in their fields to get a headstart on the planting season.

TALKADABEY

Ouallam arrondisement, Zarma Ganda canton.
Group interview with the chef and 15 elders as they were fasting in a hut.
Marabout brought out a document in Arabic with a list of famines experienced in the village.
Lively discussion.
Group interview with a Tuareg camp of five families in the nearby bush. Individual interview with an older man.

A small, clustered village situated on an open plain. Banco houses set at various angles to each other, with no orderly procession of streets. The population is 650 in four quartiers. There are two chefs de village: the village is divided into factions. The villagers are entirely Zarma, and there are some nomadic Tuareg who live in the nearby bush. Relations between the two groups are tense. The Tuareg have a range of movement which extends from Ouallam to a point east of Bani Bangou.

History

The founders of the village came from Dakala, spending time in Laaba before settling the village five generations ago. They left to found Talkadabey in their search for fresh land and to escape the high population of their previous village. They settled in a group for protection against wildlife and spirits; the village's name refers to a meeting place of farmers. Now, there is no bush left to clear. All the surrounding land is under ownership, though it is not all currently farmed.

Famines

kow-kow (1892) "the sound of pounding in empty mortars". Red crickets ate the millet.
ize neera (1902) one sold one's children to buy food. Red crickets ate the millet, villagers raided ant nests to steal the food the ants had stored there.
ganda beeri/yolamoru women were in such a hurry to eat the little food they had that they started chewing on their pigtails as well. Red crickets ate the millet. Villagers dug pits, lured crickets into them and then buried the pests.
soudan (1931) see other villages.
yedda koni (1946) "Yedda had some food." Villagers went to Yedda [near Baleyara] to buy food.
gari (1954) see other villages.
banda bari (1966) see other villages.
fuww (1984) "absolutely nothing." No rain.

A marabout read these famines off a list in Arabic he had. These famines were documented as part of a previous study, villagers said. Respondents indicated that **soudan** was the worst famine they had experienced. There had been no food aid and no transport of food to make it available in the village or in nearby markets. Villagers indicated that even in a good year, some individuals did not receive a good harvest: "God didn't grant it to that person." People recognized that some years produce better than others, but they have not noticed any cycle of good and bad years. 1985 was identified as the last year with a good harvest.

Tuareg nomads interviewed remembered the two most recent famines: **banda bare** (1973) and **kan ta kala je** (1984). In 1973, they sold their camels in the Ouallam market for millet. Their goats and sheep were eaten, because their market value was low enough that it was more worth their while to eat them rather than sell them. In 1984, they again lost livestock through sale, but survived with part of their herds intact. Since then, the herds have been slowly increasing. The Tuareg interviewed owned no cattle, and viewed camels as their only famine insurance. They felt only camels could bring in the significant sums necessary to buy food to ride out a famine year. These Tuareg also noted that they do not collect wild foods; they considered this as a Zarma activity.

Income

All village respondents identified the farming of millet, sorghum and cowpeas as their livelihood. They claimed that the only villagers who didn't work in the fields were the elderly. Besides farming, men engaged in gardening, livestock raising, commerce, rope making, transport, gathering and selling fodder, and exode. A small amount of income is also received from remittances from relatives on exode. There is a forgeron, a butcher, a tailor, and a Koranic school in the village. Tuareg leather workers in the bush make products for the village. Women do no field work; instead they cultivate small plots of sauce-leaf plants next to the house. They are also involved in gardening, livestock raising, commerce, mat making (for personal use only), midwifery, and gathering and selling wild foods and wood. Villagers named

the top sources of food and revenue as cropping, herding, exode, and commerce, in that order. The main market is that of Ouallam, 25 km away. Tuareg nomads make their living almost exclusively by livestock raising. Other income is obtained through manure contracts. They do not farm.

Perceptions of Food Security

Many individuals interviewed expressed assurance that they will always manage to get enough food to survive. They believe they will be able to scrape up a little food and income from several sources, a sufficient amount with which to live. "No matter how many children we have, God will feed them all," one older man defiantly said.

Village diet includes cereals, legumes, and very small amounts of meat, vegetables, and milk. Villagers indicated that they only drink cow's milk, so all their milk is derived from the small number of cattle in the village. They produce cereals, legumes, some vegetables and meat themselves. Women gather wild foods to eat in traditional salads. Villagers buy more cereals, legumes, vegetables, and meat to supplement their food supply. There are no Fulani in the vicinity with which to exchange millet for milk, and few cattle in the village, so milk is scarce.

The Tuareg in the area rely heavily on milk in their diet, especially during the transhumance season, they indicated. They drink the milk of any livestock except donkeys. Other parts of their diet include cereals (millet only), meat, yoghurt, and tea.

Perceptions of Individual Vulnerability and Local Forms of Assistance

Those households without livestock are considered the most vulnerable in famine times, for they have fewer assets to sell off in an emergency. These households must send members on exode, which is considered a less favorable alternative.

The mechanisms for assistance within the village are all individual. Villagers cited food gifts, alms, and millet loans (without interest) occurring between relatives and friends.

Coping

Respondents indicated that they expected variability in the harvest from year to year, but do not try to forecast how the rainy season and harvest will be beforehand. Once the rains start, however, they do recognize certain indicators of good and bad years. If there is lots of heat and humidity one month before the rains begin, then the season will be a good one. If the millet germinates and then the rain falls regularly for one month, the rains will be good. But if the wind in the early rainstorms carries lots of dust, then the season will be a bad one.

Respondents gave little distinction between how they cope with poor production years and famine years. The preferred strategy is to stay in the village, eat wild famine foods, and sell livestock for food. Those unable to do so (they don't have sufficient livestock) go on exode/migration until they are able to return. Exode is considered inferior because it means abandoning one's land. It is felt that if one has no land, one has nothing. Also, exode is risky; there is no guarantee that it will be profitable.

Tuareg respondents saw little alternative to herding camels. If one's herds are large enough, one can survive a famine with part of the herd intact. [Camels can live off acacia and other trees in the bush, so they do not need fodder as cows do, for instance.] They indicated that to them a Tuareg without camels is nothing. Those who have lost all their animals go on exode for the sole purpose of obtaining more animals with which to return to herd in the bush again.

Food Aid

Many villagers linked the giving of food aid with the rise to power of Seyni Kounche. They perceived effective distribution of famine relief as being accomplished by a strong, central authority. [They feel that the strong and wealthy should govern, and that part of the responsibility of good government is to take care of weaker, subordinate people.]

Tuaregs made no mention of food aid when discussing their coping strategies. [A conspicuous absence: in every other group interview, respondents brought up the subject of food aid.] It was never clearly determined whether the Tuaregs were given a share of food aid received by Talkadabey villagers.

TCHELA

Ouallam arrondisement, Zarma Ganda canton.
Group interview with chef and 15 older men in the evening.
Elders invited, but didn't show up.
Chaotic discussion dominated by the chef, who tried to give pat answers and talked over the responses of others.
Individual interview with old woman the next morning who sought me out to give me "the truth which the others are hiding from."

A tiny, clustered Zarma village of 250 people built on the upper slopes of a mesa. Overlooks a wide valley. The land is severely eroded around the mesa, and a ravine cuts through the center of the village. The real chef de village has been on exode, working for ONAHA, since 1986. The man appointed as acting chef is not well respected and regarded as ineffective by the village. One half of the village won't work with the other half; the two halves are coincidentally divided by the ravine. [This information given by the Peace Corps volunteer in the village.]

History

Tchela is the oldest village in the area, even older than Ouallam. A rich man in Sargane tried to bring his livestock to drink from the temporary lake near Sargane, but got into a dispute over water rights with the lake's owners. The rich man angrily left the village with his family, settling out in the bush where there were no other villages. He chose a spot on a hill where they could overlook the forest in the valley below. Other families later joined them there, and the village was founded "Tchela," meaning the companionship these other families gave.

At the time the village was settled, there were no other villages in the area all the way to

Sargane, and the land was thick with trees and populated with plentiful wildlife, including lions. What was then a hill has now eroded into a bare-topped mesa and ravines cut down through and around the village.

Famines

soudan (?) see other villages.
yedda koni (?) see other villages. Villagers bought food in Yedda for relatives, and to sell to others.
gari (1955) see other villages. No millet, but grass grew.
banda bare (1967) see other villages. Grass grew, so livestock survived. Villagers ate millet bran and peanuts they had grown and bought, and sold livestock for money and food.
jebba zouroukou (1984) see other villages. No grass or anything grew. Village abandoned in search of food. Livestock died or brought no money at market, for livestock prices had collapsed.

Respondents differentiated between famine years which produced grass and those which did not. Years with grass were much easier to cope with since livestock could survive and provided income for villagers.

Income Sources and Diversification

The principal activities of the men are farming millet, sorghum, and cowpeas; gardening; raising livestock; and commerce. The village gardens are private and are located down in the valley, several kilometers from the village. Produce grown is consumed at home and sold in the village and in Ouallam. Only some individuals garden. Villagers emphasized the profitability of raising livestock. [I observed that roughly 75% of households had livestock. Goats were the most common, followed by sheep, cattle, and only a few camels. Herds were never large, generally ranging between 5-15 animals.] Four village men are engaged in a unique livestock venture. They pool their money and transportation (camel) and deal in livestock from Mangaize (50 km to the north) to Ouallam. Each man takes a turn going up to Mangaize on market day and buying livestock. He brings the animals down to Ouallam and sells them in the market for a profit. The men buy mostly goats and sheep, and only occasionally donkeys, cattle or camels. They also take orders from people in the Ouallam market, bringing down the desired animals the following week. Women engage in sauce-leaf cultivation during the rainy season and raise livestock.

Perceptions of Food Security

It is assumed that village diet and consumption patterns are similar to those of other villages in the area. [Since there are no Fulani or other pastoralists nearby, village consumption of milk and milk products is probably severely limited. Zarma usually only drink cow's milk. Without Fulani to come and trade milk for millet, Zarma families without cattle probably get milk only rarely. Since there are no herders holding manure contracts in village fields, there is probably little fertilization of farmers' lands.]

Other

Tchela was a very difficult village to get information in. The acting chef orchestrated the group meeting to provide answers he thought I was looking for. He lied and talked over others in his attempts to conceal information about village income sources, famine coping strategies, and local forms of assistance. He was aiming at making the village seem appropriate for development projects, and gauged each response with the impact it could have on the possibility of receiving projects. Concerning famine support and relief, he indicated that the village was interested in livestock loans to be paid back the following year. [Given the political situation in the village, any project intervention in Tchela should be carefully designed, and the experiences of local services and other development organizations working in Tchela should be considered.]

HAASOU

Ouallam arrondisement, Zarma Ganda canton.
Group meeting with the chef and 20 men of varying ages.
Lively discussion nicely facilitated by the chef.

A clustered village of banco houses and walls set on an open plain. The population is 1000 and entirely Zarma. There is a Friday mosque and strong Moslem influence in the village.

History

Men from Sargane hunted in the area before there were any villages. Then one hunter, Bossa Bere, settled with his family near a big *Maerua crassifolia* (**haasou**) tree. People traveling between Sargane, Tillaberi, and Ouallam stopped at the hassou tree to rest, and so the village by the tree became known as "Haasou."

Famines and Coping

soudan (?) see other villages. At the time of this famine, the villagers were only farming millet. They owned little livestock. During the famine, people ate wild foods.
soudan keyna (?) occurred the year following above.
yedda (?) Crickets ate the millet.
himchiney nya kangey (?) refers to a species of grass. No rain, crops failed.
gari (?) occurred the following year.
himchin gongou (?) there was no money or food. Village traded goats for millet at a wealthy person's house.
banda bare (?) see other villages. Famine's name provoked embarrassed laughter: it is shameful to eat food in secret.
jebba kuru (1984) see other villages. Villagers started leaving on exode/migration for the first time.

Respondents unable to date famines, except 1984. They identified the early famines, particularly **soudan**, as the worst ones, because there was no food aid or way to transport food. Villagers

indicated that starting about 40 years ago, people began to accumulate lots of animals. [They mentioned this fact as occurring at same time as the installation of a respected chef de village---possibly implying a correlation between the two.] Since 1984, there have been no years good enough to allow total recovery. In a good harvest year (1988) they caught up in food stocks and began to recover livestock. But good years have been followed by poor production years (such as 1989-90), which drain income, assets, and food reserves once again. Because of this poor record since 1984, the number of villagers going on exode is increasing.

In coping with famines, no loans are given between villagers. Fields are mortgaged in order to finance buying food, once there is no livestock to sell off. In extreme duress during a famine, respondents noted, some individuals will sell some of their fields. This is generally done only if one has a lot of fields, and feels one can afford to sell one or two of them. [This is probably an indicator of being on the edge of survival. In many Zarma villages, it is unheard of to sell fields. It cannot be something one does lightly.]

Income Sources and Diversification

Villagers ranked the top three activities which produce revenue as cropping, gardening, and exode. Millet, sorghum, and cowpeas are the main crops. Every household engages in farming, except that of the forgeron. Village community work parties farm his fields for him. There is a Zarma village butcher. The village gardens are private, some located in a depression about 1 km from the village and others near the drinking water wells. They grow contre-saison vegetables for personal consumption. Respondents indicated that although raising livestock is a profitable activity, there is no longer enough livestock to make it worthwhile. So, villagers have been choosing to go on exode instead in recent years.

Perceptions of Food Security

Village diet and consumption patterns are similar to those in other Zarma villages. Milk products are rarer than in villages which have Fulani herders living nearby and exchanging milk for millet. Salad and cooked vegetables from village gardens are consumed during the cold season. Meat is available year round through the butcher, though households only buy meat occasionally.

Local Forms of Assistance

Respondents pointed out that wealth changes hands: those who are rich will one day be poor, and vice versa. If one helps another one day, the other will not forget and will someday return the favor. During times of famine, individuals with food give out alms and gifts of food as they are able.

SOCIAL SOUNDNESS ANALYSIS:
DISASTER PREPAREDNESS AND MITIGATION PROJECT

Prepared by Ellen Taylor-Powell
May 1992

I BACKGROUND

Disaster is well-known in Niger and is most often equated with famine. The catastrophic 1968-74 drought brought the magnitude of famine to the forefront of global concern but it was not a first for Nigeriens. Perhaps, more insidious and persistent are the localized, smaller-scale emergencies which, while never reaching the level of a national disaster, cause undue hardship for particular segments of the rural poor. To be better prepared and able to respond to smaller-scale emergencies is the purpose of the USAID/Niger Disaster Preparedness and Mitigation Program (DPM).

The following Social Analysis focuses on the socio-cultural milieu in which the DPM will operate to address the feasibility of the proposed program and project support activities. As called for in the Scope of Work, particular attention is paid to (1) local perceptions of disaster/emergency in order to incorporate people's experience and knowledge in development assistance, (2) concerns related to gender and disadvantaged populations and (3) participation in mitigation activities including lessons learned from cash-for-work/food-for-work (CFW/FFW) projects.

II METHODS

The substance of the following report comes from three major sources:

(1) Literature Review. In preparation for the study on victims' perceptions of famines/disasters, a literature review was undertaken of material relevant to the Sahel and Niger from a socio-economic perspective. Highlights have been extracted for inclusion here.

2) Study of "Victim" Perceptions of Disaster/Famine. During January-March 1992, rapid, informal surveys were conducted in three departments chronically deficit in cereal production: Zinder, Diffa, Tillaberi, where USAID distributed food aid during 1991. Because disaster in Niger is largely synonymous with drought, famine and drought-induced food shortages became the focus of the study. Field work included open-ended interviews with (1) the chef and elders of the village/camp in a group setting, often including the group's designated historian (usually an old Marabout) and (2) individuals found ad hoc in the village/area. Site selection within departments sought to include areas of differing productivity, remoteness and ethnicity. Field work was conducted in each department by individuals who had lived from one to four years in

the respective region and who spoke one of the local languages. Supervision, supplemental fieldwork and analysis were provided by the USAID/Niger social scientist.

Two questionnaires served as topical guidelines for the group and individual interviews but considering the exploratory nature of the study, interviews were not confined by the questionnaire. The intent was to listen and learn from people through an open, inquisitive format. A total number of 52 group interviews and 139 individual interviews were completed during approximately 3 weeks of field work in each department.

Table 1. Data collection in 3 departments

Department	No. of Interviews				Ethnicity
	Group Total	Individual Total	Men	Women	
Zinder	23	60	41	19	Hausa, Twareg, Fulani
Diffa	14	55	31	24	Mobeur, Kanembou, Toubou, Arab
Tillaberi	15	24	15	9	Songhai, Zarma, Twareg, Fulani
TOTAL	52	139	87	52	

3) Discussions and Site Visits. During its work in-country, the project design team interviewed numerous people and made several field trips. In particular, the social scientist participated in field trips to Filingue to visit three sites of the GTZ Programme de Mesures Anti-Erosives (PMAE); to Ouallam to visit two participating villages of the UNICEF Projet Conjoint Appui Nutrition (PCAN); and a field trip in the Tahoua Department to visit the Keita Project, Arrondissement Services in Bouza, two rural NIGETIP sites and the CARE Galmi project. The PCAN project features a community model of growth monitoring by village committees that stimulates nutrition response actions such as gardening, cereal banks, small stock production, and boutiques to improve food security. All the other projects use food-for-work to motivate communal work in famine mitigation actions except NIGETIP which uses cash-for-work in public works contracts. Discussions with project personnel and observations during the field trips are incorporated in the following report.

III DISASTER AND VULNERABILITY IN NIGER

Disaster is defined as a crisis that outstrips the capacity of a society to cope with it. In Niger, as in Africa in general, disaster is largely synonymous with famine. In the early 1970's, famine was explained as the failure of food production due to natural causes, especially drought. A food crisis was seen as a problem of food supply. Today, famine is seen not as the result of a single event or one bad production year but as resulting from various underlying processes and events that lead to prolonged reduction in food intake. And while drought is associated with

famine, it is no longer considered the cause of famine. Drought might be a precipitating factor, but it is one among other factors including the social, economic (regional, national, international systems), political and environmental situation that allows for a collapse in food access where poverty exists.

Over the years, the definition and causes of famine have changed with concurrent changes in disaster response activities. Currently, the focus is on the distributional issues inherent in food insecurity. Rather than viewing a food crisis as a problem of food supply (people starve because of insufficient supplies of food, i.e., food availability), concentration is placed on understanding famine as an issue of access to food, or food entitlement, where access depends upon purchasing power, market efficiency and transportation networks, among other factors.

A. Perceptions of Famine

Chronologies obtained from villagers in the departments of Diffa, Zinder and Tillaberi suggest that widespread destitution occurs regularly. These chronologies are being further analyzed and compared but in most regions, oral histories account for a famine on a frequency of about once every 10-12 years. Most of the chronologies start with the famine of 1913/14. One Songhai village in western Niger dated its famine history back to the early-to-mid 1800s. Unlike the settled farmers, interviews with pastoralists did not evoke the same level of oral history related to famines. This may be due to their movement patterns and lessened dependency on locational production parameters or nuances of the interview process and linguistic subtleties.

Famines are recognized with local names and meanings that serve as historical markers of importance. Several of these famines carry the same name across Niger while others have more localized names and interpretations. These 'declared' famine years are distinguished from periodic deficit years in terms of scale and destitution. In famine years, food is difficult to obtain, even if the individual has money whereas, in other years, there may be hunger and suffering but people are able to manage. "In a bad year, one gets at least some harvest - in 1991, for example, we could sell our beans". In a Filingue interview, villagers made the distinction between a poor production year when villagers sell livestock to purchase grain and a famine year when they were forced to eat their animals. The latter response signifies a different level of destitution as a result of negative terms of trade when grain prices outstrip livestock equivalents.

Famine years are perceptually different from other years of low production. They are correlated with years when there was total lack of rain or total devastation by crickets or rats in contrast to years when rainfall was low and/or distribution untimely. Respondents more often linked famines of the past to insect attacks whereas recent famines were more often attributed to drought. This may reflect people's current concerns with decreasing rainfall and climatic changes affecting the region.

Respondents distinguished famine years from other years in terms of two major impacts: (1)

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forced migration in search of food and (2) death. Death as a consequence of famine was reported from the Songhai villages in western Niger. Otherwise, few of the respondents attributed death to famine except for during famines of the early part of the century. This may be due to cultural sensitivities in talking about death or to ethnolinguistic complexities of the interview process. Or perhaps deaths are perceived as due to other factors than to famine per se [1]. It also may mean that people see the crisis, not in terms of death, but primarily in terms of dislocation, social disruption and lost lifestyles: heads of families having to migrate, women and children being left behind to scavenge for food, people losing land, animals and previous forms of existence. Outsiders have often seen famine and its impact as mass starvation. As found elsewhere, the issue for rural Nigeriens may not be so much one of hunger and starvation as one of dislocation and asset stripping that equates with loss of lifestyle [2].

In general, people considered the famines of the early twentieth century more severe than recent disasters. This was attributed to the lack of transport, roads, assistance and options available in earlier years. "There were no vehicles in which to either leave or bring in food." By the 1950s, road access and transport opened up and other foodstuffs became available. Cassava is said to have been introduced in the Tillaberi region within the past 30-40 years. More recent famines were associated with the distribution of food aid and with more individuals having millet to sell, loan or give. People distinguished the 1968-74 drought with the beginning of free food aid distribution. This was considered to be a major difference between famines of the past and today. The extent to which households have shifted responsibility for coping with famine to the national government and foreign relief assistance is unknown.

Several poor production years in a row are considered as devastating as a major famine. Each year reduces income and assets and the ability to cope. In the Ouallam region of Tillaberi department, villagers indicated that the few good years since the famine of 1984 (e.g., 1988) have been followed by poor production years. They are never able to get ahead in order to buildup insurance supplies. Certain locales in Tillaberi/Filingue region were experiencing a third year of poor production. Villagers spoke about exhaustion of [illegible], depletion of stores and increased migration -- indications of abnormal stress. Food on the market was considered

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[1] The OFDA disaster history for Niger estimates 8 000 deaths in the 1913 drought and 26,000 deaths for the 1931 drought. Sidikou (1974) estimates 30,000 persons died in the 1929-31 famine. Other famine mortality statistics were not found. For discussion of difficulty in estimating famine mortality see, especially Delehanty, 1988 and de Waal, 1989.

[2] Other research indicates that communicable diseases resulting from concentrations of relocated populations or opportunistic infection caused from nutritional deprivation cause more death than hunger and starvation; see especially de Waal, 1989 for Sudan. Also, epidemiological patterns from India show that famine years are followed by years of excessive rain and consequent malaria outbreaks that account for the majority of deaths for the famine year (Swift, pers. comm. citing Whitcombe). Further analysis of famine patterns for Niger are warranted.

cheap but they lacked money to buy it. Fortunately, the 1991 harvest produced cowpeas and grass. "If it weren't for the cowpeas, you would not have found us here." The final and undesirable alternative is forced movement in order to search for work and food elsewhere.

While harvests are largely defined in relation to millet yields as the staple food, farmers do differentiate between years in terms of secondary harvests as noted above. Years with adequate pasture production to support livestock are considered less difficult. For areas of dry season agricultural potential, food and cash crop production in the dry-season take on even greater prominence in years of poor cereal production.

Respondents, in general, considered the 1984-85 to have been worse for sedentary farmers given the total harvest failure. The 1968-74 drought was considered to have been worse for pastoralists due to the successive years of low pasture production (recorded data indicate 16 years of subnormal soil moisture). Farmers stated that during this period, there were years when they were able to cultivate and produce a marginal crop, so they did not reach the same level of destitution as did pastoralists.

Rural people expect frequent deficits. Superstitions and unwillingness to project future ills deter people from talking about likely scenarios but they do speak about the need to be always prepared. The ideal income/production strategy is one of saving and building surpluses in good years to draw upon in deficit years. A household's ability to do so is dependent upon its starting base of resources, competing needs and priorities. Likewise, the exact nature of the saving strategy takes different forms depending upon locale and preferences. The most common insurance strategy across Niger, in the northern and southern regions and regardless of ethnic group, is investing in livestock, primarily small ruminants. In the absence of a viable rural financial system and minimal investment opportunities, livestock is the major form of savings. Keeping livestock as an insurance or investment strategy needs to be distinguished from keeping livestock as a principal productive resource as practiced by pastoralists.

Drought, as the cause of famine, is principally ascribed to the will of God. Some villagers see drought as a punishment by God for bad practices or rituals poorly or infrequently performed..."God deserted us". Drought is also seen as a warning sign from God that society needs to mend its ways. People refer to the increase in social ills and breakdown in moral ways, saying that drought is an admonishment by God. The impact of the subsequent famine on individuals, however, is related to one's asset levels, agricultural product prices and access to food.

People also refer to the complications that famines induce such as the abnormal influx of people from outside the region. Such flows of people are seen as broadening the impact of a famine on the local residents. During the field interviews, farming groups in the southern zone, in particular, attributed the severity of the 1984 drought to the numbers of migrants who moved in from the north. The implication is that indigenous coping strategies break down under the pressure of famine-induced population movements. The extent to which such migration influxes overstress existing structures and cause social strife is uncertain. Reducing dislocation through

appropriate mitigation interventions obviously will have multiple positive impacts.

1. Agro-ecological changes

Time was spent during the field interviews to better understand people's perceptions related to their agro-ecology and famine conditions. Respondents speak vividly about the agro-ecological changes they see occurring and the resulting impact on their lives. They list species (trees, browse, grasses, animals) which have disappeared or are rare. "The region used to be black with trees." "Before this land was full of antelopes, lion and hyenas." They also note other less beneficial species that have been introduced: for example, a gerbil-like rodent reported in Matamaye and a cricket-type that now lives year-round in the Belbedji area. Many villagers speak about water sources that have dried up and rivers that have become seasonal. In the western river cultures, people report changes in the Niger River. It is said to be narrower and shallower; it is filling up with sediments; and the once-prevalent grasses in and out of the water are disappearing resulting in soil erosion and loss of fish habitats.

People link the changes they observe in their environment to (1) climatic changes -- reduced rainfall, principally within the past 20 years which has caused decreases in the indigenous flora and fauna and (2) population increases. The latter has resulted in more villages, increased land clearing for cultivation, deforestation and decreased land per person. Most people make the link between decreasing rainfall and increasing population to land degradation but that does not mean they see or practice regeneration alternatives. Increases in population are usually attributed to numbers of births. In some cases, however, respondents spoke about population growth as a result of in-migration where river basin villages with production potential or rural commercial centers have lured people to settle.

Villagers attribute lowered field productivity to (1) erosion, explaining that the reduced vegetative cover results in greater erosion and (2) decreased fertilization, saying that there are fewer livestock available since the recent droughts to manure their fields. Also, in the northern regions, farmers tend not to use animal manure under current reduced rainfall conditions because it burns the crop - "using manure is like calling drought to the field."

B. Vulnerability

Vulnerability is a concept that best explains who suffers in a disaster/emergency. Vulnerability is defined as *defenselessness, insecurity and exposure to risk, shocks, and stress* (Chambers, 1989:1). It is clear that famines do not affect all equally: some suffer, while others may gain during a crisis. In Niger, given the agricultural base of existence, it may be said that everyone is vulnerable to the vagaries of the weather. Yet, this is more so for some than others depending upon the local soils, ecology, alternative income sources, socio-economic-and political status. Even in drought prone regions within the country, where everyone is relatively poor, the impact of an emergency varies by socioeconomic strata.

In Niger, the 'soudure' or hungry period is a time of seasonal food insecurity that lasts from May to August when food stocks are lowest and caloric needs for cropping activities are highest. Food insecurity may be considered transitory because it occurs during only part of the year, but it is chronic in that it occurs every year (World Bank, 1991). The transitory food insecure, probably the most dominant group in Niger, have developed multiple coping mechanisms to carry them from one harvest to the next. In years of total crop failure or drop in purchasing power, however, periodic disasters occur. In contrast to the seasonally insecure, the chronically food insecure fail to eat enough throughout the year.

The more northern areas of Niger are generally considered to be more food insecure. Gradation of hardship in northern Nigeria during the 1968/74 drought was found to reflect the pattern of isohyets (Mortimore, 1989). For Mali and Burkina Faso, however, it has been found that northern households have developed more diversified, multi-sectoral strategies and so are less dependent on rainfall levels (Staatz, D'Agnostino and Sundberg, 1990; Reardon, Matlon and Deglado, 1988). They compensate for lower per hectare productivity by cultivating a larger area per person and earn more non-cropping income which gives them more purchasing power to buy food. Southern households, in contrast, attempt to assure household food security through their own production and tend to purchase grain only when this strategy fails. The analysis of the Niger IFPRI data and future FEWS survey will provide important understanding related to this for Niger[3].

Household food security can be gauged as the degree to which food availability -- own production, exchange production, transfers and assets -- meet consumption requirements. Increased levels of vulnerability are linked to various socio-economic changes including (1) population growth and decreasing land per person, (2) migration where immigrants do not have sufficient knowledge of the surrounding ecosystem and lack kin support networks, (3) sedentarization of pastoralists who may be subject to land degradation, local crop failures and lack the mobility to seek distant pastures, (4) changes in land distribution from dispersed to consolidated areas that eliminate the possibilities for optimizing favorable micro-environments, (5) changes in land tenure from communal to freehold that increases vulnerability for those without rights or who obtain marginal lands.

1. Measuring Vulnerability

There is growing awareness that vulnerability is not necessarily linked to supply parameters of cereal production. To date, however, the national Early Warning System (SAP, Système d'Alerte Précoce) is based largely on cereal production figures and village deficit lists. FEWS is the only system in Niger that incorporates other data in assessing vulnerability. Currently, the system identifies three major groups: farmers, herders and urban dwellers though for the

[3] Neither the IFPRI data for Burkina Faso or Niger include pastoral households. Recent household economic and consumption surveys have concentrated on sedentary farming populations.

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latter there is inadequate data to assess vulnerability. Farmers and herders make up 85% of the population and are considered to have the highest level of current vulnerability. The FEWS vulnerability assessment is based on quantitative (production, prices, health and nutritional status) and qualitative (alternative income sources) information from GON databases and reports for each arrondissement. Preliminary screening is based on cereals production (millet and sorghum) for agriculturalists and pasture production and terms of trade for herders. Terms of trade is measured by how much millet the sale of a buck (male reproductive goat) will buy.

Preliminary work has begun in the SAP to incorporate socio-economic indicators in the national early warning system. The DPM is to reinforce and broaden this start through support, primarily, to local committees in site and time-relevant indicator development. For any early warning system, however, the bottom-line must focus on the cost and quality of data collection and the use of data in provoking an appropriate response. Data must be accurate and timely and well integrated into a response system that can act.

A World Bank Food Security Mission in March-April 1991 used a set of indicators to classify arrondissements by risk level (Table 2). Drawing largely on FEWS Year 1 vulnerability assessment, the indicators include: average cereal production per capita 1979-1991 and 1986-1990, variability of production (standard deviation), an FAO coefficient of vulnerability and number of health posts per village. Indicators were subsequently weighted (apparently rather arbitrarily) to equalize their importance. Arrondissements were ranked based on a composite indicator derived from the weighted average to categorize arrondissments as highly insecure, moderately insecure, slightly insecure and not chronically insecure. The classification, by necessity, is based on availability of data which may be of questionable quality and usefulness in assessing vulnerability. Also, there is the acknowledged lack of socio-economic information and, because the analysis is based on cereal production, it largely omits pastoralists. Nonetheless, the classification provides a starting point for identifying chronically cereal deficit areas. Reportedly, all interested parties in the GON and donor community see the need to improve the system for identifying vulnerable regions.

Because this classification is based on cereal production, other sources of income such as tourism and mining in Agadez do not show up, nor do opportunities for trade with Nigeria in the southern arrondissements. Nevertheless, because of the overwhelming importance of cereals production to consumption, this list provides an approximation of areas suffering from food insecurity. Interestingly, several of the arrondissements considered to be emergency cases in 1990/91 and which received USAID-administered food aid, do not show up on this list as severely food insecure -- notably Tera, Tillaberi, Filingue, Mirriah and Matameye. Of note, also, is the fact that food aid is distributed according to accessibility (roads and security conditions) and established interests, not just according to need. USAID has historically provided to Tillaberi, Zinder and Diffa and not to Tahoua.

Table 2. Listing of Arrondissements by Food Security Level

Highly Insecure	Moderately Insecure	Slightly Insecure	Not Chronically Insecure
AGADEZ			
Arlit	Bilma		
Tchirozerine			
DOSSO			
		Loga	Birni N'Gaoure
			Dogon-Doutchi
			Dosso
			Gaya
DIFFA			
Diffa			
Maine-Soara			
N'Guigmi			
MARADI			
	Dakoro	Madarounfa	Aguie
	Guidan-Roumdji	Tessaoua	Mayahi
TILLABERI			
Ouallam	Niamey	Filingue	Say
		Kollo	Tera
			Tillaberi
TAHOUA			
TchinTabaraden	Keita	Birni Konni	Bouza
	Tahoua	Illela	Madoua
ZINDER			
Goure	Tanout	Matameye	Mirriah
	Magaria		

Source: World Bank, Food Security Working Paper No. 2, 1991

Cereal production is the basis of consumption. Millet is the priority food throughout Niger with cereals providing 90% of the total caloric intake. From the field interviews, villagers perceive food security in terms of millet production and/or exchange. However, cereal production is not an adequate basis for vulnerability assessment given the multiple activities in which Nigeriens are involved. For example, Bouza Arrondissement might be chronically deficit in cereal production but most households receive regular remittances from kin who are the major traders in the Niamey Bokoki market. Much of this income goes to support exorbitant marriage expenses, not food purchases (communication with Sous-Prefet, Bouza). Herders are typically classified as 100% deficit, but they may have substantial productive assets in camels and cattle. Purchasing power and accessibility of food must be the basis of vulnerability assessments; not static categories or production estimates.

Current demographic statistics for Niger are provided in the following Tables 3, 4, and 5.

Table 3. Population by Department

	Population	% Total Population	Population density Person/km2
Agadez	208,828	2.9	0.3
Diffa	189,091	2.6	1.2
Dosso	1,018,895	14.0	30.1
Maradi	1,389,433	19.2	33.2
Tillaberi	1,725,720	23.8	17.7
Tahoua	1,308,598	18.0	11.5
Zinder	1,411,061	19.5	9.1
Total:	7,251,626	100.0	5.7

Table 4. Population Density by Arrondissement, 1988
(Persons per square kilometer)

Agadez		**Tahoua**		**Tillaberi**	
Arlit	0.3	Birni-N'Konni	47.7	Filingué	10.9
Bilma	0.0	Bouza	47.8	Kollo	23.1
Tchirozérine	0.8	Illela	25.2	Ouallam	8.6
		Keita	30.1	Say	11.3
Diffa		Madaoua	44.0	Tera	18.7
Diffa Arrond.	10.1	Tahoua Arrond.	24.5	Tillaberi Arrond	18.1
Maïne-Soroa	5.0	Tchin-Tabaraden	1.1		
N'guigmi	0.2				
Dosso		**Maradi**		**Zinder**	
Boboye	42.9	Aguié	57.6	Gouré	1.7
Dogon-Doutchi	26.3	Dakoro	14.5	Magaria	42.0
Dosso Arrond.	28.6	Guidam-Roumdji	42.7	Matamèye	68.9
Gaya	36.9	Madarounfa	80.6	Mirriah	37.3
Loga	21.4	Mayahi	32.7	Tanout	5.4
		Tessaoua	39.0		

Table 5. Ethnic Composition of Niger by Department (percent)

	Total	Agadez	Diffa	Dosso	Maradi	Tillaberi	Tahoua	Zinder
Arab	0.3	2	3			.1	0.6	0.2
Zarma-Songhay	21.2	4.3	.9	49.7	0.4	63.8	0.6	0.8
Gourmantche	0.3					1.1		
Hausa	53	31.9	6.4	38.6	88	13.1	80.2	73.5
Kanouri-Manga	4.4	4.1	58.8			0.1		12.2
Peulh	9.9	1.9	21.4	10.5	9.7	11.7	2.8	9.8
Tuareg	10.4	54.6	0.8	0.9	2.7	9.0	15.5	2.6
Toubou	0.4	0.7	8.0			0.1		0.8

Source: 1988 census, Rapport de Synthese, 1992

2. Markets, Transport and Communications

Of concern in assessing vulnerability and developing mitigation response activities, is how easily food moves from surplus to deficit areas and at what cost. Such movement may be constrained by government restrictions, urban dominance, poor roads, minimal transport and/or uncertain information about demand in remote places. Agadez, Arlit, Tcherozerene may be chronic food deficit areas but mining and tourism, for example, provide alternative economic possibilities to reduce vulnerability if the market functions effectively (for a discussion, see the Economic Analysis)

The poor are particularly vulnerable to adverse price movements. Farmers are not self-sufficient in production even in good years. Local traders hold the power to mitigate or increase the stress villagers face during a food crisis. Household vulnerability is closely linked to local market conditions which in turn are linked to the national and international economic situation. Can markets deliver grain reliably to grain-deficit rural households at low cost? Price volatility hits hardest the poor households that sell grain early in the season to meet pressing cash needs and then have to repurchase grain late in the season at a high price to meet consumption needs.

C. Who are the Vulnerable? Differential Levels and Impact

The above discussion of vulnerability and listing of food insecure arrondissements in Niger focuses on areas, not vulnerable groups. The question needs to be asked, within geographical areas, who is vulnerable to disaster and food insecurity and is it a food issue? The cause of food insecurity is not necessarily linked to agricultural production or lack of food. Rather factors of production, employment possibilities and adaptations of product income must be considered.

Typically the most vulnerable are households with minimal assets of land, livestock and labor. This includes the landless sedentary -- foreigners and individuals not attached to a village or administrative unit -- and pastoralists without viable herds. Within this asset-poor category, women-headed households, pregnant and lactating mothers, children under five, the handicapped and the elderly are particularly at risk. Other indicators of vulnerability include isolation that restricts access and diversification alternatives. Length of residence may be another vulnerability indicator as it relates to security, access to resources, and social networks. Particular interethnic discord may also play itself out in marginalizing particular groups in particular situations. Likewise, access to and extent of common property resources in providing fuel, food supplements, and fodder (home-use and income generation) may distinguish levels of vulnerability as such common property resources may be the primary source of livelihood or significant buffers in times of food shortages, as for landless Bella woodcutters ('Bella' in Zarma and 'Bouzou' in Hausa signify former Twareg slave class). The above-mentioned groups may be found everywhere, including urban centers. Urban vulnerability and directing assistance to the urban poor is an issue needing to be addressed.

While there is interest in categorizing populations to signify levels of vulnerability, such as

herders, farmers, and urban residents, as done by FEWS, the variation within groups is great. Herders might be classified as nomads who do no cropping (whole households move) and agro-pastoralists. They may be classified as herder-owners or as hired herders/guardians -- the livestockless. Agropastoralists can be subdivided into transhuman agropastoralists, those who crop at one site but seasonally move all or some of their livestock and sedentary agropastoralists or agro-silvo-pastoralists, those who keep their livestock year-round close to their cropping activities. Even variations within these categories exist. Likewise, a range of categories might be distinguished for farmers to indicate differences in size of holding, tenure situation, household labor, off-farm income, etc.

Rarely do social groups pertain to one production system alone. Degrees of overlap exist between production systems. Even pure pastoralists rarely rely upon livestock as their sole source of income. However, socioeconomic patterns are discernible to allow categorization of types as 'predominantly pastoralist' or 'predominantly agriculturalist' to indicate differences in response; for example, pastoralists are generally less willing to sell or slaughter livestock than are farmers.

Further refinement in vulnerability assessment is called for which includes levels of vulnerability within production system types as influenced by asset base, gender and age. Among pastoralists, for example, some are still nomadic but have had their traditional way of life affected by pressure on land. Some have been impoverished by recent droughts. Some have settled but are ill-equipped to take-up agriculture. With the upcoming FEWS survey and further work in vulnerability assessment, it is expected that it will be possible to categorize production types by level of vulnerability.

1. Social and Economic differentiation

Nigerien societies historically have been stratified according to status, prestige, political position and participation in patronage and gift-exchange networks. All the major ethno-linguistic groups in Niger - the Hausa, Zarma-Songhai, Twareg, Fulani, and Kanouri - have traditions of ascribed status that usually include the categories of noble, commoner, and slave. The Hausa society recognized three basic groups; the Twareg had five classes of gradation while the Zarma ideology recognized only the distinction between noble and slave. Specialized low-status occupational groups include butchers, weavers, metalsmiths, potters and leatherworkers.

The abolition of slavery stimulated major social changes. Many former slaves took advantage of modernization and French schooling to become dominate in national life. But differentiation and inequalities continue. Traditional elites exercise considerable authority within their territories. Freed captives often remain distinct and are physically separate from the dominant ethnic group settling in separate villages or neighborhoods. Conflicts of interest are not uncommon. Ascribed membership to a particular group plays a central role in social status, occupational choice and marriage. Women typically have had little social or political power and today, in various areas, are rigidly restricted under Islamic ideology. Such social inequities

necessarily influence access to resources and levels of vulnerability. Work in northern Nigeria indicates that highly stratified gender societies have difficulty dealing with famine conditions (Schroeder, 1987).

Parallel with social differentiation is economic differentiation. As everywhere, Nigerien communities are composed of both the richer and the poorer. Seasonal shortages for some result in famine conditions for others within the same community. Poorer households with smaller holdings and fewer resources are more susceptible to stress and begin to suffer earlier when shortfalls occur. The poor resort to early sale of livestock, sell labor, incur debts and borrow at higher interest rates. Simultaneously, the better-off buy livestock at deflated prices, sell or lend grain to needy farmers and purchase labor at depressed rates. Within a single community, a cycle of accumulation and decapitalization can occur at the same time (Frankenberger, 1991).

2. Perceptions of Individual Vulnerability

Time was spent during the field work to understand who villagers themselves see as the most vulnerable. This was not an easy topic to broach but the following findings provide some insight:

Villagers make a distinction between those people who are chronically vulnerable and those who are vulnerable in production deficit years. The chronically vulnerable include "those with small power". In this category are included old people without families to look after them, especially widows and the handicapped. Also, included are women-headed households since a single woman may be responsible for all the household's domestic and productive work. Large families with many noncontributing members also are put in this category of vulnerability. It appears that the lack of a family labor force is the primary variable in all these designations of vulnerability. People make a clear distinction between those who are able and willing to work and the 'lazy'. In famine years, old people and infants are said to suffer the most since neither has the strength to withstand food stress.

Other variables are linked to levels of nonchronic vulnerability that affect one's level of risk in production deficit years. These include the following:

- Livestock. People see livestock as a security against time of need. Having livestock equates with having a store of wealth so that one can purchase grain when needed or other consumer goods. The critical factor is in having some animals (even two goats) versus having none. Thereafter, levels of vulnerability (wealth) are linked to numbers and types of animals the individual owns.

- Land - Access. Households which do not have secure tenure are also seen as being more vulnerable in poor production years. This includes households whose head is not an indigene. They could be recently settled herders, emigrating farmers from other areas, or longer-standing community members who have no relatives or inherited fields in the village.

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Use of fields is obtained through loans and mortgages. During poor production years, loaned fields can be reclaimed at any time, even after planting and cultivation with the borrower receiving nothing for his labor. Also, mortgage costs may be increased during times of production shortfalls. The borrower may be forced to pay the sum demanded or give up the field, exactly at a time when both money and field space are needed. The type and quality of land that one has access to, also, is a consideration. Newcomers generally are allocated the more marginal land. People with access to seasonally flooded lowlands and land of dry-season farming potential are advantaged.

- Land - Size of holding. The amount of land a family controls in relation to family size is also considered an index of vulnerability. Households which cannot harvest enough millet to store since they have small fields and/or too many members are considered to be particularly vulnerable.

- Occupational specialization. People who rely on a craft or a single source of revenue are said to be more susceptible to drought and disaster. Access to alternative income sources, including remittances from relatives, is considered an important addition to home production. Most rural populations lament the lack of productive alternatives.

- Depending upon the region and religious orientation, vulnerability is also linked to God's will. From a Songhai interview, "He who God wants to suffer will suffer regardless of the help given him by other men." Intra-site variability in yields due to climatic peculiarities is often explained in terms of religious fatalism, "God didn't grant it (good harvest) to that person".

Despite a history of declining yields, rural Nigeriens continue to live in marginal areas out of attachment to the land and in the belief that the future will be different. Having land is fundamental to one's existence and identity -- "without land, one has nothing". Also, there is the enigma of the unknown and the recognition that there is little land left for the taking. A common phrase is "where would we go?" Many rural producers see their lives as a cycle of times when they are better off and times when they are not. As there have been other bad years (disease, famine, wars), so there will be again..."this too will pass".

3. Health/Nutrition Status

Health and nutritional indicators are often used in early warning systems to monitor vulnerability. Both child and infant mortality figures in Niger are among the highest in the world and are indicative of the country's overall wellbeing, or lack thereof: the infant mortality rate is estimated to be 145 per thousand live births and the mortality rate of children under five is estimated at over 300 per thousand. The following overview of Niger's health and nutrition sector is taken from a report prepared by Sylva Etian, Technical Advisor to USAID.

Because only about 10% of deaths in Niger are reported, reliable statistics on causes of death are uncertain. The leading causes of death reported in health centers for 1986 include: meningitis (42%), malaria (20%), measles (16%), diarrhea (10%), pneumonia (5%), and other causes (7%). Because of the extremely low vaccination coverage in Niger, these diseases are expected to continue as the leading causes of childhood deaths for years to come. Periodic epidemics of meningitis and measles are common. An initial mobile campaign strategy to reach Niger's dispersed population was fraught with problems of limited personnel and logistics. Now, there is a combined vaccination strategy of fixed centers (maternal and child medical centers, PMI, in urban areas and the medical centers, CM in rural areas) with outreach and mobile operations. Operational problems continue. Only an estimated 25% of Niger's population has access to fixed vaccination centers. An inequitable distribution of cold chain units has favored the lightly populated nomadic areas at the expense of the heavily populated sedentary areas.

A 1985 study of malnutrition levels in the seven departments of Niger sampled 1,960 children to find 25.2% chronic malnutrition (less than 80-85% height/age) and 16.8% acute malnutrition (less than 80% weight/height). From a 1990 survey in Tillaberi Department, children within the age range of 12-24 months were found to be most at-risk. Of this age group, 34% exhibited acute malnutrition and 40% showed chronic malnutrition. The age group of 12-24 months is most at-risk because, once children are weaned, they are expected to eat the food which has been prepared for the family. There is minimal use of weaning foods. Also, children are often weaned abruptly and at an early age as a new pregnancy commences.

Malnutrition and poor health are perceived by villagers as medical problems so solutions are sought outside the community. To counteract this and to enable villagers to recognize the crucial link between development activities and nutritional status, UNICEF has supported a nutritional surveillance project, PCAN, Programme Conjoint d'Appui a la Nutrition. The project commenced in 1985 initially in the three arrondissements of Ouallam, Tchintabaraden and Goure. The nutrition of infants under three is monitored and recorded on individual charts as well as community charts. Community meetings are held regularly to review the nutritional status of the infants and to decide on development activities that will improve the community's food security (cereal banks, boutiques, gardening, small animal stocking). This community-based model is being extended as the basis for a national nutrition program.

No simple or direct relationship exists between consumption and nutrition. Research in Mali found that the rate of protein and caloric malnutrition in the south is among the highest in the country despite the fact that the south is the most productive agricultural zone. No statistical correlations have been found between family food security and the nutritional status of children within the family. However, a well established relationship does exist between children's health and household nutritional levels and the educational level of the mother and her control over income. Given the very low educational levels in Niger, however, years of women's schooling is not likely to be a possible indicator of vulnerability for years to come.

D. Economic Diversification Strategies

Despite conventional images of the Nigerien producer as being self-sufficient and subsistence-oriented, rural households are engaged in an active monetized economy. The full IFRPI analysis of household economies will broaden our knowledge, but preliminary results point to the importance of non-agricultural incomes in rural Niger. In an ICRISAT Burkina Faso survey, non-agricultural income was found to supply approximately half of the total rural income. Economic diversification is fundamental to existence in the climatically unpredictable Sahel.

Much of the economic diversification one finds in rural Niger, however, is small scale with limited revenue earning power or potential for expansion. Income generation is typically not organized and market transactions are high so that benefits are reaped by an outside merchant, trader or intermediary, or the one who commissions the work.

Despite the multiple activities one might be engaged in, rural populations see themselves as crop and/or livestock producers. In sedentary villages across Niger, the only people who do not crop are the old people, butchers (usually Hausa) and the forgeron (metalsmith). Reportedly, butchers earn enough income so they do not need to farm and the metalsmith often benefits from community work groups who crop for him. Millet is always perceived as the primary crop even though cowpeas, onions, peppers, other cash crops and crop by-products may generate more income. The IFPRI results caution against exaggerating the importance of crop sales in generating purchasing power. The data from western Niger indicate that crop sales account for only 10 to 25 percent of income, with an average of about 15 percent.

For the IFPRI survey of 100 households, most households produced enough millet in a 'good year' (1983-84) to feed themselves for at least a year after harvest in both the northern (Ouallam area) and intermediate zones (Boboye area). In the drought year of 1984, the average household was able to feed itself for four months from its harvest. By 1985, only about 1/3 of the sample households were able to make it through the year on that year's harvest. Purchasing power, however, was found to be similar between years, suggesting that there are other sources of income which compensate for the fluctuations in crop income. These results point to the importance of non-agricultural activities throughout the year, not simply in the 'off-season'. In Niger crop purchases are described as very substantial across all zones: from 34% of consumption in the southern zone to 49% in intermediate zone. Everywhere millet is the most purchased cereal. 30-60% of net crop purchases are paid for with off-farm income that includes migration earnings.

In the Western region, top sources of revenue ranked by respondents include cropping, metalsmithing, commerce, migration and livestock. Depending upon the site, gardening is included as well as remittances from relatives, including salaried relatives living in urban centers. Fulani who settle (temporary or longer-term) close to farming villages tend to rely on revenues/exchanges obtained through herding livestock, milk production, and manure contracts with farmers.

Economic diversity is linked to cultural norms of what is considered acceptable work. As already noted, Nigerien societies have systems of specialized occupational classes which influence the options a member of the society considers as available or possible. In the wake of a declining economy and successive deficit years, such status and caste prescriptions are breaking down. People are taking up work and moving into occupations they once refused to do. For example, one finds Toubous drawing water for animals and Bororo taking up farming. Certain of these changes may be only short-term as destitution measures until the former lifestyle is recaptured. Others indicate long-term adaptations. Reports from Diffa indicate that upper class Toubou women are weaving baskets and mats though they would not admit it given attitudes toward manual labor. Moving into other regions, people may perform work that is socially unacceptable at home. A negative consequence, however, is the displacement of the poor who customarily hold these low-status jobs.

Stocks and quantities of stored grains are often suggested as indicators of food security levels. However, these are difficult data to collect since the contents of granaries are often a confidential matter. Also, evidence of surplus may necessitate sharing so real stocks are not divulged. A Hausa custom has been to reserve the 'gandu' (family) granary until the next cultivation season in order to feed laborers during the intensive cultivation season. The extent to which this prevails today is uncertain. Nor is it certain how closely data on stocks reflects security levels of different types of households nor how easily such data could be collected.

Migration (Exode). Perhaps, the principal income diversification strategy, and the most lucrative, is migration. Migration has always been a fundamental feature of Sahelian economy and society. The pre-colonial pattern that involved mass movements of people, however, has been replaced by the modern periodic migrations of labor to meet cash needs. While historical comparative data are nonexistent, most researchers consider that today's labor migration is more integral to household reproduction than in previous times. This is due to the increasing intensity of monetary pressure, the decreasing ability of agriculture to satisfy consumption and exchange needs, monetization of brideprice, increasing opportunities for off-farm employment in the capitalist economy, etc.

The pattern and significance of migration varies by region, ethnic group and gender. In some regions, migration only takes on significance in poor production years. In other areas, such as Zarmaganda and Tahoua, it is one among various diversification strategies and is practiced regardless of production year. Other groups and individuals do not engage in migration. For example, the Fulani and other pastoralists including the Toubou and Arabs are less likely to migrate. When they do so, it signals distress such as during the 1984-85 drought when 65% of the WoDaaBe herder households in southern Niger reportedly resorted to labor migration (White, 1984).

Migration takes various forms in Niger:

'rites de passage' of young, unmarried men who need to earn money for clothes or marriage expenses; they may migrate to urban centers or to nearby countries.

short-term seasonal migration of men usually to the coastal countries; men leave shortly after harvest and return at the time of planting; often an annual pattern.

longer-term migration of young to middle-aged married men; they may spend more than one season, up to several years.

migration of women; Bororo women migrate freely. Zarma and Hausa women may accompany husbands to either support the husband or to earn an independent income. In most cases, migration of women may signal a distress situation.

distress migration of men, women, and/or whole families in times of major food shortages when all other coping mechanisms have failed.

Besides the above mentioned forms of migration, there is an estimated 1% of the rural population that migrates to the cities each year with Niamey being the principal target. Likewise, within Niger there are the seasonal migrations of transhumant pastoralists and the rural migrations of ethnic strangers moving into other rural regions to perform work considered demeaning by local people. Also, one finds the movement of agricultural wage laborers who circulate to areas of labor demand. Squatter settlements on the periphery of urban or village centers may also be considered a form of migration. This appears to be a common strategy among the semi-sedentary Fulani and Bella who settle for the dry season close to population centers in order to engage in small income-earning activities available there.

Particular migration patterns appear to depend upon culture, individual preference, land tenure situation, alternative opportunities and expected returns, among other things. From the field interviews, migration, in certain locales, is equated with abandoning one's land and is only practiced as a last resort -- "if one has no land, one has nothing." The decision as to whether and when to migrate may be linked directly to tenure security. Households with secure land rights may feel freer to migrate than those with only usufructuary rights since the latter risk having their land appropriated while they are away.

The ability and willingness to migrate also appears to depend upon family size, labor availability, and stage of family development, that is, whether there is someone to leave behind to care for one's interests. It is possible that the very poor do not consider migration as an alternative, except as a destitution measure, since it requires a minimum level of resources to make the journey and/or to be able to leave one's family behind.

Certain areas have long, established traditions of migration with regular end-points and established connections (including kin) at the destination site. In general, the Zarma/Songhai of the western region go to the Ivory Coast, Ghana, Benin and Komabangou in the Gourma region on the border with Burkina Faso to gold mines. Residents of central Niger often go to Nigeria. The northern residents and Arabs move towards Libya, while the easterners migrate to Nigeria and the Lake Chad basin. Northern Toubou who migrate to Lake Chad lakebed do so for the sake of their herds while the Kanouri do so in order to take advantage of farming and

fishing opportunities. Migration may be used by the nomadic Twareg for the sole purpose of earning money in the hopes of restocking their herds in order to return to their nomadic lifestyle. From the field interviews, there was the general consensus that migratory earnings are less and buy less than in previous years. Also, there is concern about the deteriorating political climate in the receiving countries.

There is much imprecision in current knowledge related to migration in Niger - migration rates, levels of earnings and impact on rural productivity and household welfare. Painter (1986) gives annual migration rates of 1.7% to 5% of the national population with 4-10% of all migrant age males. Levels rise depending upon the region. In Dosso area, it has been estimated that 25% to 60% of the migrant age males are absent each year during the migration season. And in two Tillaberi Department villages, over 90% had at least 1 labor migrant (ICRISAT). There is also much speculation about levels of earnings and impact on household incomes and productivity. The principal use of migration earnings appears to be to purchase grain. The Mission waits the IFRPI household survey analysis to clarify and quantify the incidence and impact of migration on rural Nigerien economies and role in famine mitigation.

Since 1984, it has been the GON policy to reduce labor migration. Many projects with dry season components have the expressed objective of decreasing migration. Yet, migration (1) has a long history in Niger, as in the Sahel as a whole and migrants have compelling connections in other locations; (2) plays a significant role in the regional economy (positive and negative aspects) and (3) is an economic necessity in climatically uncertain environments. Not only does migratory wage labor bring in cash, but it relieves the household of feeding the migrant during a time of regular food shortage. There is indication from the Keita Project and other locales, that migration is reduced when there are viable dry season cultivation opportunities. But, by and large, migration would seem to be a continuing strategy, one among many, for Nigerien households.

The issue for early warning systems in Niger is to differentiate between migration that is part of the household's normal economic strategy and migration that signals heightening levels of stress -- mass migration of whole families is too late. No standard indicator for Niger as a whole will be appropriate.

E. Coping Strategies

There is much interest today in the role that coping strategies play in mitigating famine. Coping strategies are defined as the methods households use to acquire food when more conventional methods of production and purchase are unavailable. Because preparing for, adjusting and adapting to adverse climatic conditions is fundamental to rural life, it is difficult to separate coping strategies from normal income diversification strategies. Life in Niger is harsh: if rainfall is sufficient in quantity and distribution, then there is always the threat of insects, rodents, foraging animals and/or thieves. To cope, people have developed a variety of adaptive mechanisms that are continuing to evolve. These include the use of drought-resistant varieties,

extra weeding and moisture-retaining cultivation practices, crop relays (for example, replacing poor millet germination with cowpea), micro-site exploitation within a field, increased dry-season production, borrowing, keeping livestock, using substitute foods including wild foods, labor migration, praying, increased handicraft production. From worldwide research, three major types of coping strategies have been categorized:

Economic strategies, as previously discussed, are the basis of product diversity that characterize Sahelian production systems. Farmers spread risk by cultivating a variety of crops that respond differently to different production conditions and by mixing livestock species that make use of different types of grazing resources and quantities of water. Economic diversity is further extended through off-farm activities and labor migration. Smallholders work to accumulate resources that can be liquidated in times of need. They store grain, livestock, personal possessions, implements and labor through opportunities at home and away. The need to exploit the latter accounts for the significance of spatial mobility in semi-arid economies. In interviews with Black Twareg in the Tera region, respondents stated that in years of adequate cereal production, their primary expense is livestock which smooths incomes over expected bad years.

Social strategies are those which redistribute available resources in the family, clan and age set. Sharing of resources within a community is based upon the concept of **reciprocity.** Help at one time may mean repayment of assistance in the future. The range of reciprocal activities is great, including loans or gifts of money, food, and/or animals, splitting of herds into smaller units, sending children to live with relatives, encouraging children to eat with neighbors, and marrying young daughters to wealthy men in expectation of assistance.

Ecological adaptations include such practices as strategic planting of different crops related to soil qualities and micro-variations, systems of fallow rotations, manure practices, intercrop nitrogen-demanding grains with nitrogen-fixing legumes and movement patterns of pastoralists that access wet and dry-season grazing and water.

1. Stages of Coping

Coping strategies vary by stage of the food crisis, by locale, socio-economic status and the local economy. Drought induced disaster does not spring up in one year. Rather it is slow and progresses over several years. It is clear that people progress through discernible stages in a downward spiral to the collapse of their livelihood and destitution. These stages have been identified from case material in Africa. They apply equally well to Niger:

Early Stage: Insurance mechanism, "asset conserving". Responses undertaken in the first stage of a coping strategy are a form of self or interhousehold insurance. Many have been developed to cope with predictable and nonsevere risks. Being able to draw upon these responses, depends upon 'building-up' during noncrisis years, such as acquiring surplus livestock, buildup grain stocks, invest in valuable disposable goods such as jewelry and household goods, develop systems of reciprocal obligations, and safeguard reserves of wild

foods. Early stage responses usually involve the use of available family resources and do not entail the permanent loss of productive assets. Examples include changes in cropping and planting practices (dry season gardening), selective sale of small stock and possessions such as jewelry, reduced consumption and ceremonies, gathering wild foods, use of inter-household transfers and loans, increased petty commodity production, and migration for employment.

Mid Stage: Disposal of productive assets, "asset stripping".
Asset stripping strategies jeopardize the future economic welfare of a household. Recourse is taken in the wider system of interaction where market and social relations are more important. In these responses, people begin to liquidate assets to the ease shortage. Examples include the sale of livestock and agricultural tools, sale or mortgage of land, credit from merchants or money lenders and further reduction of consumption.

Late Stage: Destitution. Responses taken during stage three are terminal and leave the individual virtually assetless. At this point, all productive assets are sold and people are forced to migrate to towns or relief centers. During the field interviews, people listed behaviors resorted to in past famines: consumption of own livestock, sifting millet grains out of the sand, consumption of undesirable famine foods such as *Balanites aegyptica* leaves and doum palm roots, and stealing food.

Indicators can be identified for each stage in a food crisis for monitoring conditions that would suggest worsening situations and heightened food insecurity. Location specific indicators are necessary given the time and site specificity of food security.

The stage that is reached when a famine eases largely determines the individual's ability to recover. Different interventions will be appropriate depending upon the stage of the food crisis. Productive assets which are lost in distress sales may be difficult to reacquire (e.g., herders in Sahel who lost herds, had to turn to other livelihood sources and find it impossible to restock). The poor, those with fewer resources to bring to bear, enter the sequence first and move through the sequences more quickly.

Behavioral responses that people cited during the field work relate to the final or destitution stage of a food crisis. Yet, it can be assumed that not all Nigeriens reached the same destitution stage nor that all responded in the same fashion. The listing of famine responses from these oral histories provides an idea of what must have been the key coping strategies at the time. Several names reflect very unusual circumstances "sell your children" and "turn your back on people" or introduction of new foodstuffs - "the year of the manioc flour" which over time have resulted in changes in diet and consumption patterns. Some of the responses indicate new behaviors while other behaviors are expansions of known strategies. The Mobeur people in southern Diffa refer to the drought of the 1970s as when exodus to Chad began in earnest as a yearly movement. Other common responses include borrowing, reducing food consumption and changing eating habits to include famine foods and bran, increased mat-making, migration to the city to garden or work as laborers, begging, selling animals and equipment, smuggling of oil, gas, sorghum (engaged in by men and women), and selling or mortgaging land to obtain money

to buy food. Several referred to the strategy of destocking and selling animals before times got too bad.

Wealthier herders rely on their herds while others have become involved in a variety of income earning activities including crop production, sale of wood/straw, crafts, labor, maraboutism and small commerce. The WoDaaBe see their principal coping mechanisms in time of famine as selling jewelry, medicines and emigration. Interviews with 60 Twareg herders of the Eduk-Kao, Tahoua region found the following responses to the 1984 drought (Cord et al., 1986): canceled migration to cure salee; stayed in familiar region; destocked; sold drought sensitive species (cattle and sheep) to buy goats and camels; took up cultivation in seasonal ponds; purchased feed supplements. The more successful herders reduced their herd size early, stayed in familiar territory rather than migrating, kept mainly goats and camels and rather than purchasing other animals they stocked cereals and feed supplements. Marabouts and forgerons who kept smaller herds and had alternative income tended to do better. The authors offer various recommendations to mitigate disaster tailored to local and regional needs. These include supporting traditional strategies of animal movement, stocking feed supplements in good years at local and regional levels, early harvesting of failed crops to feed as livestock supplement later in the drought, promoting timely herder destockage, initiating herder's saving schemes to preserve capital gained through animal sales, undertaking specific animal health programs and creating opportunities for earning alternative incomes.

2. Selected examples of coping strategies.

From the perception study field work, the following coping strategies were highlighted:

Mat making. Mat making is a regular income generating activity, particularly for women, in many regions of Niger. Mats, baskets and ropes are made from the doulm palm (*Hyphaene thebaica*) which regenerates spontaneously from underground rhizomes. Mat making is time-consuming but easy to learn. Both women and men referred to increased mat production during deficit periods in order to generate money to buy food. Fulani and Bouzou women in the northern region of Zinder, in particular, who have few mitigation alternatives see mat making as their primary coping mechanism. "You can take mats to market and get some food". Urban demand seems to be remarkably elastic. Men also see rope making as a prime coping strategy.

Wild and Famine Foods. Edible plants have strategic significance in the rural food supply throughout West Africa. Their use is not limited just to times of drought nor to the poor though use is culture-specific. Women and girls collect most of these foods. In good years, leaves, roots and fruits are used to supplement staples and as critical nutritional snacks, especially for children. But these foodstuffs are brought into different and more intensive use during time of food shortage: different plants are used and different people are involved. Nomadic Twareg of the Ouallam area were quick to note that they do not collect wild foods. It is considered a Zarma activity. Likewise, Fulani women only gather wild foods during famine times.

In Western Niger, the Songhai and Zarma women and girls have a traditional role in gathering (and selling) wild foods including edible weeds from the cultivated area. Differences exist between those wild foods which are gathered and eaten as a regular part of the diet, those eaten primarily during the soudure to save money and to stretch the food supply, and 'famine foods'. Reportedly **haasu** and **goronfu** are only consumed when people are starving. Cram-cram seeds are considered so distasteful and are so labor-intensive to process that they are only consumed when one is desperate during a famine.

Given the strategic role of wild foods as nutritional supplements and as famine foods in mitigating starvation, there is the urgent need to ensure their survival. Reports from some areas already suggest the disappearance of certain species. Further work would seem warranted in identifying species, indigenous technical knowledge related to their use and methods that could be employed for assuring their succession. Maintaining dietary diversity through wild species may be critical for survival in the semi-arid Sahel (Grivetti, 1992).

Dry-season farming/gardening. Dry-season gardens are widely regarded as a famine mitigation activity depending upon soil quality and water availability. In Niger, off-season cropping activities include irrigated and non-irrigated (recessional agriculture) agriculture, from small- to large-scale. In 1984, the GON initiated a major program promoting 'contre-saison' production with noticeable results across the country. Most all PVO/NGOs and development assistance programs include a gardening component (often for women) using hand or pump wells for irrigation. Most have promoted European garden crops such as carrots, lettuce and tomatoes. These gardens may serve as an important nutrition source during production deficit years. In many places, however, gardening declines in good cereal production years probably due to marketing constraints, competing priorities, and opportunity costs. At many sites, wells and pumps are broken down. For some, there is no interest to garden given difficulties and cultural mores related to manual labor. Some projects, notably the Institute for the Study and Application of Integrated Development (ISAID) in Filingue, are experimenting with indigenous gardens that integrate local crop, browse and tree species.

Where dry-season farming or gardening functions as a cash-crop and not just for home consumption, expansion and changes are observed -- cash crops include onions, peppers, potatoes, manioc, and wheat as well as the more perishable lettuce and tomatoes in certain locales. In the N'Guigmi area the primary income source in 1992 appears to be melons given the failure of the millet harvest. Melons and squash are planted in small depressions, protected by thorn hedges, and mature on the humidity retained by the heavy clay soils. In the Tahoua Department, dry season cultivation of 'dolique' or 'lab-lab' (pigeon pea, *Cajanus cajan*) in river valleys and depressions for food and fodder has expanded greatly in recent years and is considered a significant drought mitigation activity. Reportedly manioc and sweet potatoes were introduced into the Filingue area by a Hausa cultivator within the past 40 years. Previously, cotton had been the sole crop. European-style vegetables have been introduced within the past 10 years. Where garden products are marketable, gardening is on increase.

As found in other research, there appears to be a correlation between areas of high gardening

potential with a stable market outlet such as in regions of Matameye and low levels of local out-migration. Such areas, in fact, are drawing points for migrants who, in bad years, come to work in these gardens ("even the Bororo," stated one Matamaye respondent). In potentially high production regions, such as along the river in Diffa Department, the difference between a poor production year and a famine/catastrophic year is having irrigated dry-season fields. The evidence that villages further away from the river and lakes tend to disappear while those closer to such water sources are growing would seem to confirm this.

Consumption patterns. Millet is the preferred staple throughout Niger followed by sorghum. Cowpea, the third crop in net production, is largely produced for sale though consumed in some regions, and pigeon pea, similar to cowpea, has expanded considerably in the Tahoua Department over the past years as a dry season crop. The IFPRI data shows the importance of maize in poor production years.

Consumption patterns are of interest since they may indicate early stages of food stress. What people eat and how often are largely dependent upon the food production base and cultural preferences. Again, the field data underscore the variations found across Niger making inappropriate the use of any standard indicator. The following excerpts provide a few examples:

> Traditional Twareg of the noble class consume only millet, milk and milk products and meat including meat juices. In the absence of milk, the customary 'boule' is prepared with water. Virtually no vegetable sauces or wild foods are consumed. In one camp visited, a dry season garden was proudly displayed but it was the slave-class Bella who were doing all the farming and consumed the crop. The nobles reported that they do not eat garden crops.
>
> In a marginal production zone in western Tera Arrondissement, the long-settled Black Twareg discount any possibility of dry season farming. They rely almost exclusively on a millet-based diet and purchase a few sauce ingredients (mainly dried okra) from neighboring farmers.
>
> Songhai villagers along the Niger River in Tera Arrondissement enjoy a highly varied diet that includes millet, sorghum and bean dishes as staples supplemented with a wide variety of fruits, vegetables, fish, meat and animal products.

Seasonal differences in consumption are notable. Across rural Niger, it is a common practice to decrease food consumption as the dry season progresses. At the time of harvest, villagers often make a point of eating well. Hopefully, the harvest stock will last through the cold season during which time the diet may be supplemented with other foodstuffs obtained through exchange (women for example winnow rice and millet for others and are paid in-kind) or from dry season production. During the soudure, people ration food and perhaps, mix in wild foods to stretch the food supply. Livestock is sold as necessary to purchase cereals. A common practice is to reduce food consumption to two meals daily. Among some, one meal is prepared for a 24 hour period (reported by marginalized Bella north of Niamey). Toubous of the east, in contrast,

report that they never eat only one meal, not even during the soudure, since the children cannot support this. In a relatively wealthy zone, such as the Tera River zone, consumption patterns change during the soudure but not radically -- little or no meat is eaten in order to save income. Meals continue to be prepared regularly but in smaller portions.

Another common practice appears to be the replacement of the morning meal with tea, particularly among herding populations. Tea serves to mitigate hunger. In large part, tea has replaced milk in the herder's diet. It is, also, a major expense. Its rate of consumption may serve as a rapid proxy of wealth among particular groups. Also of interest is the nutritional consequence of tea drinking in replacing other foodstuffs.

F. Drought-induced changes in rural societies

Besides the changes in consumption patterns through the introduction of new foods, respondents noted various other changes resulting from the recent droughts. The 1970's drought saw Toubous switch to camels from a tradition of cattle production. Likewise, while dry season gardening was known in various regions throughout Niger, it became a primary coping mechanism as a result of the 1984 drought. At this time, pepper production in the Diffa area took on importance which continues today. The same may be said for the significant increases in onion production in recent years. A not so positive change has been the urban-pull.

Food deficit situations amplify economic disparities and have a differential impact on the poor. The change in the concentration of livestock ownership from traditional pastoralists to urban-based owners in Niger as a result of the 1968-74 drought is but one example. Among the pastoralists themselves, research among the Kel Dinnik Twareg of central Niger, shows that the larger producers had distinct advantages: superior command over resources including possession of surplus animals, ability to recall animals loaned out on contract and access to social insurance networks. The drought did not result in a uniform decline of the pastoral system. Rather producers without the social and economic resources to contend with the elevated risk, fell-out of the pastoral system of production (Starr, 1987). The poorest groups have been least able to reconstitute their herds. This underscores the importance of maintaining some assets. Drought and famine may impoverish all, but relative poverty is centered among the resource-poor. Permanent loss of land through land pawning is another impact that appears to be growing and is disproportionately borne by the poorest households resulting in land concentration among the wealthier. There is no question that drought brings about a significant concentration in the social distribution of rural capital.

G. Gender Differentiation

Rural women are involved in different economic activities than men and they control their own sub-economies within the household. Consequently, women take on different roles during food crisis related to their role in food production, consumption, storage and preparation. Often, as

de facto or de jure heads of households, they carry significant roles in providing for their dependents during food insecure times. In areas of heavy male migration, women, children and the elderly are often the only ones found in a village during the dry season. Women often have the full responsibility for dry season gardening, crafts, small commerce and small stock management as well as the arduous domestic tasks in the absence of migrating men.

Across Niger, men are largely involved in livestock marketing though women often own the majority of the small stock. Actual decision making concerning decapitalization in times of food shortages is unknown but it is assumed that women's contribution to household food security through small ruminant production is considerable. The role of women in gathering wild and famine foods has already been noted. Food preparation decisions and allocation of reduced portions are largely taken by women. Depending upon the ethnic group and class/caste structure, women work for others to obtain in-kind foodstuffs for the household. In crisis years, women regardless of social taboos, migrate looking for work and to search for food. Such female migration usually signals a later stage food crisis situation, except for Bororo women who migrate normally.

The IFPRI analysis will provide useful information on strategies households use in assuring food security. Further work is needed to link particular coping strategies to household differences since it is established that coping strategies not only vary by stage of the food crisis but by income level, gender, ethnicity and micro-economic situation. A useful future endeavor will be to document actual coping mechanisms and their timing/sequencing by different households and individuals in the same community. This will require a larger sample and the stratification of populations by income level. Yet, even with this information, care will be needed in interpretation and use since the sequencing and use of coping strategies varies by famine condition, the year, community structure and external factors.

H. Traditional Assistance

Systems of inter-household loans and gifts have evolved to deal with regular and non-severe food shortages. Not all members of a society have equal access to resources but in many situations the wealthy have had obligations to support the poor in times of difficulty. Forms of traditional assistance vary by region and cultural mores. The more common ones include forms of charity, alms, in-kind transfers that include inter-household gifts and cultural norms of sharing food. Such forms of assistance usually operate between family and kin members but may extend to include neighbors, friends, and influential figures such as the chief, marabout, and alhadjis. Types of local aid include gifts of food or money, loans and employment where labor is paid in money or in-kind. A common form is the sharing of labor and redistribution of benefits during harvest when participants assist in harvest and post-harvest activities (women) and receive a portion of the crop as payment. Women typically receive in-kind transfers of food as payment. Men may be paid in-kind, in cash or in exchange for land use rights. The Fulani have a well-established system for redistributing livestock wealth. In the haBBanae system, an individual gives a female animal to another and after the female has given birth twice, the animal

is returned. Other ethnic groups have similar, though often not so well-regulated systems, for sharing livestock wealth.

As previously mentioned, reciprocity is firmly embedded in Nigerien culture, serving as an insurance mechanism. A Wolof proverb from Senegal may be applicable throughout West Africa, "A man without debts is a man without friends." Debts, or claims (a form of assets), represent personal ties, and personal ties represent security during crisis. Results from the IFPRI household survey in Niger indicate that households are as willing to transfer crops (to cement social relationships) as to sell them.

It is commonly observed that inter-household transfers and loans increase in the early stages of food shortages, but they dry up as the crisis deepens and becomes prolonged. When many members are all subject to the same risks at the same time, effective risk spreading becomes futile. From interviews in Tanout arrondissement, villagers described the system of loans and inter-households gifts as having a levelling effect -- all members of the community fall to the same level of need by harvest time. In many areas, villagers note that they no longer engage in personal loans since repayment is so uncertain.

Traditional Islamic injunctions depend upon one's resource base and seemingly are not widely practiced in the villages visited. Sadaka refers to any token form of assistance whether it be a bowl of food or 5 cfa as alms given to the poor. Zakat refers to the tithing that is a percentage of a person's annual wealth. This was expressed in various forms during the field interviews: for those with animals, zakat is the yearly tithe of 1 goat for every 5 camels or every 40 goats; one bundle of millet out of every ten; one tenth of the harvest given to (sometimes solicited by) the poor, malams or needy kin members. The actual practice of zakat today is uncertain; there is some indication that it may be given to village chiefs and influentials rather than to the needy. During Ramadam, some heads of families give a certain number of measures of grain per family member as assistance to another.

The needy request assistance from those perceived to be wealthy. This may be the chief if he has the reputation of being charitable and "good". During the soudure, it is possible to find lines of nomadic herders in front of the 'chef de groupement's' house waiting for assistance. In numerous sedentary villages during the field interviews, people noted that they do not go to the chief for assistance because it was said that he only looks out for his own family.

The IFPRI data suggest that inter-household gifts are relatively insignificant which may imply a break down in the traditional safety net whereby the poor received help from others. Certainly, social insurance networks do not work for newcomers or 'outsiders', a particularly vulnerable group. Likewise, access to donations and remittances depends upon a network of relatives and institutions that correlate to household status. The wealthier more often have access to borrowed food, have greater access to credit and other social support networks. Destitute households, those in need the most, usually do not have the family or client networks to call upon. They are major beneficiaries only in time of severe drought. An example of this comes from the Twareg, where among upper-status herders, there is considerable circulation of

animals between friends and relatives through gifts and loans of varying duration and conditions. Such assistance, however, does not apply to the lower-status Twareg. The latter lack access to such credit networks and have more limited ability to reduce risk through intra-household relations since they lack access to redistributive networks (Starr, 1987). Also, among the Twareg, *tamesadeq* is a gift from rich to poor which is motivated by Islamic piety. However, it is "Given to impoverished ineslemen, sometimes to poor former vassals, but is given to iklan (Bella) only under extreme circumstances. "

Among villagers interviewed, there is the perception that traditional forms of assistance are decreasing. Various explanations were proffered including the general breakdown in social morality, "People just don't care anymore" and the overall economic decline whereby people lack the means to help others. "Traditions have diminished - most people are poor now." "When there is no harvest and no animals, then there is no tithing." The growing rate of individualism was also noted. One iman mentioned that in the past, when there was warfare and slave-raiding, assistance among individuals and within the community was stronger. People lived in communities as protection against the common threat of attack. Since the arrival of peace, this unity has broken down. The iman's analysis is that people have become divided -- they live apart from one another and show little solidarity in work and charity.

I. Food Aid

Critical in famine mitigation activities is to know when traditional coping mechanisms are breaking down -- when a situation indicates abnormal stress and when deficits are part of a normal cycle. Researchers caution against upsetting indigenous effective and low-cost means of reducing food deficits with building increased reliance on often less reliable and more expensive support structures provided by governments and relief programs. Since the 1970's food aid has had an impact on rural Nigerien lives. A continual concern must be to ensure that this impact is positive and that dependencies are not built or local coping mechanisms eroded.

During the perception study field work, questions were asked of respondents related to their perceptions of the food aid that had been distributed over the past years. The focus was on emergency food aid as distinguished from other forms of food distribution such as that provided more regularly as part of a development project as food-for-work. Distribution of food aid in Niger has been fraught with problems not least of which is the general opinion that food aid is a 'gift' to which the better-off and more important have first right (E. Koeniger, memo).

From the rudimentary findings, it appears that people do not see free food aid as making much of a difference in their lives except in famine years when they are destitute and food aid quantities are substantial. Even then, people returned to their villages to plant, not just to obtain food aid. While villagers indicated that quantities received in non-famine years (famine years equated with 1974/75 and 1984/85) were inconsequential, the extent to which these supplies helped to reverse divestment is unknown.

Reports obtained during the field work testified to a wide range in quantities received and access within the same area. Often, it appears that itinerant herders or recently settled slave castes do not receive aid. Where herders have long-standing, positive interactions with settled farmers, no partiality in food aid distribution was reported.

Villagers favor work aid because they see it as regular income rather than being uncertain amounts available through free distribution. "Free food aid only comes when you suffer, and you have to be lucky to get it." Only the elderly requested free distribution since they considered themselves unable to work and a few Bororo who disdain manual labor. Irregularities in distribution were noted with many stating that actual amounts received were reduced due to all the hands in the pot. One wealthier respondent noted, "The poor people never get much because the chiefs have their own priorities." Little confidence is placed in the existing system as being able to properly handle free food assistance.

IV Participation in Disaster Mitigation

To date, the majority of disaster assistance in Niger has been in the form of food aid to people in localized deficit areas or on a widespread scale as during the famines of 1974-75 and 1984-85. The current DPM program focuses attention on the issue of longer-term food security by including mitigation activities which seek to arrest the impact of the current emergency while reducing vulnerability to future emergencies. Mitigation activities are defined as those activities which 1) abate the impacts of the current emergency while reducing vulnerability to future emergencies, 2) target conservation of productive assets at the household level and 3) reinforce and build upon existing patterns of coping.

Mitigation activities include a variety of possibilities that might use food, commodities (feed supplements, small ruminants) or cash-for-work to reduce the loss of assets. FFW or CFW activities may have a side benefit of bringing about tree planting, land reclamation or the construction or repair of roads and infrastructure. Mitigation interventions differ conceptually from development projects in timing (punctual, prior to distress migration vs. anytime), duration (short-term, vs. long-term) and objective (impact on immediate emergency vs. sustaining the resource base, improved household incomes or health status). Mitigation activities concentrate on keeping rural inhabitants in an operational mode with sufficient assets to work the following season. They enable households to maintain their situation at subsistence or near subsistence until circumstances improve. As such, mitigation activities overlap with and need to support on-going development activities.

Incorporating mitigation activities into Niger's Disaster Assistance portfolio is an innovative approach offered by the DPM. In accordance with the OFDA's Famine Mitigation Activity, the DPM project includes interventions that can be implemented quickly, at relatively low-cost and can be adapted to various situations with relatively high impact. The mitigation activities undertaken under DPM will be scrutinized and evaluated in accordance with meeting these four criteria.

Food insecurity has largely been seen as the inability to produce sufficient cereals to meet consumption requirements. Vulnerable groups have been defined as those whose deficits exceed a certain proportion of requirements (50-75% based on village deficit lists). Because of this link to production capacity, solutions and interventions have largely been conceived in production terms. However, as found during the perception study work and elsewhere, food problems are not just a problem of production. Making food available through food aid to distressed populations or through the production of more food (off-season crops) is not necessarily appropriate or desired by the "victim". The DPM project will take a flexible approach and offer creativity in seeking to match mitigation activities with lifestyles and desires of local populations. In doing so, two absolutes must be adhered to: (1) activities must be technically sound and (2) they must provide a net personal benefit to the recipient.

It is likely that in any one year, various types of mitigation activities will be implemented through arrondissement staffs and local PVO/NGOs that might include free food distribution to destitute villages, school-leavers, or PMI clinic participants, a seed credit scheme, feed distribution, strategic destocking, and food-for-work land reclamation activities or infrastructural development. The exact designation and/or mix of activities will depend upon the objective (targeting the most at-risk or infusing resources into a local economy) and the local situation: socio-cultural and economic milieu, beneficiary priorities, costs and technical requirements for implementation.

Flexibility and creativity are perhaps most called for apropos the various pastoralist populations. Several points follow:

1. Appropriateness of the activity. It will be crucial to know what forms of income generation are available and acceptable to herders. Experience shows that trying to diversify herders into 'foreign' activities (e.g., gardening) has limited life. It will be better to help pastoralists pursue alternatives that are based on their lifestyle and are consistent with their socio-economic objectives in maintaining the family unit intact. Sustainable interventions such as the ecological management of rangelands are long-term activities not short-term mitigation interventions. An IFAD report argues to keep pastoralists in their zone, rather than diversify. Not only is traditional pastoralism a more environmentally sound means of livelihood but it is also the most preferred. It is recommended that pastoralists be assisted to better withstand drought within the context of their economy.

2. Land/resource tenure issues. Critical to famine mitigation and response activities with herders will be an understanding of rights to pastures and watering sites and the traditional patterns of movements that are well established and known.

3. Personal benefit. Considerable creativity and consideration will be needed to understand what pastoralists see as their personal benefits. A joint CARE/ILCA project in Ethiopia had considerable success with involving pastoralists in food-for-work initiatives to dig ponds, maintain wells, build cement-lined water tanks and learn hay-

making and storage techniques for the future.

During the first years, the DPM project will inventory and pilot test possible mitigation interventions tailored to meet local and regional needs. Experience in Niger already suggests various options for working with pastoralists: supporting traditional migration strategies; stocking feed supplements in good years at local and regional levels; early harvesting of failed crops to feed as livestock supplement later in the drought; promoting timely herder destockage; initiating herder's saving schemes to preserve capital gained through animal sales; undertaking specific animal health programs and creating opportunities for earning alternative incomes.

Another group meriting particular attention are women in the identified vulnerable populations. As discussed earlier, women-headed households often are more at-risk as are widows and pregnant and lactating women. Again, whether food aid is the most desirable mitigation intervention is worth investigating. Various development projects have intervened on behalf of rural women in differing locales and among different ethnic groups with varying levels of success. Lessons can be extrapolated from these development initiatives to inform the selection of mitigation activities. One intervention worth looking at is the provision of small ruminants to women. Throughout Niger, women keep sheep and goats as liquid savings, they manage their account to meet current and future needs, and they have traditional patterns of sharing/redistributing animals within their group. The exact form of the intervention varies but generally involves the supply of a goat or sheep to individual women who pass on the first offspring to another woman and so on. Of the various interventions tested by the PCAN UNICEF project (gardening, boutiques, cereal banks, mills), supplying small ruminants to women has had the widest application and success rate (Vaillot, pers comm). The Africare Goure project offers a similar testimony. Providing small ruminants to at-risk women in the form of free distribution or as payment for work may be an appropriate mitigation activity to complement other initiatives.

1. Participation in FFW/CFW Activities

Implementation of FFW/CFW activities and the issues involved are discussed elsewhere in this project document. The following section focuses on considerations related to participation in FFW/CFW programs, that is, who participates, who doesn't and why.

Motivation and incentives to participate in FFW or CFW activities are likely to be influenced by a variety of interacting variables. Several are highlighted below in abbreviated form:

Cultural norms. Given the historical pattern of social stratification in Niger, standards of what is and is not considered acceptable work are well-ingrained though vary from group to group. For example, Toubous do not work with donkeys. The noble classes disdain manual labor, and, in general, men do not carry things on their heads. Upper-class Zarma women may be culturally prohibited from digging in the ground while settled Bella living in same area do. Class and gender differentiated roles will determine who actually participates in which activities.

Even when paid in food or cash, people discriminate about what activities they will undertake. In planning famine mitigation activities, it will be important to appreciate cultural norms and taboos. This is not to say that modes of behavior are stable and unchanging. Experience shows that in times of distress, people take on roles and tasks they otherwise would reject.

Class, caste and gender divisions likewise influence modes of interaction and communication patterns in terms of who works with whom, who listens to whom and who hears about an activity. Hierarchical patterns control access to specialized information. Examples are numerous: villagers refusing to listen to a lower-class well-digger resulting in a well being badly located; women not wanting to work alongside others of lower status; information not moving from men to women; access to resources including information resting within the chief's kin group.

Self-interest; Objective of project and consistency with participant priorities. FFW/CFW projects can be implemented to address food security, employment and/or infrastructural needs. Regardless of form, the objective of DPM FFW/CFW interventions will be to offer food or cash (or inputs such as feed supplements, small stock) to poor households that will enable them to refrain from liquidating their productive assets or to pursue degrading coping strategies. The extent to which these activities (including the type of work undertaken and the form of compensation) meet the interests and priorities of participants will influence who gets involved and sustainability of the effort. 'Make-work' projects may engage the more destitute members of a society depending upon the wage rate but lacking a development goal, there is minimal potential for long-term impact. Experience shows that if the FFW/CFW activity undertaken does not meet villagers interests, there is no continued maintenance. On the other hand, if the land reclamation activity, for example, is a priority because individuals do not have enough land, then people will be involved over time. The design team was impressed with a GTZ project site in the Filingue arrondissement where villagers, mainly women and girls, were digging *des al*[4] during the Karim on a distant laterite plateau without FFW in order to gain access to productive land.

Pertinent to this discussion is the issue of natural resource management initiatives as famine mitigation activities on common land in Niger. A great deal of experience is being gained across Niger in this regard related to the reclamation of unproductive plateaus where several villages may claim rights to the land. One common lesson appears to be that all village land claims need to be clearly defined before project start-up. While this resolves potential conflict among villages, it does not clarify who within the village actually will use the reclaimed land. Of the projects visited (GTZ, Keita, and CARE/Galmi), future access to reclaimed land is accorded to those who do the work. The actual 'who' in terms of benefits is uncertain. Women

[4] Fairly small shallow holes (30-50 cm diameter and depth) to form pockets where millet or sorghum is planted. Earth which is removed is piled around the edge to form a small dike to hold water. Manure is placed in the hole to provide fertilizer and to stimulate termite invasion whose tunnels increase water infiltration.

tend to do the majority of the work, but the reclaimed parcel is likely to be a 'family' field over which the wife has little control. Also, one can assume that not everyone in the village participates and thereby gains access to land. Who does not participate?..."the lazy" as reported in one village or, perhaps, families without labor to support additional dry season activities or 'outsiders/newcomers' who cannot lay claim to village land. Are such groups becoming increasingly marginalized? Are supplemental activities needed to purposefully target such groups in order to lessen potential socio-economic inequalities? Brief interviews with several women working at a Project Keita site indicated that they had access to several parcels reclaimed on the plateau. Are project benefits accruing to a limited number of village residents? It is recommended that the DPM undertake a conclusive study related to these questions regarding land tenure and access on reclaimed common lands.

Targeting. An espoused advantage of using FFW/CFW as an implementation mechanism in famine mitigation is that it self-targets the most needy. This is accomplished through setting the wage level at market or submarket rates or using food as compensation that only the poor and women will work for. It should not be assumed, however, that such activities will necessarily reach the poorest of the poor as indicated above. In fact, experience indicates not.

Research in Ethiopia found that a substantial portion of the participating households came from the upper income bracket. A Peace Corps volunteer living close to one of the Keita sites offered her observation that the participating women were from the upper-crust. Their incentive to participate was considered to be linked to the accorded status of being a project participant and being on-line for future activities. It may be more realistic to assume that food-for-work activities will not reach everyone in a village unless particular methods are implemented. The IFPRI analysis of public works projects will shed light on this.

The NIGETIP model is biased towards able-bodied workers, possibly to the exclusion of more vulnerable individuals, including women. This is consistent with the project's purpose in contracting to complete a project on time and within costs. Again, the objective of the FFW/CFW activity bears directly on who is targeted for participation. A Caritas program in Niamey with the objective of distributing food aid to the needy - mainly widows with children, abandoned women and the elderly people - had to exclude able-bodied men as eligible since they were so many.

Women as a target group of FFW activities has received considerable attention and highlighted some concern, particularly in terms of the added burden FFW projects place on women. Because men are often absent on migration during the dry season, are engaged in more lucrative activities (commerce, cash cropping), or have other competing priorities, women are the major participants in FFW projects. Women see participation as a way to increase the family food supply in situations where they have few alternatives. The IFPRI analysis of Public Works Programs in Niger indicates that the principal reason for participation is to increase household consumption. While these projects add heavy labor to women's existing work loads, they also provide an important source of food and nutrition to the household. In many cases, several women from the same household join the activity and share domestic tasks while rotating work

on the project. While it is certain that FFW provides an important food supply that reaches families through the mother, the social costs of women's participation need to be weighed in terms of its impact on child care, health and the opportunity costs to women's time. To participate in FFW projects often means that regular work must be accomplished through burden-shifting or burden-sharing. A point worth considering is whether women are expending more calories on project activities than they are receiving in the food wage.

A distinction can be made between immediate benefits of limited duration and long-term benefits. Women may receive an immediate benefit in the form of the food wage for participation in natural resource management or water harvesting activities. However, the longer-term benefit in terms of increased land productivity may not accrue to women since access to the improved land may be restricted by cultural patterns and land tenure rights. In this regard, a potential problem has been noted where women provide the labor and learn the techniques of land reclamation but are not interested in maintaining structures or ensuring continued productivity of the recuperated land in the absence of any benefit. Sustainability becomes the question.

The wage in FFW/CFW activities elicits the self-targeting mechanism. Whether to use food, cash or a combination of the two must be made on a project-by-project basis. While FFW is more administratively burdensome, it is more consistent with a food production objective and likely to better self-target women and the needy. In large quantities, however, it has the potential of depressing local food prices and thereby creating disincentives to local production. Carruci of the Keita Project is adamant about the preference for FFW given its compatibility with production and food objectives -- minimal disruption will occur when the project stops as increases in household grain production brought about by the project takes over. The appropriateness of CFW will depend upon access to and robustness of the market to buy food. The IFPRI analysis of Public Works Projects in Niger indicates that, in general, people prefer food over cash for work.

If the intent is to target women, or at least not to exclude women, food may be more culturally acceptable. Traditionally, people use food (meal) to pay for cooperative field labor. Also, food is within the woman's traditional domain. It is commonly assumed that women have more control over food than cash and that women prefer being paid in food which they can control. The degree to which these assumptions operate for Niger is unknown. Rural Nigerien women have independent incomes and manage small amounts of cash independently, but it is unknown to what extent women would be allowed access to the cash-for-work program or would control the generated cash.

As indicated in the above, the distinction can be made between participant and beneficiary since they are not always the same. Again, it will be best to consider class, caste, and other social divisions within the region:

* Direct beneficiary. FFW participants are part of the overall beneficiary group. For example, mothers who have malnourished children participate in a dry season gardening

project and receive food supplements.

* Indirect beneficiary. The mitigation activity may benefit a group other than the participants. For example, landless laborers receive a food wage for digging trenches and recuperating land on the plateau that will provide land and conservation benefits to settled farmers.

* Generalized benefit. Road construction benefits all members of a community including those receiving FFW. Evidence shows, however, that lower income groups (the usual participants in FFW) will benefit less from completed structures than better-off sections of the community. For example, a renovated school may only serve those living nearby.

Timing of the Activity. When an activity is undertaken influences who participates. Most famine mitigation activities take place during the dry season as the time of greatest need and when people are not occupied with subsistence cropping.

For many areas of Niger, the dry season is also the season of labor migration and dry season cash crop cultivation. Women, children and the elderly are often the only people left in many villages of northern Tillaberi and Tahoua Departments. They are the ones available to participate in FFW/CFW activities. A case in point is a NIGETIP Project near Bouza which started late in the dry season and has been unable to fill its labor requirements for able-bodied men. Recruitment was being opened up to include women.

Considerable attention has been given to the dependency-creating effects and the nonsustainability of using paid labor (either in the form of food or cash). This is a problem currently being encountered by CARE and others in the realm of natural resource management and is leading these donors to reject FFW. After years of using FFW in the Tahoua Department to stimulate local participation in resource regeneration, villagers do not see project results as their own and show minimal long-term commitment to the activities. Due to such problems, the Anti-Erosion Project of GTZ is pulling back its regular supply of FFW and using it only as an incentive for participation at the end of the season in certain locales. Criteria are currently being set to determine which villages will receive food aid. This appears to be a conscious effort on the part of project staff to use food aid judiciously as a 'development' incentive and catalyst -- a different objective and process than is implied in famine mitigation to relieve distressed situations. Nevertheless, the criteria being developed by GTZ will be of interest to DPM. As a point of comparison, the Keita Project philosophy is quite different: there is no expectation that people should or will work without payment even on land that they will one day control. Every activity is paid including guarding the reforested dunes and slopes from scavenging animals for two years after planting to ensure establishment of the plantations.

V End Note: Issues

Free aid distribution is fraught with problems as experience with food aid in Niger has exemplified. Often it is difficult to direct food aid to only those villages identified as being food deficit, let alone to those within the village who are in greatest need. Everyone seems to have the right to free aid, regardless of need or status. Many villagers perceive that food aid distributions will continue to be problematic unless 'foreigners' direct and supervise the distribution.

How can DPM deal with the inherent problems of directing assistance to those who really need it? FFW/CFW provides an alternative with its self-targeting potential. Also, working for cash or in-kind payment is consistent with cultural norms across Niger. Implementing staffs, however, will need to pay attention to who qualifies, who participates and who benefits. A variety of famine mitigation activities have been discussed elsewhere in this document. The selection of an appropriate activity and method of implementation, whether it be free distribution, FFW, CFW., self-help or subsidized assistance will depend upon the nature of the crisis/stage of the food crisis being experienced by households; the socio-cultural milieu; local economy and physical environment.

Certainly, in some situations 'free' distribution will be necessary and appropriate (whether it be a distribution of food, feed or agricultural packs). Involvement of representatives from the various strata or groups in the community/population may help to ensure equity in distribution and that the assistance reaches those most in need. Perhaps, the point is not to be so concerned with targeting only the poor as ensuring that the poor and disenfranchised also receive their share including those who will become destitute if their conditions do not improve.

It cannot be assumed that villages or rural societies are homogenous or that they work to the benefit of the larger group. Community participation will be critical in early warning, setting priorities for and managing the response activity. The GTZ Tillaberi Project and others focus on local control. Work groups organize themselves by quartier and select a member as manager. The village handles all food aid distribution. Within the context of DPM, possibilities exist for using village monitors and herders themselves in monitoring food security. Effort, however, will be needed to ensure that the chronically marginalized are represented in community-based activities.

Of concern to the DPM program will be the definition of what constitutes an emergency that warrants project intervention. Defining a disaster as *a situation when people can no longer cope* requires further clarification and precision related to the various agro-ecological, economic and social environments found in Niger. Strategies and ability to cope vary greatly. Further work is needed to determine what is 'normal' in these various situations and what constitutes a deteriorating situation of no return. It will be important to allow positive indigenous coping strategies to continue, not to usurp or erode them, nor to build dependencies upon uncertain external assistance.

PARTICIPATION IN FAMINE MITIGATION ACTIVITIES

Types of intervention	Participation/Benefits Targeted/Nontargeted	Method of Implementation FFW	CFW	Free	Subsidy	Self-Help
Infrastructural development						
wells						
dams/ponds						
road construction (new or improved)						
firebreaks						
Services						
expand nutrition centers						
health clinics						
schools						
sanitation facilities						
disaster credit (to purchase grain,seed, stock)						
marketing/price support						
Crop Interventions						
seed banks/seed savings and loans						
input provision/ag packs						
pest management activities						
seed/grain storage						
local market support						
gardening inputs/support						
Livestock						
native plant nurseries						
intercrop forages into windbreaks, etc.						
feed provisions						
fodder/feed storage						
strategic destocking						
herder's savings schemes						
water resources						
animal health provisions						
Natural Resource Management						
afforestation						
soil conservation						
water conservation techniques						
watershed management						
land reclamation						
Alternative income generation						

LOCAL CHRONOLOGIES OF FAMINE IN CENTRAL AND WESTERN NIGER

Central Niger
Arrondissements of Matamaye, Tanout and Gouré

Western Niger
Arrondissements of Tera, Ouallam and Filingue

Compiled from Field Data, 1992
USAID/Niger

CENTRAL NIGER: MATAMEYE

Date	Village 1 (Fulani)	Village 2 (Fulani)	Village 3 (Fulani)	Village 4 (Hausa)	Village 5 (Bouzou)
1913-14	Kakalaba, drought	Kakalaba	Kakalaba, drought	Kakalaba, drought	Kakalaba, drought
1921-23*	Mai Bouhou, drought	Mai Bouhou, drought	Mai Bouhou, drought	Mai Bouhou, drought	Mai Zarara, drought
1933				El Kommandant, drought	
1941-43*	Mai Tia, grasshoppers		El Tia, grasshoppers	El Tia	El Tia, crickets
1950-54*	Kwajaja, drought	Kwajaja, drought	Kwajaja, drought	Kwajaja, drought	Kwajaja, drought
1973-74	Amaro, drought	Jeki nika, God's punishment - rain but no millet	El Hili, mice/drought	Zololo, drought	Jan Jare, drought
1984	Da'a, drought	Jau Jasma, drought	El Buhari, mice/drought	El Buhari, drought	El Buhari, drought

* Ambiguity in designation of year; time period indicates approximate dates

Names and local interpretations:

Kakalaba: hunger that makes a hole in the stomach; torture
Mai Bouhou: refers to a new sack of the time (50 or 100 kg sack used to transport grain) that was used to collect food.
Mai Zarara: means "to pull"; time when people stole millet from granaries with the help of a cord.
El Kommandant: refers to the whites who distributed food
El Tia: refers to the measure used to buy/sell millet; merchants used 1/3 of normal measure; time when people used the tia to scoop up and sell grasshoppers
Kwejeja/Kwajaja: skinny, emaciated, general famine
Jeki nika: means "Go away, I will pound the millet" which men said to women so they could have the millet to themselves.
Amaro: time when people ate kulikuli from Nigeria
El Hili: meaning "clear space"
Zololo: to get skinny and be drawn out like a rubber band
Jau Jasma: refers to the red sorghum people received
El Buhari: named after the new Nigerian President since people went to Nigeria looking for food; named after the new Nigerian Persident who tried to prevent people from taking food out of Nigeria.

Local Responses: ate famine foods not normally consumed; introduced to cassava flour during Kwejeja; went to Nigeria during the Da'a and smuggled for merchants to get money; left women behind to collect wild foods; ate inedible foods such as calebashes, guadjuda grass and cramcram; went to Nigeria to search for food; ate grasshoppers during El Tia; during the Jan Jare, people received sorghum and did not suffer; sold animals; during 1984, substituted other foods for millet including hibiscus, squash, cassava, sweet potatoes -- "alot of people left and did not come back".

CENTRAL NIGER: MAGARIA, TANOUT AND GOURE

Date*	Village 1: Magaria (Fulani)	Village 2: Magaria (Hausa)	Village 3: Magaria (Hausa)	Village 4: Tanout (Twareg)	Village 5: Tanout (Hausa)	Village 6: Gouré (Kanuri/Hausa)
1914	El Kwatau	El Kwatau	El Kwalaw	Dougwa drought		
1936	Mai Bouhou drought	Mai Bouhou drought	Mai Bouhou	Mai Bouhou crickets	Kana Sani crickets	
1943-44				Gorowa crickets	Mai Gani crickets	Kangale Kouri drought
1949-50		Kwa Jaja drought		Garouna Kwatchi drought		Chut de Lana drought
1950-58*			Mai Kwaki		Sabelle drought	Kalyaren
1973-74	Ka Kuduba drought	Tchinfara crickets	Ka Kuduba	Prendre ta couverture drought	Prendre ta couverture drought	Gandawa
1976					Mai Kousou rats	
1984	Banga Banga drought	Banga Banga mice	Banga Banga	Karjama drought	El Buhari drought	Banga Banga

* All dates are approximations.

Famine names and local interpretations:

El Kwatau: name of the kernel of the dumdum nut that was eaten
El Kwalaw: meaning that famine that hit people hard
Dougwa: meaning the famine that lasted
Mai Bouhou: meaning the famine of the jute sack; the sack that brought food in from the outside; mening to take a sack and search for something to eat; the sack that people took to Kano to find food.
Kanna Sani: meaning "you know" indicating that a famine was certain because crickets had eaten everything
Gorowa (Garwa): name for the kerosene container in which food aid arrived
Mai Gani: meaning a change in customs and hospitality to the point that people were not sharing with each other
Kangale Kouri: meaning "short stalks"
Kwa Jaja: meaning general famine
Garouna Kwatchi or Mai Kwaki: refers to the manioc flour that was distributed
Chut de Lana: meaning "end of life"
Sabelle: meaning "a small amount of millet"
Kalyaren: meaning "the season of the captive"
Ka Ku Duba: meaning "the famine that made people thin"
Tchinfara: refers to destruction by crickets; crickets became the principal food
Prendre ta couverture: meaning "take your blanket and leave" indicating that there was nothing available to eat so one needed to leave or starve
Gandawa: red sorghum that was distributed
Mai Kousou: the year of the rat
Banga Banga: meaning large, general famine; the famine that paralyzed people
Karjama: meaning the famine when people looked like skeletons/people became too thin
El Buhari: refers to the food that came from Nigeria when Buhari was Head of State

WESTERN NIGER: TERA AND OUALLAM ARRONDISSEMENTS

Date*	Village 1: Tera (Songhai)	Village 2: Tera (Songhai)	Village 3: Tera (Songhai)	Village 4: Ouallam (Zarma)	Village 5: Ouallam (Zarma)	Village 6: Ouallam (Zarma)
mid-late 1800s		Jamari Fumba		Kow-Kow red crickets		
1900-1903		Zarma Ganda Jirey drought/crickets		Ize Neera red crickets		
1911-1915	Ganda Beri	Ganda Beri		Ganda Beri or Yolamoru, cricket		
1920s	Pamparam red crickets		Gounga Hanna crickets			
1930	Wande Wasu red crickets	Wande Wasu	Wande Wasu crickets	Soudan	Soudan	Soudan
1932	Haray Keyna red crickets					Soudan Keyna
1946	Ataram drought			Yedda Koni	Yedda Koni	Yedda crickets
1951		flooding				Himchiney Nya Kangey, drought
1954-56	Gari drought		Gari drought	Gari	Gari	Gari
1967	Banda Bare drought	Banda Bare drought	Bande Bare drought	Banda Bare	Banda Bare drought	Banda Bare
1970	Tombola drought					
1972		Konorra epidemic				
1976	Koporro drought					
1984	Jebba Zoli drought	Jebba Zoli drought	Jebba Zoli drought	Faww drought	Jebba Zouroukou drought	Jebba Kuru drought

* All dates are approximations Source: Stryk Thomas, field data 1992

Famine names that reflect local experiences

Jamari Fumba: meaning, "everyone stank"
Kow-Kow: refers to the sound of pounding in empty mortars
Zarma Ganda Jirey or Ize Neera: children were sold in exchange for millet or at regional slave markets in order to buy food
Ganda Beri or Yolamoru: refers to how the famine affected a huge area; also means "bloated stomach", an early sign of starvation; also referred to as the time when women were in such a hurry to eat their little bit of food that they started chewing on their pigtains as well
Pamparam: refers to a great famine
Gounga Hanna: refers to living and gardening on small islets which appeared in the river
Wande Wasu: means "avoid your wife", referring to the time when men sent their wives away because there was only enough to feed themselves
Soudan: the time of too much rain
Haray Keyna: meaning small famine
Ataram: referring to the time that people looked everywhere for food and found nothing
Yedda Koni: meaning "Yedda had some food" where villagers went (near Baleyara)
Himchiney Nya Kangey: refers to a species of grass
Gari: meaning, "the year of the manioc flour" when manioc flour was distributed
Wanda Bare: meaning, "turn your back on others", and secretly eat
Tombola: those who found food considered it like winning the lottery or "tombola"
Konorra: referring to the time when there was "vomiting and diarrhea until you died"
Koporro: time when people received food from a distribution center
Jebba Zoli, Jebba Zouroukou, Jebba Kuru: meaning that clothing fell off thin bodies
Fawu: meaning, "absolutely nothing"

Other Local Responses: ate wild foods not normally consumed; sent women away; during Ce Kuri, people waked in search of food until their feed bled; received food aid; moved village to higher ground after flood; during epidemic ate Acacia nilotica seed as traditional medecine to survive; raided ant nests for food; dug pits and lured crickets into them and then buried the pests; ate millet bran; sold livestock if had any; during Jebba Kuru, migration started (for first time in one village).

WESTERN NIGER: FILINGUE ARRONDISSEMENT

Date*	Village 1 (Zarma)	Village 2 (Zarma)	Village 3 (Zarma)	Village 4 (Zarma)	Village 5 (Zarma)
1915	Ganda Barey crickets	Ganda Barey crickets			
1922			Tama Banyaize	Tama Banyaize drought	Tama Banyaize
1932-33	Soudan crickets	Soudan	Maouri Koni drought	Soudan too much rain	Soudan
1937	Dezey underground pests		Haray Bero Nda Sey		
1942			Mangaize Koni red crickets		
early 1950s	Toukoulfa	Toukoulfa	Tchoukourfa crickets	Takoro	
1954-55	Gari	Gari	Gari too much rain	Gari	
1969	Kiilo	Banda Barey	Bande Barey drought	Banda Barey drought	Banda Barey
1981				Burtchin Teyfa drought	
1984	Kogay drought	Kan Ta Kala Je	Kogay drought	Kossou-Kossou drought	Kan Ta Kala Je
1990	Jebbe Kuru				

* All dates are approximates

Source: Stryk Thomas, field data 1992

Famine names and local interpretations:

Ganda Barey: same as for other villages
Tama Banyaize: meaning that one kept the coin for oneself and didn't give it to one's kin
Soudan: time when there was too much rain, when there were enough crickets to fill up a house, when the "hyenas ate the bodies"
Maouri Koni: referring to when "the Hausa had some" and people went to Hausa country and back food on their heads
Dezey or Haray Bero Nda Sey: means, "the scattering" when people abandoned the village and scattered looking for food
Mangaize Koni: referring to when "the people towards Tahoua had some" and people went to Tahoua for food
Toukoulfa, Tchoukourfou, Takoro: refers to mats used as packaging when grain was brought from Tahoua in mats and sold
Gari: the 'year of the manioc flour' when manioc flour was distributed
Banda Barey: means "turn your back..." on people and eat in secret
Burtchin Teyfa: refers to people who went to a garden and were given food by the garden owner
Kogay: meaning," a great dryness"
Kan Ta Kala Je: meaning "nothing but the providence of God"
Kossou-Kossou: meaning "emptiness"
Jebba Kuru: refers to clothing falling off people's thin bodies

Other local responses: ate livestock, wild leaves and roots; drank goats blood; women sifted sand for stray millet seeds; in 1984, received food remittances from kin on exode; depended on food aid.

LITERATURE REVIEW: DISASTER PREPAREDNESS AND MITIGATION

Prepared by Ellen Taylor-Powell
March 1992

The following review was undertaken as part of a study on victim's perceptions to disaster/famine during the design of the Disaster Mitigation and Preparedness Project. The perception study has the purpose of (1) better understanding how 'insiders' view and respond to disaster and food stress and (2) tapping the local knowledge base -- both of which are fundamental to building self-sustaining interventions.

The literature on disaster and famine is immense. For the current purpose, concentration was placed on material relevant to the Sahel and Niger from a socio-economic perspective. The following synthesis has been liberally extracted from those documents to cover thinking and empirical results related to: famine/disaster in Africa; food security; vulnerability; early warning systems; coping strategies and traditional assistance.

I FAMINE/DISASTER

In Niger, as in Africa in general, disaster, defined as a *crisis that outstrips the capacity of a society to cope with it*, is largely synonymous with famine. In the early 1970's, famine was explained as the failure of food production due to natural causes, especially drought. Today we recognize that famine is not the result of a single event or one bad production year but as resulting from various events and underlying processes that lead to a prolonged reduction in food intake. And in Africa, while drought is associated with famine, it is not the cause of famine. Drought might be a precipitating factor, but it is one among other factors including the social, economic (regional, national, international systems), political and environmental situation that allows for a collapse in food access.

Over the years, the definition and causes of famine have changed with concurrent changes in disaster response activities. Currently, the focus is on the distributional issues inherent in food insecurity. The move is from seeing food crisis in Africa as problem of food supply (i.e., people starve because of insufficient supplies of food, food availability) to understanding famine as an issue of access to food, or food entitlements.

> Starvation is characteristic of some people not having enough food to eat. It is not characteristic of there not being enough food to eat (Sen, 1981).

Increases in national food production do not necessarily signify improvements in food access among all socioeconomic groups. Access to food depends upon purchasing power, market efficiency, and transportation networks among other factors.

The most recent analysis of the cause and impact of famine comes from de Waal's work in Darfur, Sudan during 1984-85 where it was found that satisfying the pangs of hunger was not

people's priority. Rather, their priority was to preserve their way of life by keeping enough resources to cultivate the next rainy season or keeping their animals alive. This challenges the widespread belief that obtaining food is the central preoccupation of famine victims. Likewise, de Waal suggests that the some 100,000 deaths were caused primarily by a health crisis, not starvation. Localized disease outbreaks, particularly measles and diarrheas, resulted from population concentrations and consequent lack of sanitation and clean water. He argues that rather than food aid, measles vaccines, clean water and better sanitation would have saved lives. Food aid served a more important function as an income transfer than as a nutritional supplement in reversing grain price increases and allowing food aid recipients to take fewer loans and sell fewer animals at distressed prices.

> ...it appears that relief interventions simply misdiagnosed the problem, treating a major health crisis as if it was (only) a food crisis...tens of thousands of lives might have been saved if social disruption had been minimized by taking steps which allowed people to stay in their villages or, failing that, if water supplies had been kept clean and children immunized against measles and other diseases.

Based on a four-year study of famine in Africa, research from the International Food Policy Research Institute (IFPRI) concludes that famine is preventable in Africa Famine is considered to be almost entirely man-made and only partially the result of natural disasters. Famine is seen as inseparable from poverty -- drought triggers famine because poverty exists (Von Braun, 1991). The underlying conditions of famine-stricken households are the lack of employment opportunities, limited assets such as cash or livestock, isolation from major markets because of scarce roads and transportation, unavailable credit options, lack of adequate farm technology and poor health and sanitation. The IFPRI conclusions emphasize the need to build productive capacities of rural households through appropriate economic policies.

II FOOD SECURITY

Food security is defined as *the access by all people at all times to enough food for an active, healthy life. Food insecurity in turn is the lack of access to enough food* (World Bank, 1986:1). A further distinction is made between chronic and transitory food insecurity:

> Chronic food insecurity is a continuously inadequate diet caused by the inability to acquire food...Transitory food insecurity is a temporary decline in a household's access to enough food and in its worst form it produces famine.

In Niger, the 'soudure' or hungry period is a time of seasonal food insecurity. Food insecurity may be considered transitory because it occurs during only part of the year, but is chronic in hat it occurs every year (World Bank, 1991a). The transitory food insecure, probably the most dominant group, have developed multiple coping mechanisms to carry them from one harvest to the next. In years of total crop failure or drop in purchasing power, however, disaster occurs. In contrast to the seasonally insecure, the chronically food insecure fail to eat enough

throughout the year. Others describe food insecurity in terms of intensity or severity where food insecurity is classified as none, mild, or acute.

In the Sahel, the more northern areas are generally considered to be more food insecure. Data from both Mali and Burkina Faso, however, have not found this. In Mali, northern households have developed more diverse income sources and are less dependent on rainfall levels using off-farm income to purchase food. Southern households attempt to assure household food security through their own production and tend to purchase grain only when this strategy fails. Thus, northern households have evolved strategies that allow them to mitigate the climatic effects on consumption to a greater extent than southern households (Staatz, D'Agostino, Sundberg, 1990). Similar findings come from Burkina Faso (Reardon, Matlon and Delgado, 1988) where the more northern populations were found to be less vulnerable to production deficits based on climate since they are involved in a more diversified, multi-sectoral strategy. "Targeting of food aid was guided primarily by indices of rainfall and per hectare yields. These criteria appear not to have taken directly into account that the Sahelian households compensated for lower per hectare productivity by cultivating a larger area per adult equivalent, nor that they earned more non-cropping income, which gave them more purchasing power than their Sudanian counterparts" (pg. 1066).

Results from the IFPRI survey of 100 households in Western Niger indicate that in a 'good year' (1983-4), most households produced enough millet to feed themselves for at least a year after harvest in both the northern (Ouallam area) and intermediate zones (Boboye area). In the drought year of 1984, the average household was able to feed itself for four months from its harvest. By 1985, only about 1/3 of the sample households were able to make it through the year on that year's harvest. Purchasing power appears to be similar between years, implying that there are sources of non-cropping income which compensate for fluctuations in cropping income. Results point to the importance of non-agricultural activities throughout the year, not simply in the 'off-season' (Hopkins and Reardon, 1989). In an ICRISAT Burkina survey, non-agricultural income was found to supply approximately half of total rural income (Reardon and Matlon, 1989).

III VULNERABILITY

Further understanding is provided by the work on vulnerability. Distinct from poverty, vulnerability is a concept that best explains who suffers in a disaster. Vulnerability is defined as *defenselessness, insecurity and exposure to risk, shocks, and stress* (Chambers, 1989). There is a shift from viewing famine as mass starvation to looking at the vulnerability of specific groups of people. Famines do not affect all equally: some suffer, while others may gain during a crisis. The rich seldom starve. Even in famine prone regions within a country, where everyone is relatively poor, the impact of the crisis varies by socioeconomic group.

The concept of "entitlement" as developed by Sen (1981) acknowledges that individuals have differing access to resources, land, labor, and capital and thus, differing levels of vulnerability - between and within households. Differing access to resources within households means that

some family members bear the brunt of a shortage more than others. Levels of vulnerability vary over time and according to social, economic, and political status (Downing, 1990). For example, herders often find themselves in a disadvantaged position compared to settled farmers and rural residents as compared to urban dwellers. Also, vulnerability is defined according to the risk involved; e.g., vulnerability to ill-health; vulnerability to food shortage, vulnerability to famine; vulnerable to disaster, including epidemics, floods, famine, etc.

Downing (1990) argues that analyzing vulnerability requires identification of the unit and scale of analysis whether it be the region, household, or individual level (see Downing, 1990:25 for indicators at each level):

1) Regions are vulnerable to food shortages (shortfall in food availability) as influenced by geographic location and institutional development, the adequacy of infrastructure to support agricultural production, distribute food to markets and to provide health services, for example.

2) Households are vulnerable to food poverty (and to regional food shortage through food poverty). Food poverty is the lack of resources to obtain sufficient food for the entire household as influenced by income, cultural preferences, age-sex distribution and household composition.

3) Individuals are vulnerable to food deprivations (often related to household food poverty and regional food shortage). Food deprivation occurs when food consumption and utilization are insufficient to meet nutritional requirements as linked to nutritional, health and social status.

Household food security can be gauged as the degree to which food availability (own production, exchange production, transfers, and assets) meet consumption requirements. Measures of food availability may then be defined as follows (Downing, 1990):

Subsistence production: yields and production from food crops, livestock and common areas. Potential indicators are rainfall, NDVI, agricultural statistics, crop inputs, labor.

Exchange production: cottage and artisanal activities, off-farm employment, cash crops and labor. Primary indicator is market prices.

Transfers: access to and level of contribution from government and nongovernmental sources (including food aid), remittances from relatives, and community sharing. Indicators might include food aid stocks and cash crop prices in areas of migrant labor.

Assets: land, buildings, jewelry, livestock, food stores, and cash. Indicators might rely on market observations of asset sales.

The focus on vulnerable groups allows greater specificity in assessment and monitoring tools. Explicit is that vulnerability varies among groups of people. The specifics of who is affected in a particular famine/disaster depend on the causes of the situation as they relate to the entitlements of different groups and individuals within these groups, e.g., pregnant and lactating women, pre-school age children, and the elderly are often the most vulnerable.

While there is interest in categorizing populations by levels of vulnerability -- herders (nomads, transhumant, sedentary, agro-pastoralists) farmers (smallholders, migrant, landless), and urban residents -- rarely do social groups pertain to one production system alone. Degrees of overlap exist between production systems. Even 'pure' pastoralists rarely rely upon livestock as their sole source of income. However, socioeconomic patterns may be discernible to allow categorization of types as "predominantly pastoralist" or "predominantly agriculturalist" to indicate differences in response, e.g., pastoralists are generally less willing to sell or slaughter livestock.

Increased levels of vulnerability have been linked to various socio-economic changes including (1) population growth and migration where new immigrants do not have sufficient knowledge of the surrounding ecosystem and lack kin support networks, (2) sedentarization of pastoralists who may be subject to land degradation, local crop failures and lack mobility to seek distant pastures, (3) changes in land distribution from dispersed to consolidated areas eliminate possibilities to optimize favorable micro-environments, and (4) changes in land tenure from communal to freehold increase vulnerability of those without rights or who obtain marginal lands.

Markets, transport, communications. In assessing vulnerability the spatial dimension must also be considered. Vulnerability is dependent upon climate, soils and infrastructure (natural and manmade resources); nature of the markets and spread of market failures, and transportation infrastructure. Of concern is how easily food moves from surplus to deficit areas. Such movement can be constrained by government restrictions, urban dominance, poor roads, minimal transport, uncertain information about demand in remote places, etc. Agadez, Arlit, Tcherozerene may be chronic food deficit areas but mining and tourism, for example, provide alternative economic possibilities to reduce vulnerability if the market functions effectively.

The functioning of rural product and factor markets in grain deficit zones plays an extremely important role in determining household food security. In particular, the ability of rural distribution markets to deliver grain reliably to grain-deficit rural households at low cost is central to the ability of these households to assure adequate levels of consumption. Price volatility hits hardest those poor households that sell grain early in the season to meet pressing cash needs and repurchase grain late in the season to meet consumption needs.

Some researchers assert that vulnerability is increasingly linked to people's dependence on markets. The poor are particularly vulnerable to adverse price movements. Local traders hold the power to mitigate or increase stress of villagers in food crisis situations. Household vulnerability is closely linked to local market conditions which in turn are linked to national and

international economic situations. On the other hand, one can also argue that those who are less diversified and more isolated (less integrated into the market) are more vulnerable to climatic irregularities.

The IFPRI household survey in Niger indicates that rural households purchase substantial amounts of food, mainly cereal, in both good and bad years. This again points to the importance of non-cropping income and its effect in easing fluctuations in crop production. Cereals, mainly millet, dominate crop purchases. Farmers are not self-sufficient in food production. Agricultural coping strategies can reduce the impact of drought but not eliminate the need for food from other parts of the country and region which demand the need for viable redistribution channels.

IV EARLY WARNING SYSTEMS[1]

An Early Warning System (EWS) is defined as *a system of data collection to monitor people's access to food in order to provide timely notice when a food crisis threatens and thus to elicit an appropriate response.* Early Warning Systems grew up in the wake of the African famines during the 1970s. Since then they have turned from warning of impending crisis to continuous monitoring of the socio-economic conditions of specific groups (Davies et al, 1991).

Indicators used in EWS have evolved from a focus on crop production and rainfall data in the 1970s; through remote sensing and nutritional data in the 1980s; to an emphasis on socio-economic information in the late 1980s and early 1990s. The current emphasis on the merits and shortcomings of various indicators, however, risks to divert attention away from the basic issue which is the use and effectiveness of information generated by EWS in policy decision making.

Different sets of information used in early warning are categorized as meteorological, natural resource, agricultural, nutritional and health, and socio-economic (see Davies 1991 for discussion). Limitations of some of the more conventional indicators have led to the use of socio-economic indicators because, ultimately, famine is a socio-economic event:

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[1] Currently, the FEWS system in Niger identifies three major groups: farmers, herders and urban dwellers though for the latter there is inadequate data to assess vulnerability. Farmers and herders make up 85% of the population and are considered to have the highest level of current vulnerability. The FEWS vulnerability assessment is based on quantitative (production, prices, health and nutritional status) and qualitative (alternative income sources) information from GON databases and reports for each arrondissement. Preliminary screening is based on cereals production (millet and sorghum) for agriculturalists and pasture production and terms of trade for herders. Terms of trade are measured by how much millet the sale of a buck (male reproductive goat) will buy.

> Crop forecasting and food balance sheet assessments alone can at best let us know where particularly vulnerable areas lie, but they can say little about how close to famine are the people living in those areas, or which groups and classes within that population are most vulnerable to famine (Cutler, 1985 in Davies et al, 1991:26).

Types of socio-economic indicators for early warning include (as presented in Davies et al, 1991):

1) market indicators: signifies the importance of exchange relationships as a determinant of famine.

2) migration: important but difficult to distinguish between different types of migration, e.g., seasonal versus destitution migration; local labor.

3) local off-farm employment and price of labor: only possible for local-level information systems.

4) gathe.ing, bartering and consumption data: indicate food stress but are rarely included since difficult to collect.

5) assets: investments, stores and claims (Swift). Food stores are probably the most widely monitored form of asset but there are practical difficulties in monitoring them. Few examples exist of EWS monitoring households' or individuals' claims on one another given the difficulty in monitoring. Inter-household transfers and loans, however, have been identified as part of the sequence of coping strategies. Sales of assets can be monitored as part of market monitoring.

6) coping strategies: requires collection of a range of socio-economic information to understand coping strategies and therefore to identify appropriate indicators.

While thinking and conceptual approaches have moved away from predicting food shortages at the national level to assessing the vulnerability of particular groups in terms of their access to food, in reality, many EWS, especially at the national and international levels, still are geared to estimating national food deficits. In building systems that include socio-economic data, a primary consideration must be the agency's time and resources available for data collection, data analysis, and use of the information.

V COPING STRATEGIES

Coping strategies are defined as *the social and economic choices, within a limited range, that people in famine prone areas of the world make when faced with threatened food shortages* (D'Souza, 1989:7). A focus on coping strategies in disaster mitigation is an attempt to take into account the priorities of those affected by famine/disaster. It is to capitalize on what people can

do for themselves before drawing on external resources. The concern is to gear responses to reinforce existing positive coping strategies, not to breakdown or ignore systems that work.

> The essential issue in famine prevention is to avoid, at all costs, social dislocation since it is this which is the main killer. One way, it is suggested, of achieving this is to identify, understand and then support local coping strategies as the cornerstone of famine prevention programmes (D'Souza (1989:7).

Proponents of microlevel preparedness and mitigation efforts argue that by monitoring coping strategies or *behavioral indicators of food deficits*, much information can be gleaned about the imminence and threat of famine. Likewise, it will be possible to identify coping mechanisms which may be less effective than in the past or which are having negative impacts and may need to be discouraged.

Specificity of coping strategies. During the 1980's considerable research was undertaken on local strategies for coping with famine. This research found that coping strategies are often specific to particular groups as related to socio-economic status and the local economy. Coping strategies vary from one locality to another and by socio-cultural group within a locale. They are not static, but vary by year in relation to resources conserved/depleted from the previous year and nuances of the local economy. In Niger, a successful drought strategy for WodaaBe herders is to move their animals south as soon as it is evident that their traditional pastures are affected by drought. In contrast, for the Twaregs of the Tchintabaraden region during the 1984 drought, the more successful ones were those who stayed in their traditional northern region (Cord et al., 1986).

To use coping strategies as indicators of food stress, early warning systems must be able to assess the process of intensification (stressful events growing worse) as well as to know what is 'normal'.[2] The distinction must be made between that which may occur seasonally and that which is 'unexpected' or 'abnormal' which requires a depth of analysis uncharacteristic of most early warning systems. Also, socioeconomic indicators must be applied soon enough, that is during the early stages of food stress, to enable an appropriate and timely intervention. Because of these difficulties, it is likely that explicit incorporation of coping strategies in early warning systems will remain marginal (Davies et al, 1991).

Others contend that FEWS could be improved by monitoring selected coping strategies. A Devries report (1987) prepared for FEWS/Washington reviewed approximately 200 documents in order to examine how coping mechanisms can be used as socioeconomic indicators of famine and their linkage to plausible famine mitigation interventions. The authors argue that coping mechanisms can be used as socioeconomic indicators of the famine process as they reflect

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[2] de Waal argues that normal years rarely occur; rather what is real is a normal spread of some good and some bad years. USAID/Niger field data with Bella communities supports this where their expectation of a 'normal spread' is a two-year cycle of good and bad years.

various stages of a food crisis. Current efforts are moving toward constructing frameworks that link indicators to stages of the food crisis and to appropriate interventions. The authors feel that it is possible to have a generic framework to which one adds site-specific information provided by local monitors. Various practitioners recommend the use of local paraprofessionals, for example, herders, themselves, in the local monitoring of food and animal feed security.

A. Types of Coping Strategies

Campbell (1990) distinguishes three major types of coping strategies:

(1) Economic strategies are the basis of product diversity that characterizes production systems and is essential to risk reduction in uncertain climatic environments. Farmers spread risk by cultivating a variety of crops that respond differently to different production conditions. The rationality of mixed cropping has been widely recognized as has been the value of mixed livestock keeping where mixes of cattle, sheep, goats, camels make use of different types of grazing resources and quantities of water. Economic diversity is further extended through off-farm activities and labor migration. Smallholders work to accumulate resources that can be liquidated in times of need: stored grain, livestock, personal possessions, implements and labor.

(2) Social strategies are those which redistribute available resources in a community through institutions such as the family, clan and age set. Sharing of resources within a community is based upon the concept of **reciprocity**. Help at one time may mean repayment of assistance in the future. The range of reciprocal activities is great including loans or gifts of money, food, and/or animals, splitting of herds into smaller units, sending children to live with relatives, encouraging children to eat with neighbors, marrying young daughters to wealthy men in expectation of assistance, etc. There are indications from other African societies that traditional social strategies are breaking down. For example, the extended family, in being replaced by the nuclear family, is losing its cohesive role in organizing both the production and distribution of food. In Zimbabwe, farmers rely more on the market and the state as a source of food and on alternative institutions such as farmer organizations than on the extended family (Campbell cites Bratton, 1987)

(3) Ecological adaptations include such practices as strategic planting of different crops related to soil qualities and micro-variations, systems of fallow rotations, manure practices, intercropping nitrogen-demanding grains with nitrogen-fixing legumes, and movement patterns of pastoralists that access wet and dry-season grazing and water.

B. Coping Strategies are Part of Rural Production Systems

Coping strategies "are not unique measures resorted to only in times of stress but are elements that exist at all times and assume greater importance under difficult conditions" (Campbell, 1990:154). They are not haphazard or random in manner (Corbett, 1988). Rather, coping strategies reflect thoughtful decision making where farmers weigh options, consider resources and possibilities and make decisions in sequential order as events unfold. de Waal's study in

Darfur, Sudan of 1984 found that once it is evident that harvest failure is imminent, "people know that they have to make their resources cover a full twelve to fifteen months and husband them accordingly". They consider resources available, current and expected food prices, seasonal opportunities for wage employment and availability of wild foods. Drought "victims" are not passive but are active players in searching for viable alternatives[3]. Crisis arises when adapting mechanisms break down.

Coping strategies are categorized as

1. anticipatory, precautionary or insurance strategies - those that insure farmers against hardship. They are developed in response to repeated exposure to the same non-acute risk such as seasonal food shortages and include such practices as thinning a crop during moisture stress or decreasing manure applications.

2. crisis strategies - survival strategies that are resorted to when acute degrees of stress are experienced. They are developed to cope with unusually severe or unexpected threat to food security and threat of famine such as sales of assets and mass migration (Rahmato from research in Ethiopia and Corbett, 1988).

C. Asset Management

The way a household manages its stock of assets is a critical part of its coping strategies and thus indicates its food security situation (Corbett, 1988). The quantity and kind of assets a household possesses determines its current and future income. Two types of assets are distinguished:

(1) assets which can be easily liquidated and form a type of savings and self-insurance, e.g., small stock and jewelry;

(2) assets which serve as stores of value, key productive assets that generate streams of income for the household, e.g., land or cattle.

When households are faced with declining entitlements to food, they dispose of those assets which are held primarily as liquid savings and do not readily dispose of key productive assets. At the same time, they reduce food consumption, gather wild foods, increase petty commodity production and labor migration. Watts research in northern Nigeria (1983) found substantial differences in the way households behave during famine depending upon their income levels. In the semi-arid agricultural areas, capital ownership is the key variable in determining how farmers respond to drought (Swinton, 1988). Swift (1989) suggests that "low asset status in rural communities is a particularly good indicator of vulnerability."

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[3] "Victim" may not to be an altogether appropriate term since it implies helplessness (Longhurst, 1992).

In an examination of farm transactions in Madarounfa arrondissement following the 1984 harvest, it was found that transactions roughly fell into three phases of drought response. Immediately after the harvest (September-December), farmers prepared for hard times by selling livestock, especially cattle and reinvested in cereal. During the second phase (January-March), non-agricultural work and temporary migration reached their peak. By April, stocks were running low so for the third phase (April-August), farmers turned again to selling small stock and received food aid. Sales of assets other than livestock appeared less important. However, larger loans were sometimes secured by pledging land which entitles the lender to use the fields until the loan is repaid and can lead to permanent transfer of usufruct rights that equate with ownership. Interhousehold loans, principally in cereals, were important but not farm equipment sales. During the final months before the new harvest, food aid assistance played a significant role. The authors point to the importance of livestock liquidation in being able to offset cereal costs, particularly in a production deficit year. For the farms studied, assets were sufficient to subsist until the next harvest without food aid but the cost in future productivity would have been high. Food aid obviated the need for farmers to liquidate their assets to a level from which it would have been extremely difficult to recover (Swinton, 1988).

Because asset value is socio-cultural specific, it is necessary to understand the value attached to assets by different groups and households. Sheep and goats, for example, may be considered a liquid asset but they are likely to have different value for farmers and pastoralists. Households which rely on crop production for food are more likely to keep smallstock as an insurance/saving asset and liquidate them easily. In contrast, pastoralists are unwilling to sell or slaughter animals as are crop farmers in very marginal areas who rely as much on small stock as cropping. Other limitations to using assets as proxy indicators for income need to be considered: assets often do not indicate short-term fluctuations in income and ownership may be difficult to define (e.g., land and equipment may be purchased in the name of another). In the above example from Madarounfa, Hausa farmers sold cattle early to reinvest in grain, unlike the Fulani who placed a high premium on keeping cattle and sold cattle only in exchange for cereals.

Besides one's asset base, other factors also influence a household's ability to cope during food shortages. Research from the Sudan, for example, shows the significance of educational levels. It was found in the aftermath of the 1985 famine, that children whose parents, particularly mothers, had attended school were significantly better off nutritionally than other children. For the population under food security stress, the mother's education was twice as effective in maintaining a child's nutrition level as the father's (von Braun, 1991).

There is a need to understand what households are trying to do and why. Otherwise, it is difficult to identify true signals of distress. What are the patterns of acceptable and non-acceptable work that may indicate stress? Are certain activities considered shameful or low-caste and only resorted to in dire need? A common strategy in deficit years is to take up low paying income-earning activities such as farm labor, rope and mat making, carrying water, or collecting firewood. A consequence is the crowding out of the poorest who depend on these sources of income.

D. Sequences of Coping Strategies[4]

Corbett (1988) uses empirical evidence from various African case studies to depict the sequencing of asset management coping strategies:

> **Early Stage/Stage One: Insurance mechanism, "asset conserving".** Responses undertaken in the first stage are self or interhousehold insurance coping strategies. Many have been developed to cope with predictable and nonsevere risks. Being able to draw upon these responses depends upon building-up during noncrisis years, e.g. acquire surplus livestock, buildup grain stocks, invest in valuable disposable goods such as jewelry and household goods, develop systems of reciprocal obligations, safeguard reserves of wild foods. These responses usually involve the use of available family resources and do not entail the permanent loss of productive assets. Examples of insurance mechanisms include changes in cropping and planting practices (dry season gardening), dispersed grazing, selected sale of small stock and possessions such as jewelry, reduced consumption and ceremonies, collection of wild foods, use of inter-household transfers and loans, increased petty commodity production and migration for employment.
>
> **Mid Stage/Stage Two: Disposal of productive assets, "asset stripping".** Asset stripping jeopardizes the future economic welfare of a household. Recourse is taken in the wider system of interaction where market and social relations are more important. In these responses, people begin to liquidate assets to ease shortages. Examples include sale of livestock, agricultural tools, sale or mortgage of land, credit from merchants or money lenders and reduced consumption.
>
> **Late Stage/Stage Three: Destitution.** Responses in stage three are terminal leaving the individual virtually assetless. At this point, productive assets are sold and people are forced to migrate to towns or relief centers.

Mass migration has been characterized as the terminal indicator of destitution. de Waal's exposition of land tenure systems in the Darfur region of Sudan shows that decisions about whether and when to migrate are linked directly to tenure security. Households with secure land rights felt freer to migrate than those with only usufructuary rights since the latter might risk having their land appropriated while away.

The stage that is reached when the famine eases largely determines future recovery. Different interventions will be appropriate depending upon the stage of the food crisis. Productive assets which are lost in distress sales may be difficult to reacquire. For example, herders in the Sahel

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[4] 'Strategy' is used in the literature to indicate forward planning that involves a series of events and activities. 'Mechanism' is used to denote a discreet activity/event.

Order and Stages of Coping Strategies from African Case Studies (Corbett, 1988)

Watts, northern Nigeria, 1973/74: sequence of 10 most commonly observed responses

1. Collect famine foods
2. borrow grain from kin
3. sale of labor power (migration)
4. engage in dry season farming (migration)
5. sale of small stock
6. borrow grain or money from merchants/moneylenders
7. sale of domestic assets
8. pledge farmland
9. sale of farmland
10. migrate out permanently

Cutler, Sudan, 1984

1. "Adaptive" strategies
   - sale of livestock (e.g. goats)
   - labor migration
   - self-employment (petty commodity production and trading)
   - use of credit from merchants
2. Sale of key productive assets
   - sale of tools
   - sale of prime breeding animals
   - sale of sundry household belongings
   - sale of land
3. Mass migration

Rahmato, Ethiopia, 1984/85

1. Stage One
   - reduction in [illegible] safety and quality of foods consumed
   - collection of [illegible] foods
   - reduction of number of meals per day
   - interhousehold transfers of food and livestock
   - barter exchange with neighbors and relatives
   - credit arrangements with relatives
2. Stage Two
   - temporary migration by adult males (in search of wage employment)
3. Stage Three
   - sale of cattle and oxen
   - sale of personal effects, e.g., jewelry and hand weapons
   - sale of housing for firewood and building material
4. Stage Four
   - migration of entire household in search of relief

DeWaal, Darfur, Sudan, 1984

1. First stage of destitution
   - gathering of wild foods
   - selling animals which are surplus to requirements
   - borrowing money or food from relatives
   - other forms of interhousehold assistance
   - one or more family members working as a day laborer
   - sale of possessions
   - migration with herds to distant pastures
2. Second stage of destitution
   - sale of animals which are required for subsistence
   - borrowing food or money from merchants at high interest
   - sale of required possessions
   - working as a day laborer (in such a way that it interferes with tending of household's own fields)
   - migrating out to seek work or charity in towns

3. Third stage of destitution
   starvation
   dependence on charity

who lost herds, had to turn to other livelihood sources, and are finding it impossible to restock and return to pastoralism. As one moves from one stage to the next, the subsistence base is eroded and it becomes increasingly difficult to reverse the downward spiral. Once a household's productive assets are liquidated, pauperization results.

The poor, those with fewer resources to bring to bear, enter the sequence first and move through the stages more quickly. It is clear that food deficit situations amplify differences in economic status, particularly when reciprocal arrangements for redistribution do not exist or cease to function (Campbell, 1990). Drought has a differential impact on the poor. Changes in the concentration of livestock ownership in Niger and Nigeria after the 1972-73 drought is but one example (Mortimore, 1989). Asset losses, for example, loss of land through land pawning appears to be growing and is disproportionately borne by the poorest households (Sutter, 1982).

Coping strategies have been classified according to the 3 stage sequence above up to a 7 stage sequence. For most, the key is in terms of understanding the sequence, stages, and downward spiral to the collapse of food entitlements. Some argue that it is impossible to identify a sequence of coping strategies, as one person's coping strategy is another's livelihood. Also, because poor people diversify to survive, it is difficult to distinguish between overtime trends and short-term changes in response to a particular drought.

From all the case material, it is clear that one can characterize coping strategies and define them but particular options selected by any given household in any given year vary in relation to the famine condition, local market conditions, available resources and community structures. The same coping strategies and responses will not be observed during all famines nor will the significance of commonly observed responses be the same everywhere (Corbett, 1988). Strategies may vary from region to region, community to community and even within households according to gender, economic status, age, social status and length of residence (Downing, 1991).

But even if the same strategies are not observed everywhere, there is considerable evidence that a common pattern can be discerned. "Evidence of such patterns might assist in the interpretation of the economic behavior that underlies household coping strategies, in the early detection of an impending famine, in the identification of which households are most vulnerable and in the design and management of relief programs." By examining coping strategies and knowing that they always follow a sequence, it may be possible to identify those strategies which are used earlier in the sequence and that indicate that a crisis is occurring. The need is for systematic analysis of variations within and between groups since coping varies by economic status, gender and age among other things.

Interviews with 60 Twareg herders of the Eduk-Kao, Tahoua region found the following responses to the 1984 drought: canceled migration to cure salee; stayed in familiar region; destocked; sold drought sensitive species (cattle and sheep) to buy goats and camels; took up

cultivation in seasonal ponds; purchased feed supplements. The more successful herders reduced their herd size early, stayed in familiar territory rather than migrating, kept mainly goats and camels and rather than purchasing other animals they stocked cereals and feed supplements. Marabouts and forgerons who keep smaller herds and have alternative incomes tended to do better. Various recommendations are suggested to mitigate disaster which are tailored to local and regional needs: support of traditional migration strategies; stocking feed supplements in good years at local and regional levels; early harvesting of failed crops to feed as livestock supplements later in the drought; promoting timely herder destockage; initiating herder's saving schemes to preserve capital gained through animal sales; undertaking specific animal health programs; creating opportunities for earning alternative incomes (Cord et al., 1986).

E. Use of Coping Strategies in Mitigation Activities

Current thinking indicates that disaster mitigation activities need to be based on local coping strategies; at the least, such interventions should not conflict with indigenous responses.

> Much ineffective aid has been provided during a famine precisely because outsiders (governments and international aid agencies) have not understood how people mitigate famines and have had different views on priorities. The main difference is that outsiders have treated famines as disaster 'events' regarding starvation as the main problem and food as the major need...victims view famines as pervasive, slowly-encroaching disasters within which food scarcity is one factor. These differences of perception are crucially important in deciding on appropriate mitigation strategies (Frankenberger, nd).

While coping strategies offer a defense against hunger in many communities, many have been disturbed by the process of development. The question may be asked: Does food aid erode/disrupt indigenous coping strategies in a positive or negative fashion? Campbell (1990) cautions that the loss of indigenous effective and low-cost means of reducing food deficits implies increased reliance on often less reliable and more expensive support structures such as government relief programs. Cutler (1984) has shown that during the 1970s famine victims did not expect government assistance so they moved in search of land, not charity or employment. However, in the 1980s, distress migration was to relief distribution sites. It is clear that over the years, government relief programs have set up expectations and impacted traditional coping mechanisms.

VI HOUSEHOLD AND GENDER FOCUS

While the household is the elected unit of analysis, households often are not stable units (men may be absent during 6 months; pastoral households split-up to maximize grazing and labor resources); and they are difficult to define in the African context. The recognition that famine impact does not fall equally on all household members has led to looking at within household

differences. Most agree that children under five years of age face the greatest risk, as well as women and the elderly. While necessary to appreciate interhousehold differences, the difficulty of data collection and processing is an issue in household level studies.

Because women are involved in different economic and domestic tasks and information networks than men, their participation during food stress periods is likely to be different. A gap in the literature exists related to differential access to food and the different actions taken by men and women (Davies et al., 1991). We may assume that women make more of the consumption decisions and day-to-day choices about storage and preparation. In Cameroon, women have been found to be far more active than men in overcoming food stress of the hungry season (Campbell and Trechter, 1982 in Davies et al, 1991). We might assume the same for Niger, certainly so in regions where there is heavy male outmigration.

It is also likely that there are different gender responses by stage in the coping sequence. For example, as grain becomes scarce women turn to the grindstone which grinds husks with grain and so produces maximum bulk; then they move the grindstone indoors with all other food preparation so only family members are aware of meals (Colson, 1979 in Campbell). In Ethiopia, it has been found that men take responsibility for certain responses such as labor migration and sale of livestock and women take responsibility for gathering wild foods and allocating reduced food supplies among family members (Rahmato, Wollo Province, Ethiopia, 1984/85). Women migrating in search of work appears to be a later stage coping mechanism, at least among certain groups in Niger, and an indication of increased food stress. Schroeder (1987) suggests, based on work in northern Nigeria, that highly stratified gender systems contribute to an inability to prepare for and respond to drought.

For northern Cameroon, Campbell and Trechter list coping mechanisms by stage as differentiated by gender (in Devries, 1987):

First stage -- soudure
- sale or slaughter of animals (men and women)
- help from kin: loans of money and food (women)
- reduction in portions or not eating for an entire day (women)
- buying food (men)
- wage labor (men)

Second stage -- more severe (both men and women unless noted)
- family assistance
- wild foods
- food purchases
- selling stock
- migration
- special plantings (women)
- using food reserves (women)
- selling food

- selling livestock and borrowing money continues

VII ADEQUATE CONSUMPTION?

What we think of as an "adequate" level of food intake may not be the same as the victim's definition. Rationing of food consumption is commonly observed and undertaken well before a household has exhausted other means open to them to obtain food. A limited morning meal and no midday meal is common during the soudure for many people. Bella women north of Niamey have reported that they prepare one meal per 24 hours, consisting of millet pate with, perhaps, gumbo sauce, as standard fare from the end of the cold season until harvest (some 7 months). Reduced consumption is one of the first responses that people choose suggesting that becoming undernourished is part of the standard coping strategy.

> Rising levels of malnutrition should be interpreted not just as signalling the failure of the strategies adopted, but as one of their costs. It is likely that this kind of reduction of current food consumption is undertaken in order to avoid having to dispose of key productive assets or take other actions which would impair the household's long term income generating capacity. Famines should be seen as an economic crisis for the households concerned, rather than simply assessed in terms of their medical or nutritional outcomes (Corbett, 1988:110).

As de Waal found in the Sudan, obtaining "adequate" food is only one of many objectives that households have to face and among which trade-offs have to be made. During the height of the Darfur famine, people went hungry when there was grain in the market and cash in their hands. Thus, *access to food* is not the only determinant of hunger and mortality. People did not choose to starve or to die but the importance of preserving economic viability exposed them to a greater risk of dying. Farmers tried to guard enough resources to be able to cultivate when the rains came and herders struggled to keep their animals alive.

> Since a food crisis is also an economic crisis to poor people, it is obvious why "choosing hunger" is a rational response. Going hungry is, up to a point, the most easily reversible coping strategy of all -- hunger goes away as soon as you have your next meal -- whereas once you sell your cattle or your plough, you don't easily get them back (Devereax, 1990:283).

VIII TRADITIONAL ASSISTANCE

Often, systems of inter-household loans and gifts are part of a community wide or kinship insurance mechanism that has evolved to deal with regular and non-severe food shortages. Not all members of a society have equal access to resources but in many situations the wealthy have had obligations to support the poor in times of difficulty. Various forms of social networks help to redistribute wealth within a community including cultural norms of sharing food.

Redistribution may take place according to kin or client systems, on the basis of Islamic injunctions to help the needy, or as alms given to Koranic scholars of all ages. Results from the IFPRI household survey in Niger indicate that households are as willing to transfer their crops (to cement social relationships) as to sell them which is attributed to the stigma attached to selling as opposed to transferring grain within a village (Hopkins and Reardon, 1992). Such help, however, may not be equally distributed. Among the Twareg, for example, *tamesadeq* is a gift from rich to poor which is motivated by Islamic piety. However, it is "Given to impoverished ineslemen, sometimes to poor former vassels, but is given to iklan (Bella) only under extreme circumstances. "

A Wolof proverb from Senegal may be applicable throughout West Africa, "A man without debts is a man without friends." Debts represent personal ties, and personal ties represent security during crisis. Such claims (a form of assets), however, only function when the debtor has sufficient means to assist when called upon.

It is commonly observed that inter-household transfers and loans increase in the early stages of response to food shortages but they dry up as the crisis deepens and becomes prolonged. When many members are all subject to the same risks at the same time, effective risk spreading becomes impossible. From interviews in Tanout arrondissement, villagers described the system of loans and inter-households gifts as having a levelling effect so that all members of the community fall to the same level of need by harvest time (field data, December 1991).

Research from India indicates that with the decline of patron-client relationships, access to food during individual or community crisis declines. People no longer exist in a socioeconomic structure that provides food security. There is evidence that this may be occurring in Africa given the disintegration of traditional, kin-based control over resources and a lack of effective government interventions targeted to the poor. The IFPRI data suggests that inter-household gifts are relatively insignificant which may imply a break down in the traditional safety net whereby the poor received help from others.

Likewise, access to donations and remittances depends upon a network of relatives and institutions that correlate to household status. The wealthier more often have access to borrowed food, have greater access to credit and other social support networks. Destitute households, those in need the most, usually do not have family/client networks to call upon. They are major beneficiaries only in severe drought. An example of this comes from the Twareg, where among upper-status herders, there is considerable circulation of animals between friends and relatives through gifts and loans of varying duration and conditions which does not apply to the lower-status Twareg. The latter lack access to such credit networks and have more limited ability to reduce risk through intra-household relations since they lack access to redistributive networks (Starr, 1987). During the 1973-74 drought in Niger, larger producers did experience hardship but their superior command over resources including possession of surplus animals, ability to recall animals loaned out on contract and access to social insurance networks gave them a distinct advantage.

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