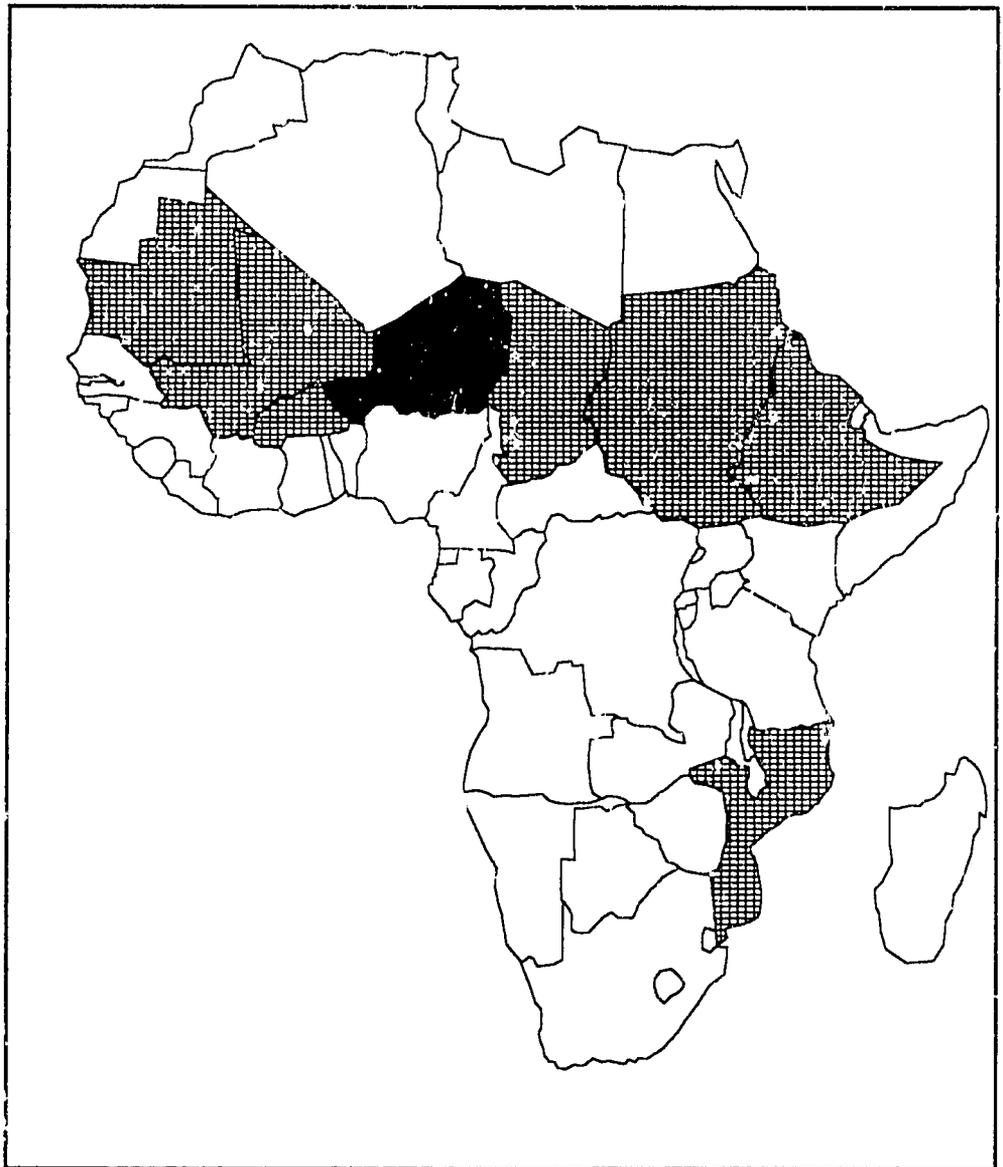


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FEWS Country Report

NIGER



Africa Bureau
U.S. Agency
for International
Development

Famine Early Warning System Country Report

NIGER

Poor Harvest Prospects

Prepared for the
Africa Bureau of the
U.S. Agency for
International Development

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SUMMARY

Given the late and extremely light rains through August 20, only a fair-to-poor harvest is likely for Niger. In northern Niamey Department, and in Diffa Department, crop conditions appear to be as bad, or worse, than in 1984. Elsewhere, except in southern Niamey and Dosso Departments, production will almost surely be reduced from that of recent years. Only a one-in-four chance is given that current crops will receive the moisture that they need, for as long as they need it, to yield produce a normal harvest. Food assistance requirements are likely to be far above what they were in 1985 and 1986 (over 700,000 people were determined to be "at-risk" in 1986). Nevertheless, private and governmental stocks may still cover much of the immediate food shortfall for those who will require free distributions, or for those who can purchase the grain. Curiously, initial grain price levels do not yet show the steep upward trends which have been seen prior to other recent poor harvests.

Conclusions about crop conditions - While it is still too early to make firm estimates of the outcome of the 1987 harvest (rains usually stop in September or October), it is clear that:

- the outcome in Diffa Department is likely to be very poor, thereby continuing a series of very poor years. Food assistance will be required in 1987-88 as it has in most of the recent past.
- Rainfed production in Tillabery, Ouallam and Filingue is likely to be far short of local food requirements. Currently, the situation in Filingue may be about as severe as in Ouallam, particularly if Filingue's Dallol Bosso area continues with such poor rainfall. Off-season gardening in the Dallol would then assume much greater importance than in the past two years.
- Many agricultural areas located between these two areas appear to have only fair to mediocre crop prospects. Pastoral areas which rely on grain purchased from the grain-growing areas will find high prices, if not shortages. Off-season gardening activities will take on greater importance for many areas in Niger.
- The good harvests of 1985 and 1986 will provide as much "margin" in meeting food needs from local sources as has ever been the case in the recent past. Much of this surplus may not be in on-farm stocks, but may only be available from the local grain stabilization board, OPVN (Office des Produits Vivriers du Niger), where approximately 70,000 MT of grains and other foodstuffs is available, and from local traders.
- The agricultural harvest in northern Nigeria has also suffered from poor rains. There could be competition from this area for grain available from traders.

CROP CONDITION INDICATORS

Rainfall Reports: Rainfall reporting for the first two decades of August was not yet complete at the time of this report. Other reports and satellite imagery indicate that rain was better in the first ten days than the second ten of August, although amounts continued to be light. The little rainfall received during these periods is not likely to noticeably improve the low cumulative totals that have been seen to date.

As of July 31, 1987, cumulative rainfall totals showed a worrisome situation in most parts of Niger. Only small and scattered areas (see Map 2) had received more than 75% of the average rainfall up to this point.¹ Except along the Niger River south of Niamey, and in a small zone around Maradi, all the major grain-producing areas had received less rainfall than at a similar point in 1984 (see Map 3).

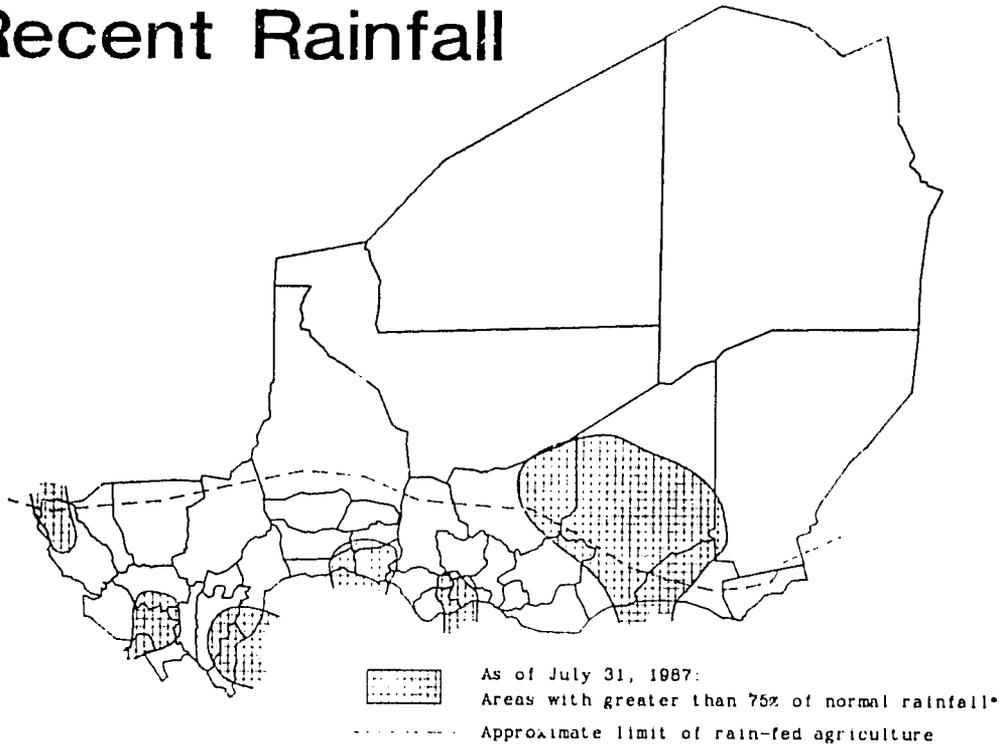
There was also considerable delay in the arrival of the rains in many agricultural arrondissements, so that planting was late in a large number of cases: 2,065 of approximately 9,000 villages in the agricultural zone had not completed a first planting by July 20th (millet not planted by that date is generally considered to lack much chance of completing a normal growing cycle). The Ministry of Agriculture estimated that only 25% of all areas planted were experiencing "normal" conditions.

Rainfall Projections: The Nigerien *Direction Nationale de la Meteorologie* (DNM) has completed an analysis that compares the average rainfall needs of a crop from August through to the harvest, with the amount of rain likely to fall during that same period.² The DNM then computes the likelihood of the needed amount of rain actually falling during that period. The general pattern that emerges for Niger (for all but the southwestern most arrondissements, like Say and Gaya) is less than one-in-four chance that the moisture needs of crops will be satisfied during the remainder of the growing season. While this statistical pattern is, of course, only that, the implications are important for those areas where planting was late, or where crops are currently suffering from lack of moisture: chances are against a rebound in crop conditions.

¹ Source: Direction Nationale de la Meteorologie (DNM). Note that the average cumulative rainfall amount in this and other citations here are based on NMS rainfall records from 1968 to 1986, rather than a more common 30 year average. As rainfall in the last thirty years has steadily declined, the figures given here will tend to appear slightly less serious than they would if viewed in the context of the 30 year average, because they are being compared with the less rainy recent years.

² The average rainfall needs were computed for a ten-year period, and the average rainfall received was computed from rainfall data from 1968 to 1986.

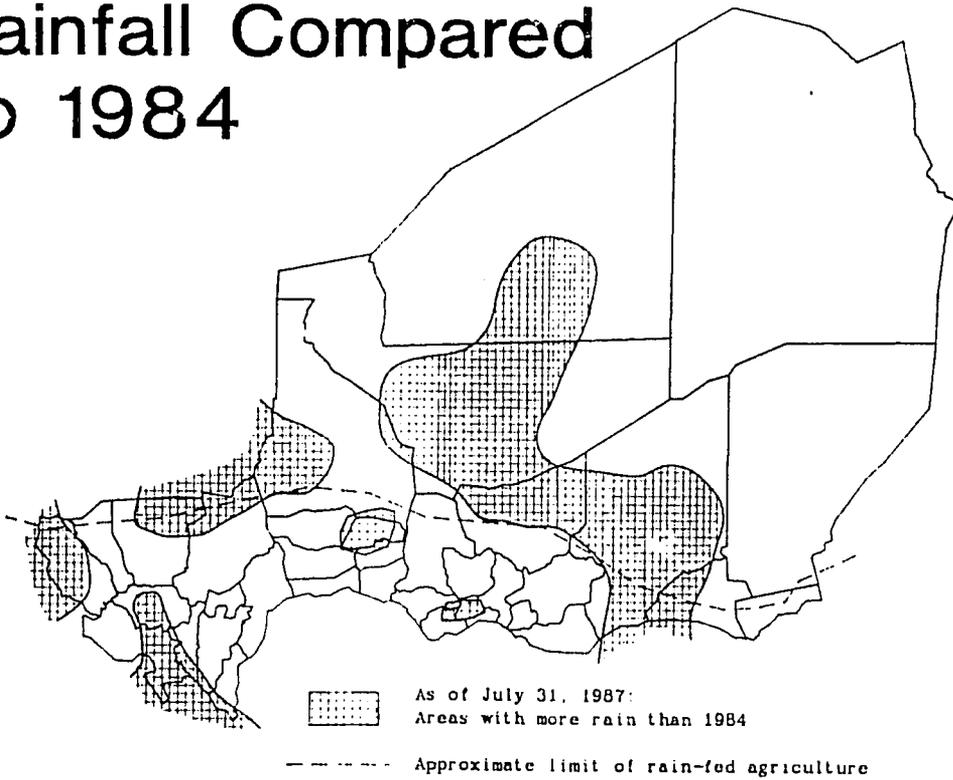
Recent Rainfall



* "Normal" based upon period between 1963-86

Source: Direction de la Meteorologie Nationale
FEWS/PWA, September 1987

Rainfall Compared To 1984



Source: Direction de la Meteorologie Nationale
FEWS/PWA, September 1987

Satellite Imagery of Vegetation: Satellite imagery³ reinforces the impression of generally poor crop conditions suggested by the cumulative rainfall totals. The chief areas of concern include most of Tillabery, Ouallam and Filingue Arrondissements (Niamey Department), all of Diffa Department, most of Zinder Department, and the northern half of Maradi Department. Crop stress can also be found in much of Tahoua Department and in Dogondoutchi Arrondissement (Dosso Department).

Recent Vegetative Trends - Positive changes in vegetative vigor between the first and second decades of August (see Image 1) were noted in widely scattered areas, particularly around the Tahoua-Keita border, in Madaoua, Aguié, Magaria, and Gouré (north of the national highway) Arrondissements. Significant decreases in vigor were seen in the Air Mountains and just to the southwest of them, in the southeast corner of Madaoua, and in parts of Gaya Arrondissement. Positive changes noted during the first decade of August (see Image 2) reflected the rainfall that fell in the eastern half of Tahoua Department slightly earlier; vigor was significantly higher in Birni N'Konni, Madaoua, Bouza and Keita Arrondissements. The southern half of Niamey, and most of Dosso Departments also showed increasing vigor.

Inter-Annual Trends - Image 3 shows that 1987 vegetative vigor is lower than that of 1986 in almost all areas, with minor exceptions in parts of southern Niamey and much of Dosso Departments. Image 4 compares the second decade of August 1987 with a similar period in 1984, a very poor year in general. Conditions are worse than in 1984 in most of the agricultural portions of Diffa Department, the southern half of Zinder Department, and much of northern Nigeria, from Katsina to the Komadugu River. Though not as striking on these maps as in Diffa, the situation in Tillabery, Ouallam, Filingue (particularly in the southern end of the Dallol Bosso) and some of Dogondoutchi and Tahoua Arrondissements, where no change from 1984 is shown, may also be a critical one, as 1984 rained production was very poor in these areas. The condition of pastoral zones, while not as good as in 1986, is better than in 1984.

Crop Pests: Grasshopper problems continue to be much less severe than originally projected, largely because of unfavorable rains in most of Niger. Scattered hatching sites of Senegalese grasshoppers have been periodically found all across the southern fourth of the country, with locally heavy concentrations in Maradi, Zinder, and more recently in the western parts of the country. Ground treatment has apparently been sufficient and effective so far. There is still some degree of risk that more grasshoppers might come up from Nigeria, but this risk becomes much less acute with every day

³ The Normalized Difference Vegetation Index (NDVI) is derived from NOAA AVHRR GAC data. The photosynthetic capacity, or vegetative vigor displayed by these images is generally believed to be indicative of the condition of vegetation on the ground, and, at least inferentially, of the growing conditions for crops and pastures. These relationships are, however, only indirect and still the subject of continuing research.

Image 1: Recent Trends (1st to 2nd Decade, August 1987)

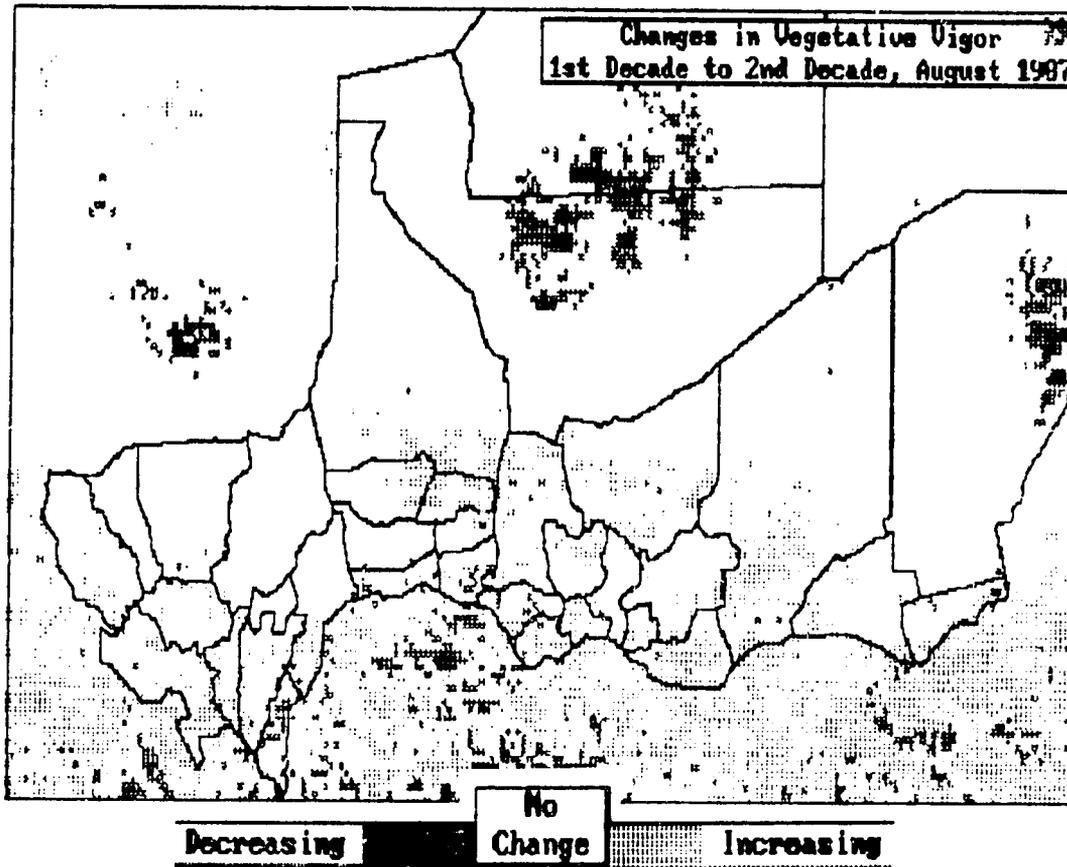


Image 2: Recent Trends (3rd Decade July to 1st Decade August 1987)

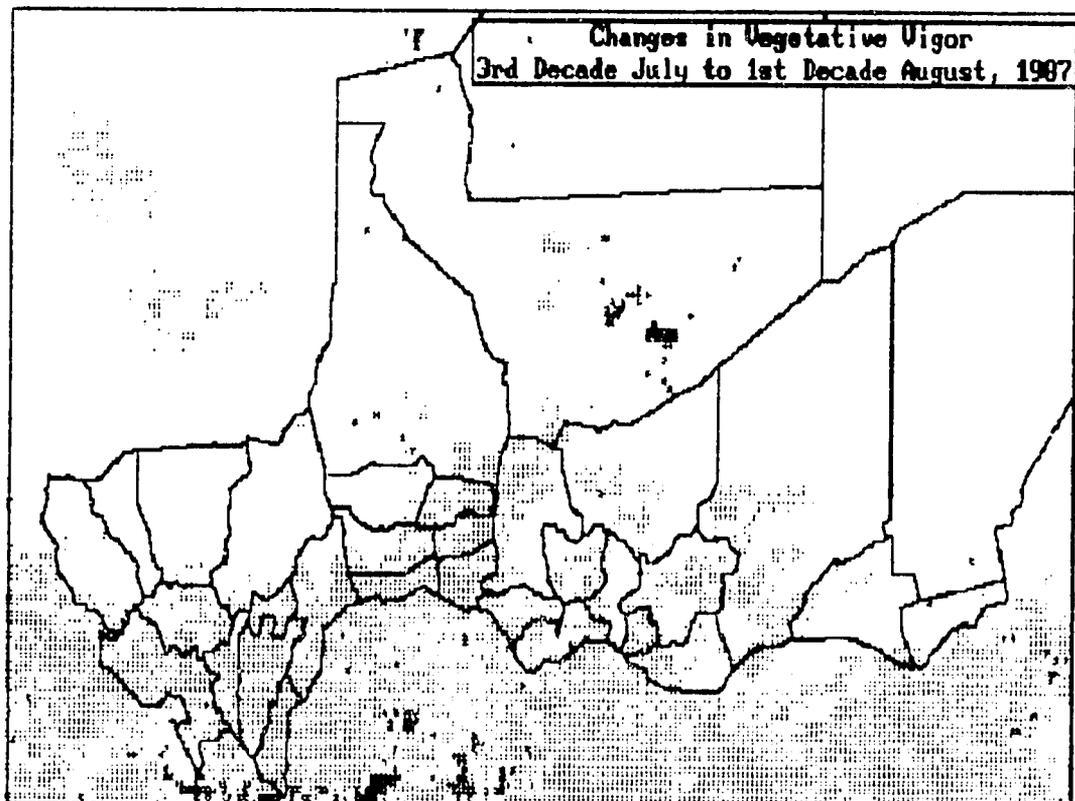


Image 3: Inter-Annual Trends (1987 Compared to 1986)

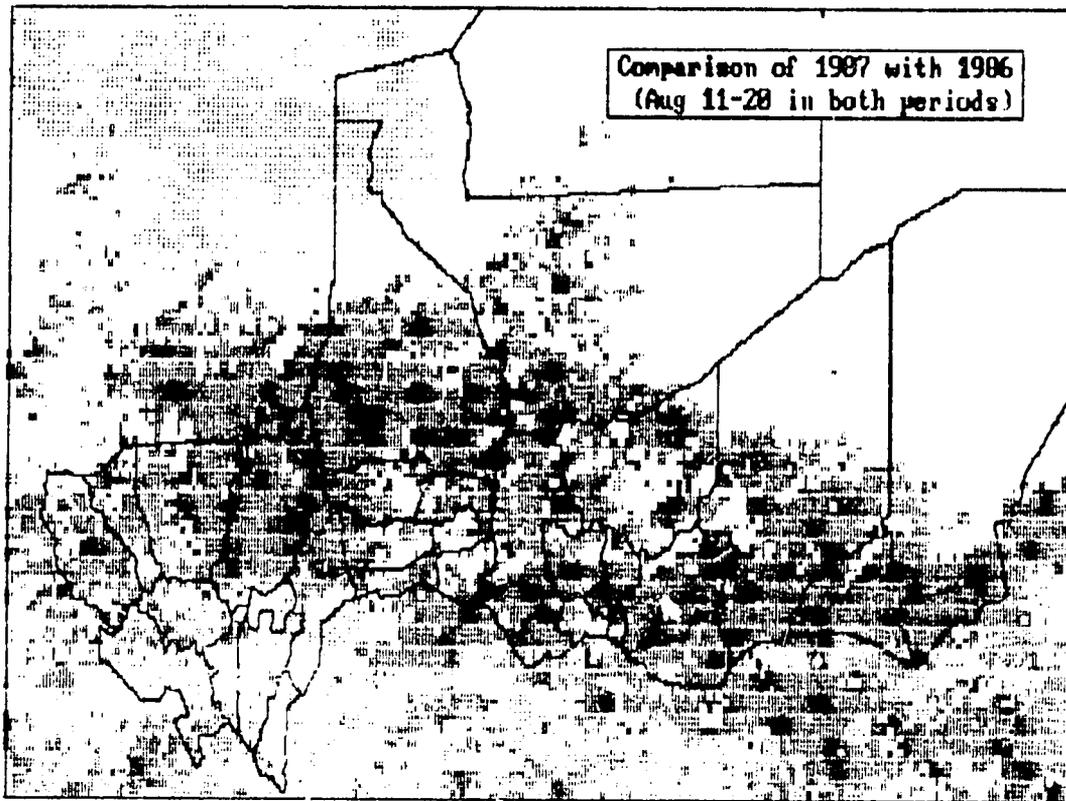
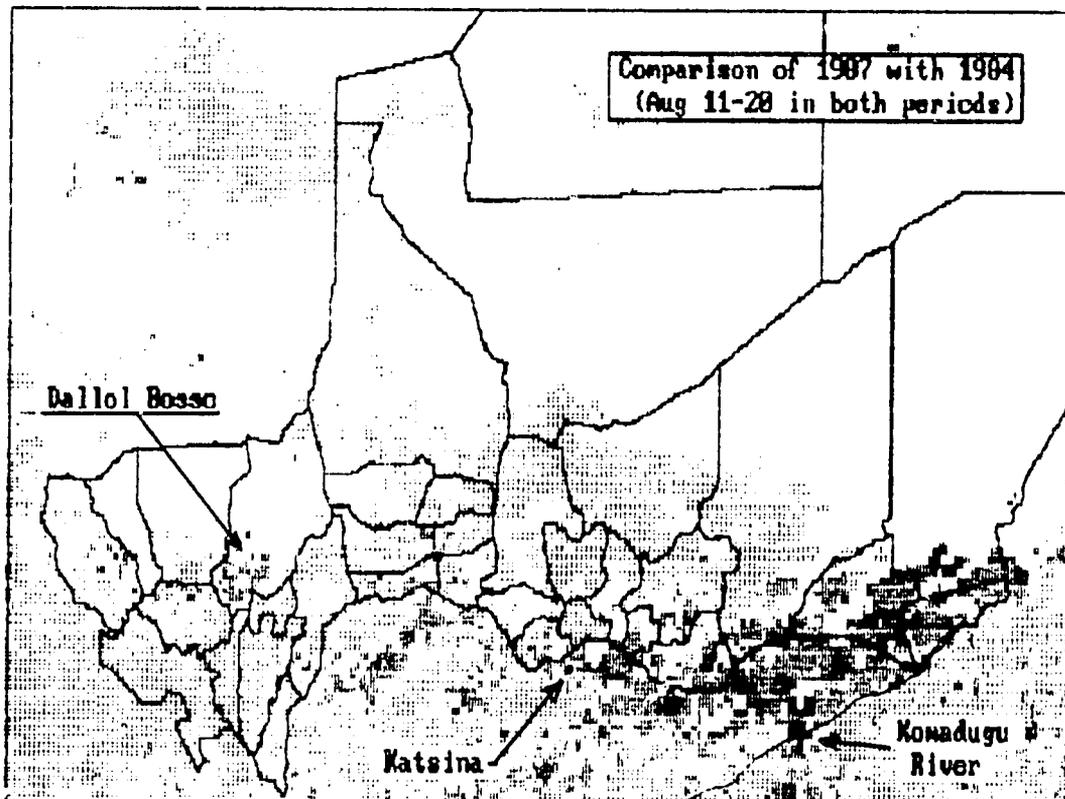


Image 4: Inter-Annual Trends: (1987 Compared to 1984)



that passes. Typical Senegalese grasshopper movement in September is to the South, following retreating rains of the end of the rainy season.

There continue to be minor areas in the north, particularly around the Air Mountains, where small bands and swarms of local Desert locusts have been sighted. In this case too, particularly given the relatively poor rain conditions in most of Niger, the threat of major locust problems is diminishing daily. Migrating swarms coming from the east (Chad, Sudan, Ethiopia) have not yet appeared, and recent reports from those countries, up to mid-August, are more optimistic about the lack of significant outbreaks. As the rainy season comes to an end, the typical pattern of movement for Desert locusts in Niger is to the Northwest and North.

Population & Production in Selected Areas - Though the final outcome of this year's harvest is still uncertain, how many people may be involved in the areas indicated above as most severely affected, and what does recent production tell one about the dimensions of this year's possible food shortages? Figure 1 presents several views of recent agricultural production, and of the rural populations living there. A comparison of gross agricultural production of millet and sorghum between 1986, a relatively good year, and 1984 a very poor one, shows that in most of these arrondissements, 1984 production was approximately 60% or less of 1986 production.

Figure 1: Population and Production in Severely Affected Areas

Arrondissement	Net Millet & Sorghum Production (MT)			Net Per Capita				
	1984	1986	84/86	Production		1986-87 Population At-Risk	1986-87 Food Aid (MT)	7/87 Projected Population
				84	86			
TILLABERI	19,764	37,833	0.52	114	204	52,655	2,797	191,209
OJALLAM	4,930	28,948	0.17	26	141	35,812	8,074	225,722
FILINGUE	31,255	51,951	0.60	119	186	95,622	5,041	291,778
DOGONDOUTCHI	52,680	86,019	0.61	144	224	0	0	342,655
TAHOJA	13,859	39,986	0.35	89	246	18,113	2,656	196,167
MIRRIA	76,096	97,947	0.78	205	250	0	0	366,587
MAGARIA	98,095	96,384	1.02	217	202	7,531	0	339,310
GOURE	13,052	23,199	0.56	95	160	2,767	0	136,918
DIFFA	293	5,188	0.06	5	90	31,353	1,270	60,760
N'GUIGMI	0	238	0.00	0	6	33,527	2,202	34,590
MAINE SOROA	391	4,600	0.08	4	50	51,466	2,001	91,479
TOTALS	310,405	472,291				328,846	24,040	2,277,173

Source: Ministry of Agriculture, FEWS/Niger. At-Risk population figures determined by GON; defined as number of people in villages where production deficit was greater than 70%, or those people without other food resources. Food aid is the amount of assistance that was programmed for 1986-87. 7/87 population is a projection from FEWS/Niger surveys, and is rural population only.

Per capita millet and sorghum production in 1984 was also well below the levels generally considered to be required in Niger⁴. The major exception to this pattern was in Magaria, where 1984 production was actually greater than in 1986. A large decrease in production thus appears very possible in most of the other areas, if 1987 turns out similar to 1984.

The number of people who were determined to be "at-risk" by the Government of Niger in what was considered to be a "good" year, 1986 (see Figure 1 where 328,846 people were so identified in these currently severely affected areas), helps to establish an initial estimate of the minimum number of people potentially requiring food assistance in these areas in 1987-88. The maximum number of people who might require assistance in these most-affected areas would be something less than their current total estimated population (2,277,173). In 1986, the arrondissements included in Figure 1 contained only about half of all those people counted "at-risk" (living in villages where agricultural production met less than 30% of annual needs, or those without other sources of food). In any case, the number of people likely to be categorized "at-risk" under the GON definition in 1987-88 is likely to be at least double the roughly 700,000 found in 1986.

OTHER INDICATORS

Grain price data covering a great number of arrondissements, released by the Gendarmerie Nationale on July 28, 1987, indicates that grain prices are rising, slowly and steadily, like they might in a largely normal year. The prices do not seem to reflect the sharply upward-moving patterns seen prior to other poor harvests in the last ten years in Niger. The correct interpretation of this data is, of course, difficult given the limited database with which to compare, and uncertainty about the quality of this data. Nevertheless, the largely "normal" trend is curious, if the general assessment of the poor current state of the 1987 harvest is correct. There is, however, a good chance that this data simply reflects relatively abundant local stocks of grain due to the record harvests of 1985 and 1986. If other price data confirm the slowly rising prices currently seen, and if the harvest continues to look as poor as it does now, one would be left to assume that: the price data is not accurate, market forces are not freely at play, or demand for purchased grain is not growing because stocks are perceived to be adequate in the near future. Assuming that both of the first two assumptions were also true, to some degree, for price trends seen in the past, one would then have to assume that the third assumption (sufficient stocks) would be likely.

⁴ No per capita cereal requirement level has the agreement of all parties, and estimates of this yearly need tend to vary between 175 and 250 kilograms per year.

ACKNOWLEDGEMENTS

This is the fourteenth/fifteenth in a series of monthly reports on Niger issued by the Famine Early Warning System (FEWS). It is designed to provide decisionmakers with current information and analysis on existing and potential nutrition emergency situations. Each situation identified is described in terms of geographical extent and the number of people involved, or at-risk, and the proximate causes insofar as they have been discerned.

Use of the term "at-risk" to identify vulnerable populations is problematic since no generally agreed upon definition exists. Yet, it is necessary to identify or "target" populations in-need or "at-risk" in order to determine appropriate forms and levels of intervention. Thus for the present, until a better usage can be found, FEWS reports will employ the term "at-risk" to mean...

...those persons lacking sufficient food, or resources to acquire sufficient food, to avert a nutritional crisis (i.e., a progressive deterioration in their health or nutritional condition below the status quo), and who, as a result, require specific intervention to avoid a life-threatening situation.

Perhaps of most importance to decisionmakers, the FEWS effort highlights the process underlying the deteriorating situation, hopefully with enough specificity and forewarning to permit alternative intervention strategies to be examined and implemented. Food assistance strategies are key to famine avoidance. However, other types of intervention can be of major importance both in the short-term and in the long run, including medical, transport, storage, economic development policy change, etc.

Where possible, estimates of food needs are included in the FEWS reports. It is important to understand, however, that no direct relation exists between numbers of persons at-risk and the quantity of food assistance needed. This is because famines are the culmination of slow-onset disaster processes which can be complex in the extreme.

The food needs of individual populations at-risk depend upon when in the disaster process identification is made and the extent of the cumulative impact on the individuals concerned. Further, the amount of food assistance required, whether from internal or external sources, depends upon a host of considerations. Thus the estimates of food needs presented periodically in FEWS reports should not be interpreted to mean food aid needs, e.g., as under PL480 or other donor programs.

FEWS depends on a variety of US Government agencies, private voluntary organizations (PVO's), international relief agencies, foreign press and host government reports as sources of information used in the country reports. In particular, a debt of gratitude is owed to many individuals within various offices of the US Agency for International Development (USAID) who routinely provide valuable information: the offices of Food For Peace and Voluntary Assistance (FFP/FVA), and the Office of Foreign Disaster Assistance (OFDA). Additional useful information is also provided by the National Oceanic and Atmospheric Administration's National Environmental Satellite, Data, and Information Service (NOAA/NESDIS), the Cooperative Institute for Applied Meteorology at the University of Missouri (CIAM), the National Aeronautic and Space Administration (NASA), AGRHYMET/Niamey, the UN Food and Agriculture Organization (FAO) Global Information and Early Warning System (GIEWS), the World Food Programme, and other U.N. agencies.

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