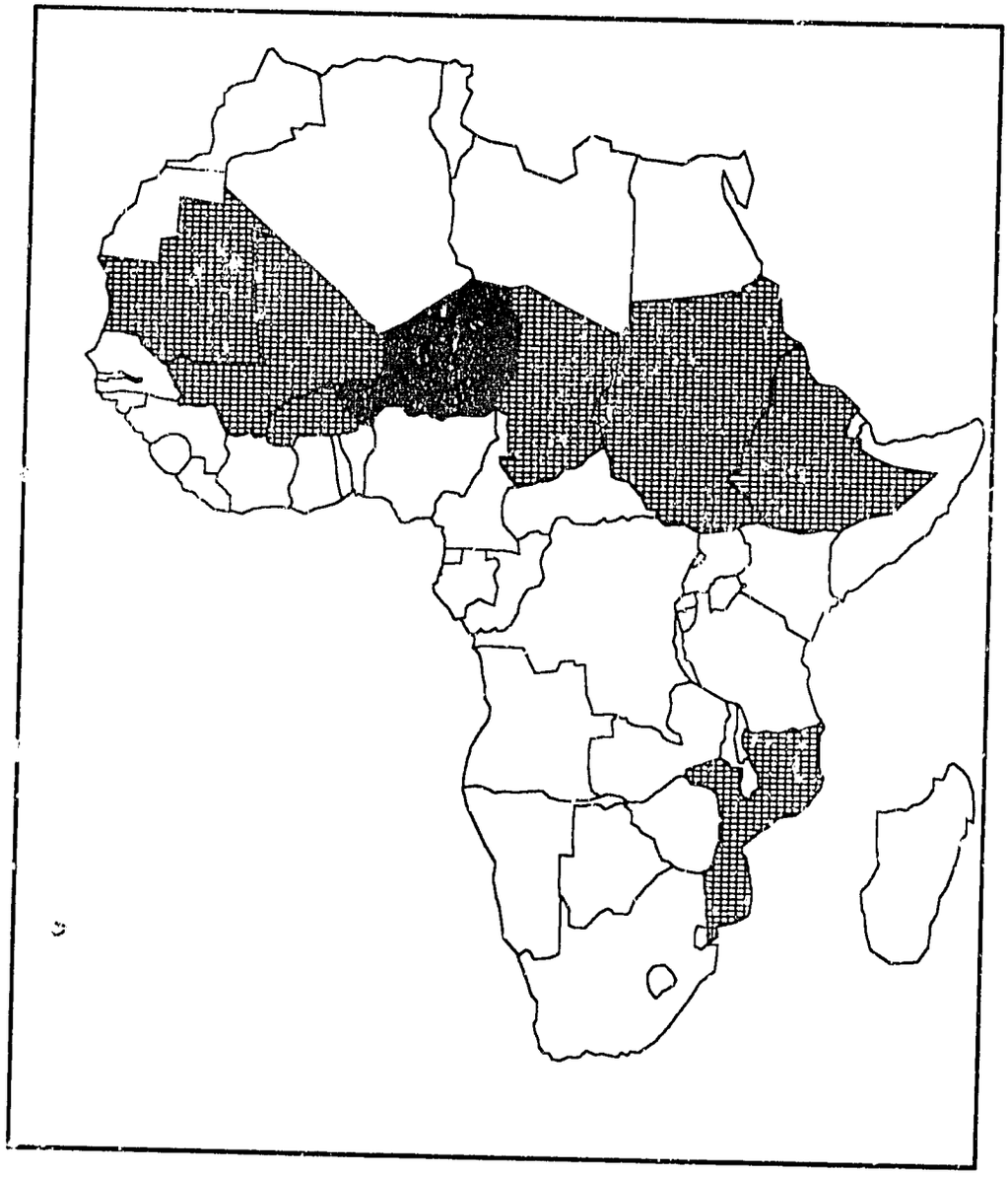
Report Number 12
June 1987

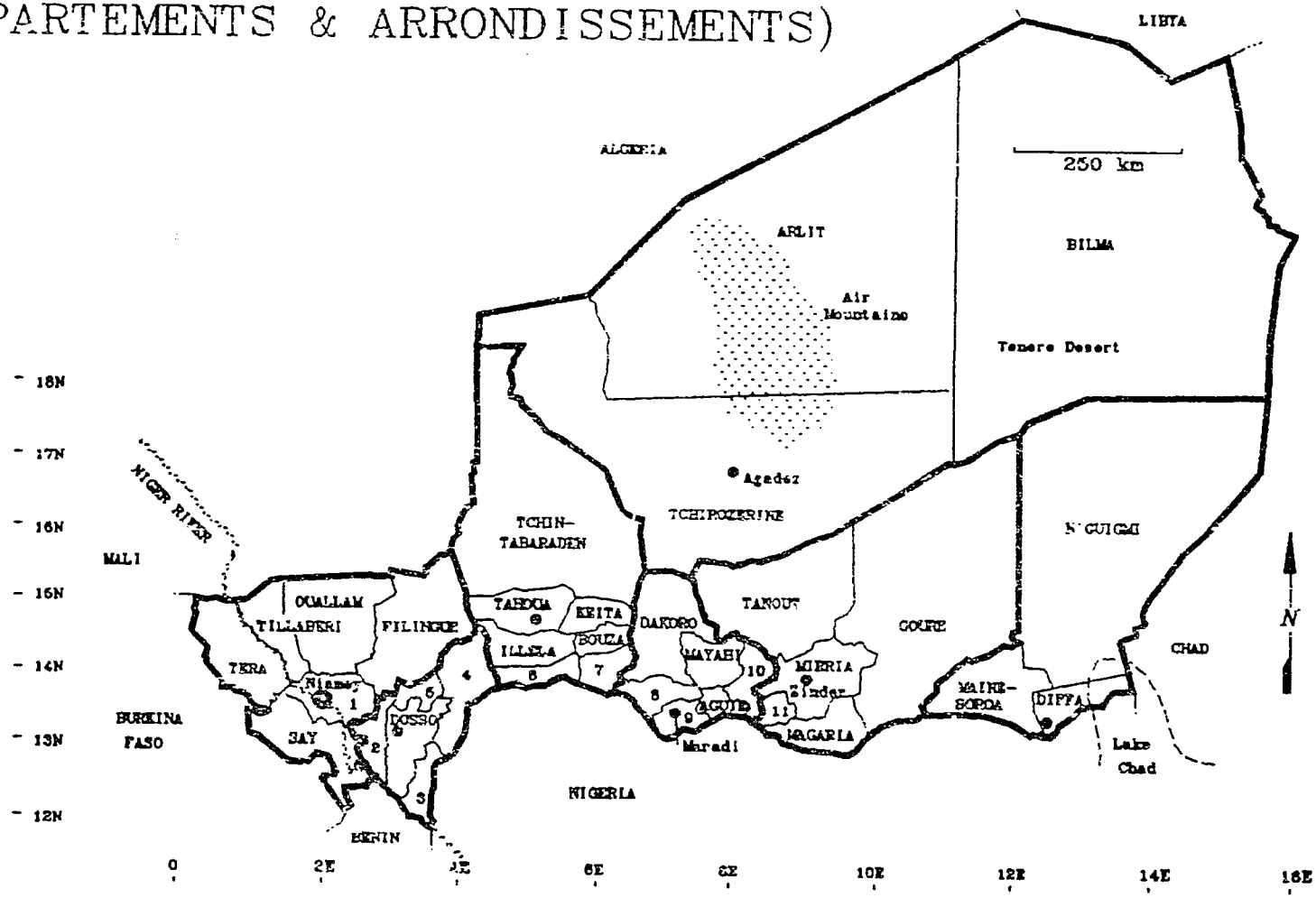
FEWS Country Report

NIGER



Africa Bureau
U.S. Agency
for International
Development

NIGER: ADMINISTRATIVE UNITS
(DEPARTEMENTS & ARRONDISSEMENTS)



FEWS/PWA

DEPARTEMENTS	
NIAMEY	ZINDER
DOSSO	DIFFA
TAHOUA	AGADEZ
MARADI	

DEPT. BOUNDARY — ARRON. BOUNDARY

DEPT CAPITAL — NAT'L CAPITAL

OTHER ARRONDISSEMENTS

1. KOLLO
2. BIRNI N'GAOURE
3. GAYA
4. DOGONDOUTCHI
5. LOGA
6. BIRNI N'KONNI
7. MADAOUA
8. GUIDAN ROUMDJI
9. MADAROUNFA
10. TESSAOUA
11. MATAMEYE

Famine Early Warning System Country Report

NIGER

Vulnerability in Context

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

Prepared by
Price, Williams & Associates, Inc.
June 1987

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INTRODUCTION

This is the twelfth 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 problematical 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 Office Of Emergency Operations (OEO); 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 Agency (NOAA), the National Aeronautic and Space Administration (NASA), Centre AGRHYMET/Niamey, the UN Food and Agriculture Organization (UNFAO) Global Information and Early Warning System (GIEWS), the World Food Programme, and other U.N. agencies.

FEWS is operated by AID's Office of Technical Resources in the Bureau for Africa (AFR/TR) in cooperation with numerous U.S. Government and other organizations. The FEWS Country Reports are working documents of AFR/TR and should not be construed as official pronouncements of the U.S. Agency for International Development.

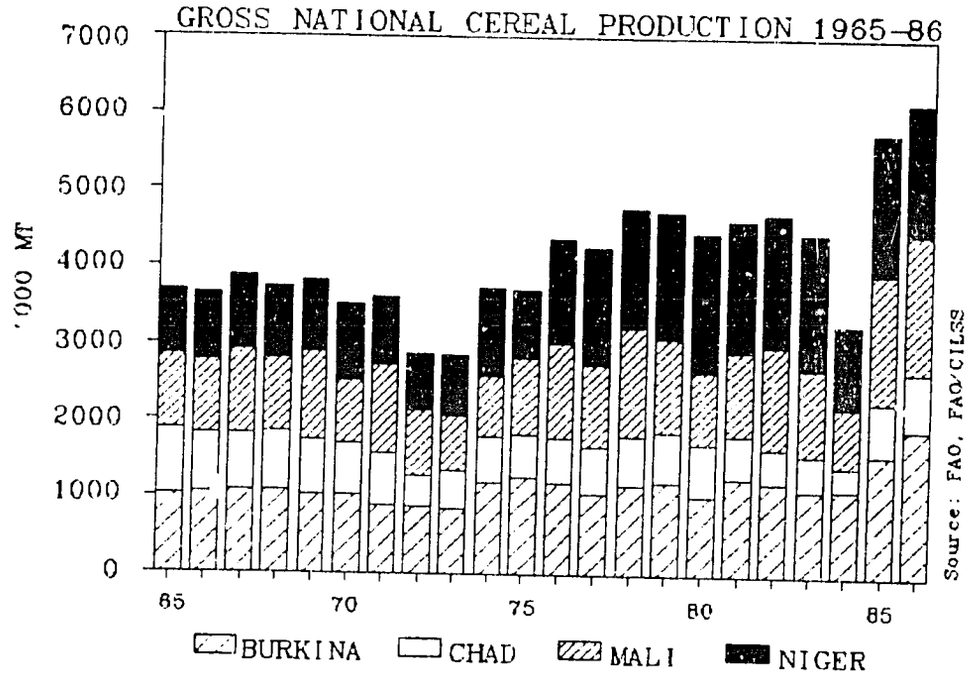
SUMMARY

This report continues the focus of last month's FEWS/Niger report on areas of agricultural vulnerability. It extends the field of observation from Niger alone, to Niger and its three immediate Sahelian neighbors: Burkina, Chad and Mali. By defining and mapping categories of vulnerability, a regional picture of relative agricultural fragility and strength emerges. A context in which to view Niger's agricultural performance and the size of its at-risk populations is thus provided, along with a more complete understanding of the impact of rainfall on the region's agricultural fortunes. As the rainy season of 1987 approaches (and has begun in many places), this report forms a backdrop for the agricultural events that will occur in the next four to five months.

NATIONAL LEVEL CONTEXT

On a national level, gross cereal production follows an upward trend from 1965 to 1986 in the four countries (see Figure 1), going from an aggregate of approximately 3,700,000 metric tons in 1965, to 6,100,000 in 1986. The years of relatively poor rain and harvests are easily identified by the dips in production in 1972 and 1973,

Figure 1: Gross National Cereal Production 1965-86



Source: for all figures and maps, see Data Sources, page 10.

and in 1984. While Chad does not appear to have increased its level of production over this period, Niger, Mali, and Burkina have increased absolute production, and have largely maintained their shares of production relative to each other.

It is important to note that this increase in absolute production, while indicative of some progress, does not necessarily reflect an increase in the amount of cereals available per capita in these countries, as evidenced by Table 1. Indeed, a picture of low, and fluctuating per capita production levels is suggested by these figures (NOTE: in order to make available a net per capita production at the widely used 167 kilogram annual cereal ration level, gross production must generally be above 197 kilograms per capita to allow for a minimum 15% post-harvest loss rate).

Table 1. Gross Per Capita Production

Year	Burkina	Chad	Mali	Niger
1965	222	253	191	225
1970	203	183	145	238
1975	226	140	161	187
1980	168	151	136	335

Figure 2. Gross National Cereal Production 1965-86

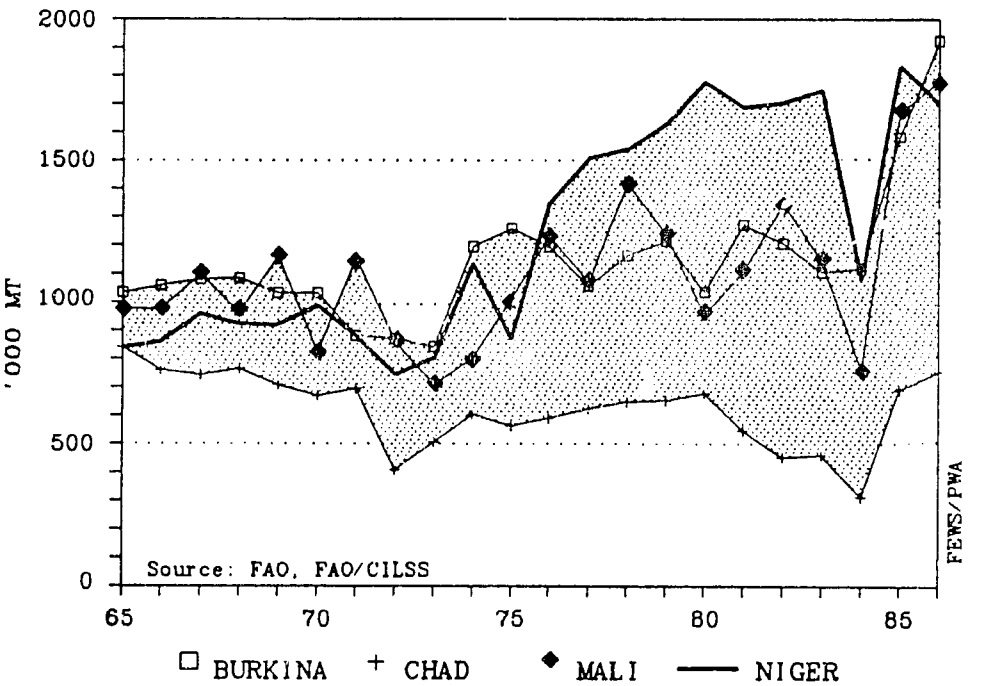


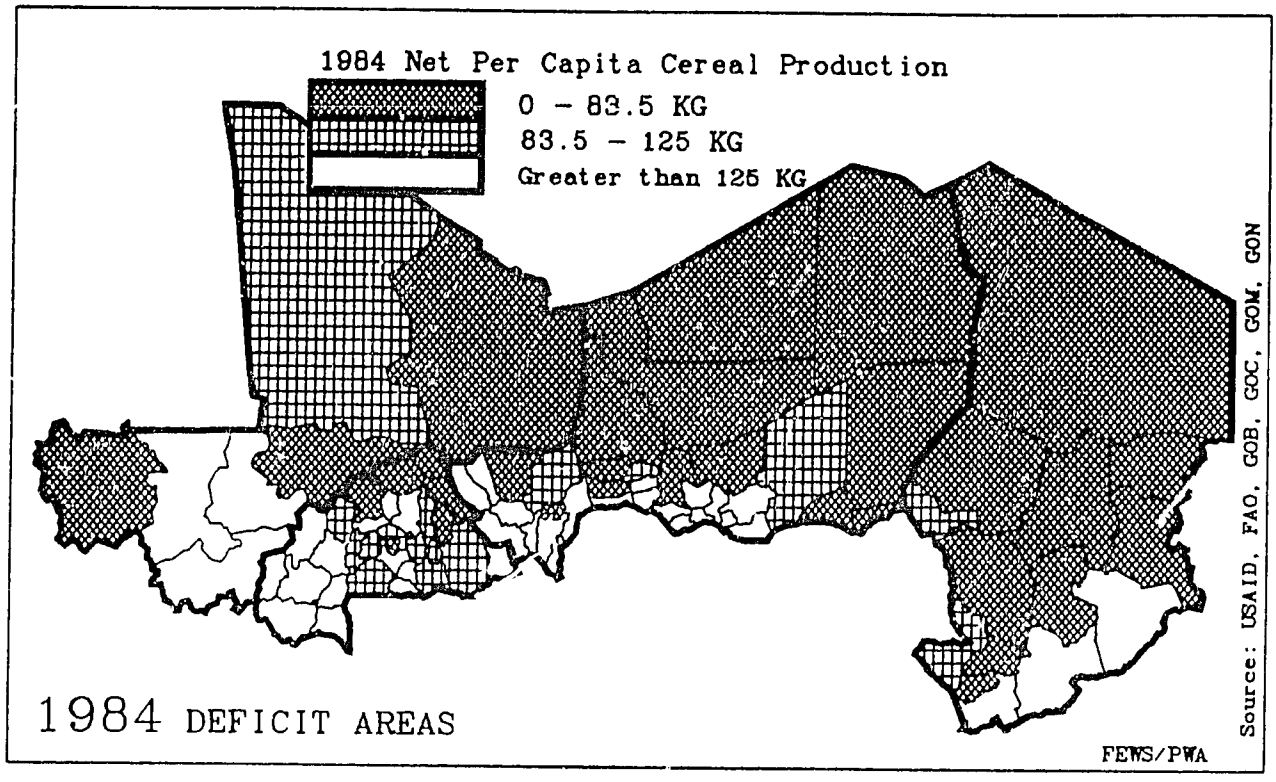
Figure 2 provides a comparative view of the evolution of gross production in each country. While all of these countries had relatively similar production levels in 1965, post-1975 results show a greater divergence, as Chadian production remained static or declined, and Nigerien production increased greatly. In the last two years, Mali and Burkina have again attained a level of production similar to that of Niger. Various factors might explain these differing trends: reporting methodology changes, the impact of differing agricultural policies, civil strife, and others. There is considerably less variance in the annual levels of production in Burkina and Chad, than in Niger and Mali. Nevertheless, variability of production levels is still a salient feature in all four. Inter-annual differences in consecutive years include drops in production as great as 50%, and increases of over 200%.

LOCAL PATTERNS

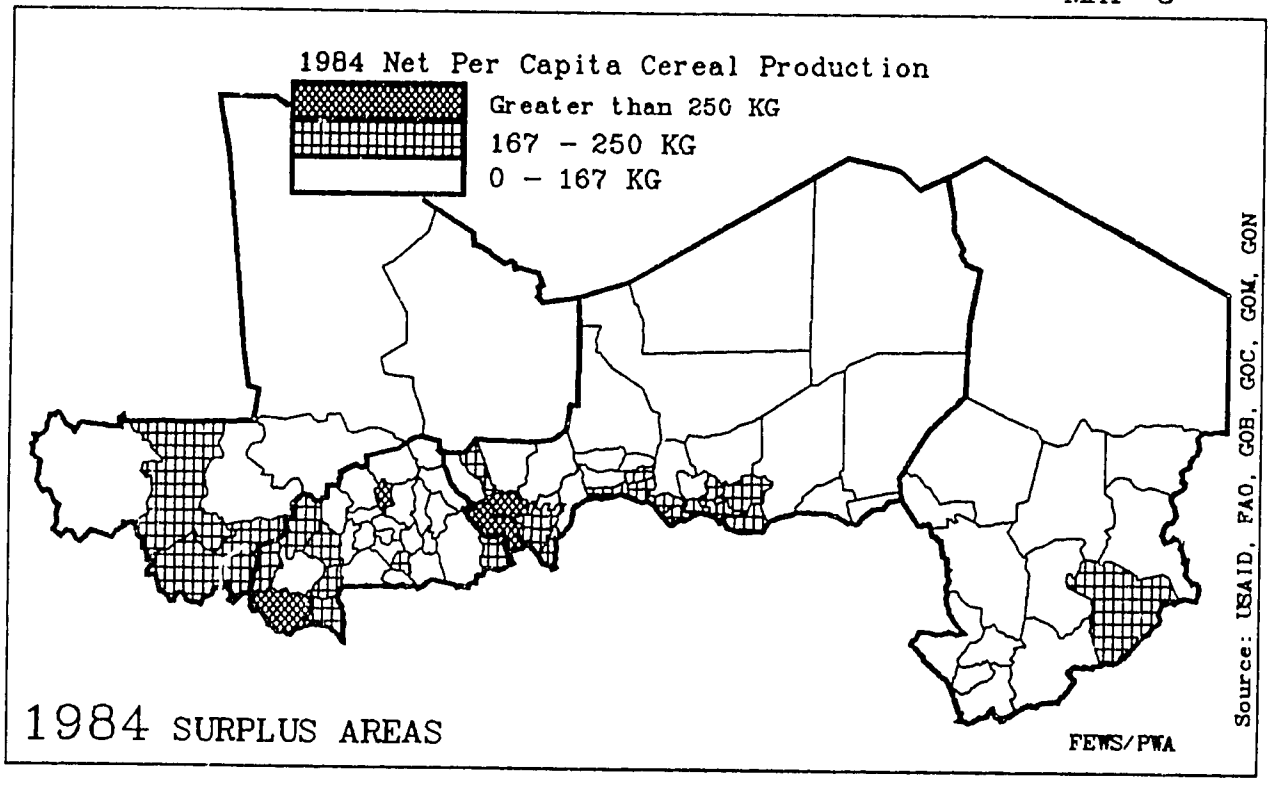
The trends in cereal production discussed above are interesting, but not particularly useful in determining the degree of food security in any of the four countries, largely because of the pronounced variation in cereal production levels from one area to another within the same country. Maps 1 through 6 (using data on net cereal production and population from lower level administrative units) display areas of deficits and surpluses during 1984 to 1986 period. As can be seen by referring back to the gross cereal production data in Figures 1 and 2, the three years included in these maps represent, in a sense, the extremes of good and bad years. This limited sample may therefore be useful in pointing out the range within which cereal production levels may vary, and the impact of different production levels on the supply of local food needs.

Three conceptual food security categories can be extracted from the patterns seen in these maps. The first category, in which cereal production never meets total cereal requirements, includes most pastoral areas, where low cereal production may have only a limited impact on the food security of the pastoral inhabitants. This category however, also includes some areas in which there are farming families that never produce as much cereal as they need, and must supplement their supply through other means, usually by pursuing other economic activities. A second category includes those areas in which cereal production is variable and generally low, sometimes meeting food needs, and sometimes not. The variability of production in these areas mirrors that shown on a national scale. A third category, and that in which there are the fewest representatives in the four countries seen here,

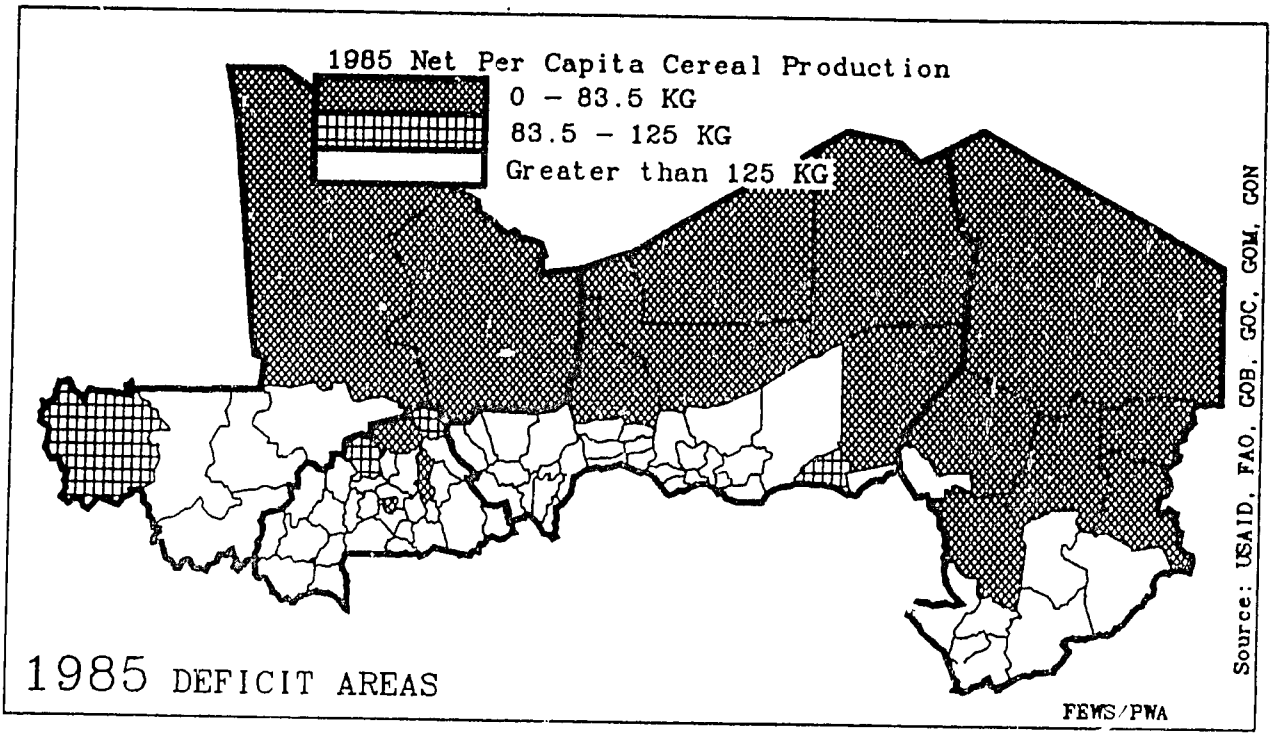
MAP 2


1984 Net Per Capita Cereal Production
0 - 83.5 KG
83.5 - 125 KG
Greater than 125 KG
1984 DEFICIT AREAS
FEWS/PWA
Source: USAID, FAO, GOB, GOC, GOM, GON

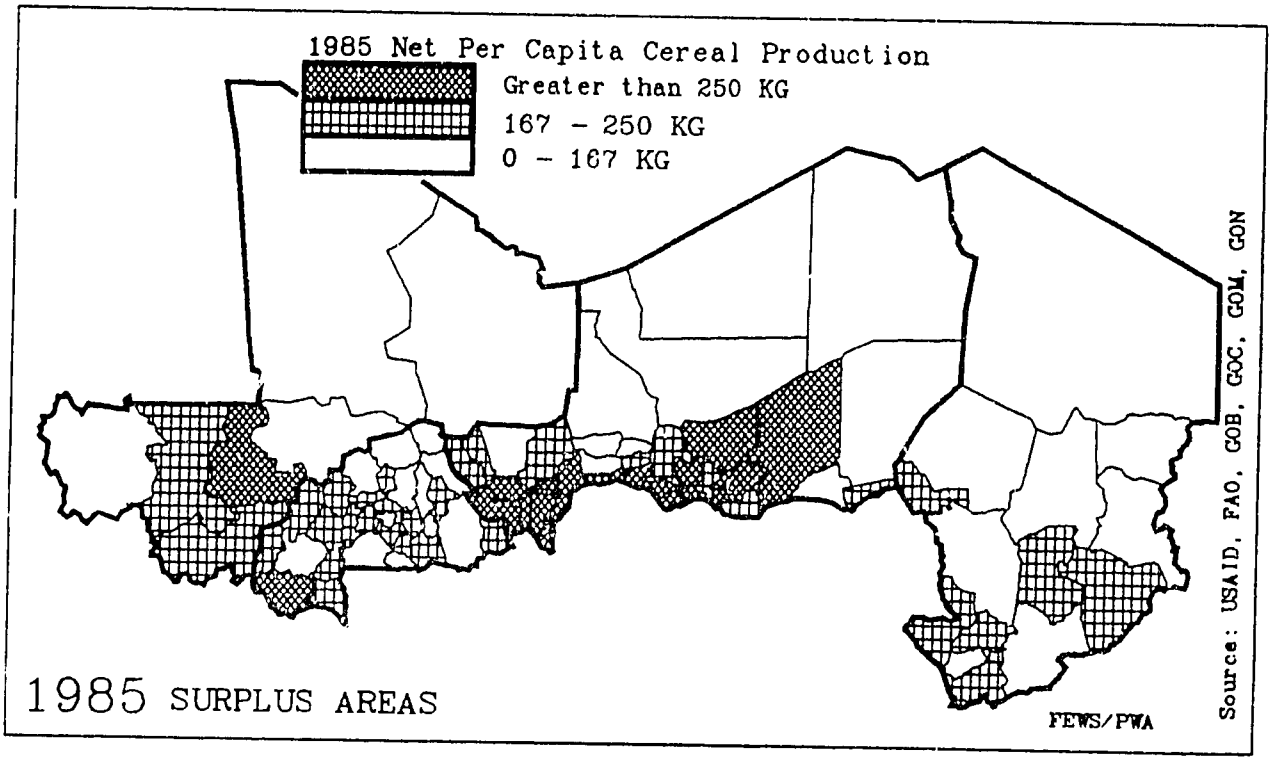
MAP 3


1984 Net Per Capita Cereal Production
Greater than 250 KG
167 - 250 KG
0 - 167 KG
1984 SURPLUS AREAS
FEWS/PWA
Source: USAID, FAO, GOB, GOC, GOM, GON

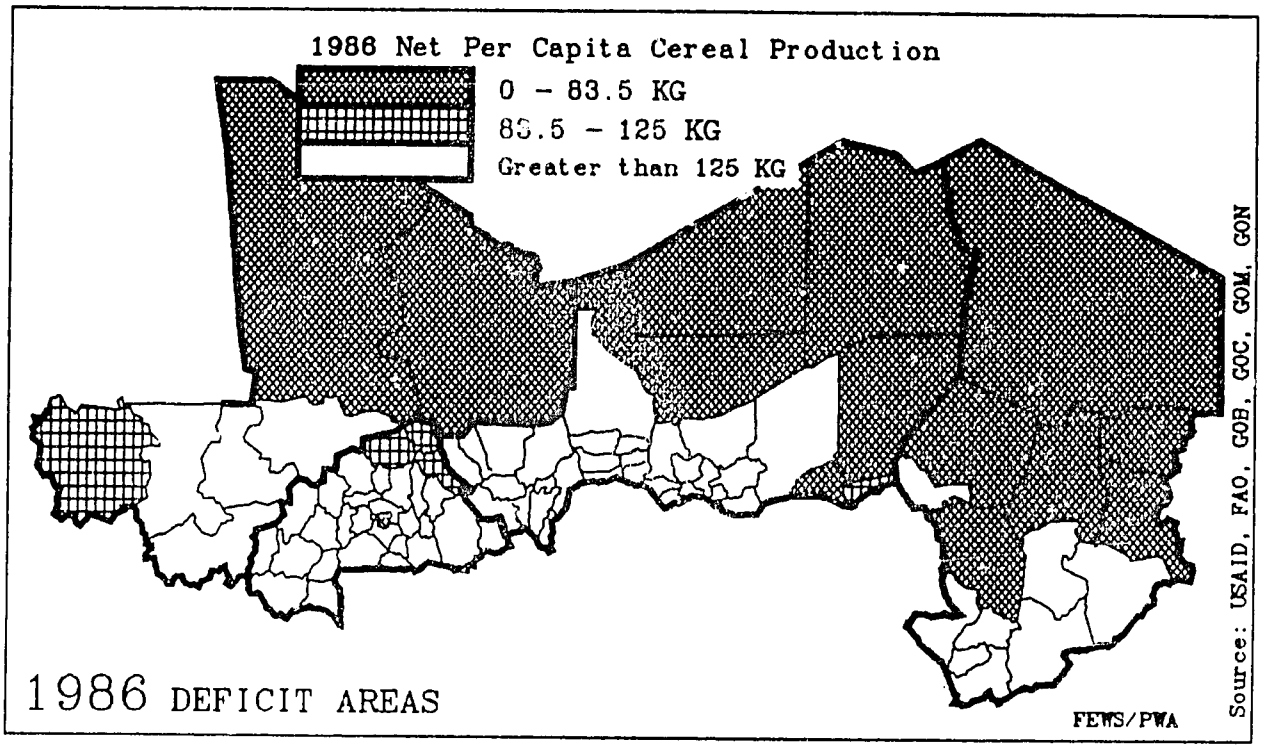
MAP 4


1985 Net Per Capita Cereal Production
0 - 83.5 KG
83.5 - 125 KG
Greater than 125 KG
1985 DEFICIT AREAS
FEWS/PWA
Source: USAID, FAO, GOB, GOC, GOM, GON

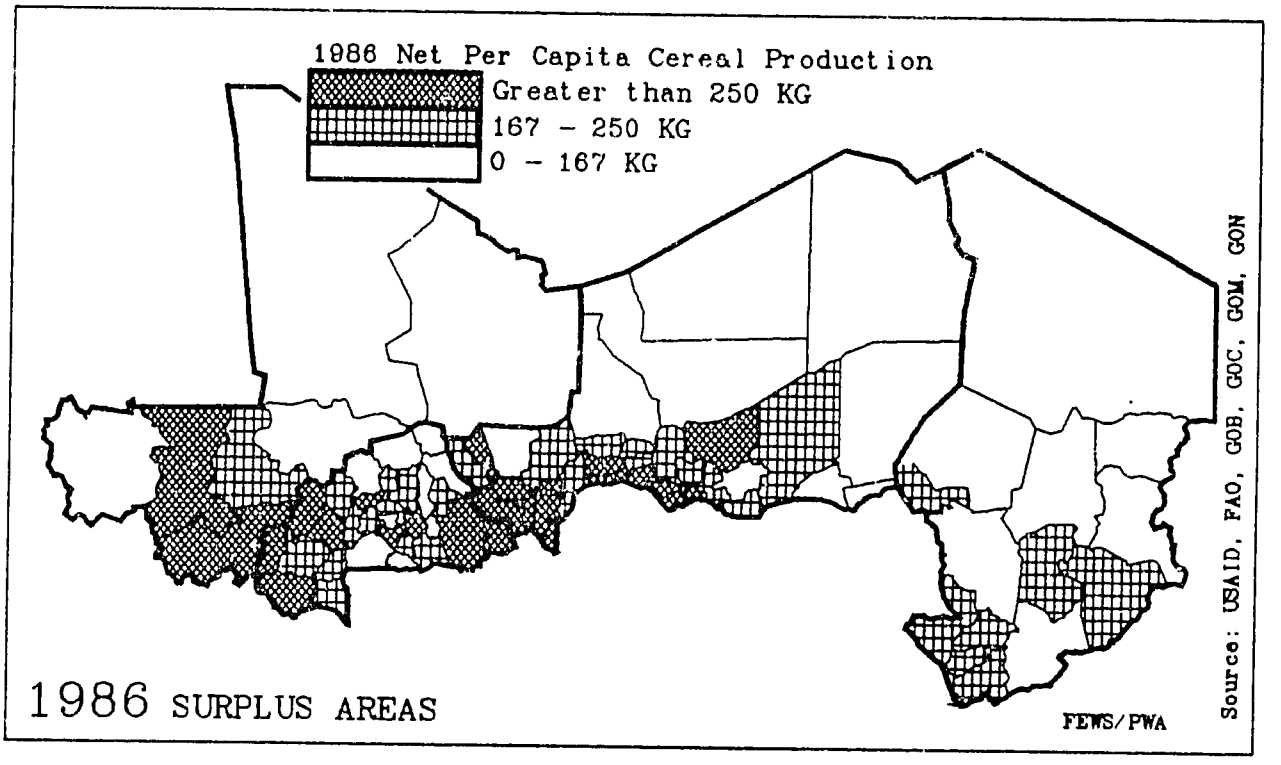
MAP 5


1985 Net Per Capita Cereal Production
Greater than 250 KG
167 - 250 KG
0 - 167 KG
1985 SURPLUS AREAS
FEWS/PWA
Source: USAID, FAO, GOB, GOC, GOM, GON

MAP 6


1986 Net Per Capita Cereal Production
0 - 83.5 KG
83.5 - 125 KG
Greater than 125 KG
1986 DEFICIT AREAS
FEWS/PWA
Source: USAID, FAO, GOB, GOC, GOM, GON

MAP 7


1986 Net Per Capita Cereal Production
Greater than 250 KG
167 - 250 KG
0 - 167 KG
1986 SURPLUS AREAS
FEWS/PWA
Source: USAID, FAO, GOB, GOC, GOM, GON

includes areas in which cereal needs are almost always exceeded by local net production.

Maps 2, 4 and 6 show administrative units in which net cereal production met less than a hypothetical per capita annual cereal requirement of 167 kilograms (kg)[1]. Those areas in which net production met either less than 50%, or less than 75% of this hypothetical standard, are shaded. Maps 3, 5 and 7 show the other side of the coin, those areas in which production was above the hypothetical 167 kg level of cereal self-sufficiency, and those that were very far above this level (higher than 250 kg per person).

As can be seen in Maps 2, 4 and 6 (deficit areas), a number of northern administrative units are shaded for all three years, indicating that they may never meet local cereal needs, the first category defined above. Many of these areas are largely pastoral in nature, and cereal needs are probably lower than the 167 kilogram level used here as a standard. Nevertheless, several of these areas have experienced severe environmental stress from poor rains in the last few years, and herds have been severely reduced in size as a result. Many herders affected by this problem have had to leave the area or are subsisting on food distributions. In both cases, they may be more dependent on cereals now than they have been in the past.

In any case, food vulnerability is a constant fact of life here, and one for which the pastoral lifestyle is relatively well-adapted. Most pastoral populations tend to be relatively mobile, and can buffer the impact of a poor year by moving from one area to another, if better areas are available. A string of poor years will, however, have a great impact on their livelihood, as animals may die or must be sold off. Once the rains return, reconstructing a herd is a long-term process, and the rebound to food security, based on animal herding, is much slower than for farming populations. In Niger, this category might include most of Agadez Department, and much of the arrondissements of Tchin-Tabaraden, Dakoro, Tanout, and Goure.

1 Annual cereal requirement estimates sometimes vary greatly within a country, depending upon the point of view and/or the research available to the international donors and national bodies that estimate them (e.g., a rate used by USAID in 1985 for pastoralists in Niger was 175 kg, while the GON estimate is 200 kg). Across the Sahel, from Mauritania to Chad, a wide range in estimates is found (Government estimates specify 165 kg in Mauritania, 167 in Mali, 190 in Burkina, 142 in Chad, and 200/250 kg for pastoralists/agropastoralists in Niger).

There is a belt of other areas (defined as category two above), usually to the south of the pastoral areas, in which net cereal production may meet, or come close to meeting, most local food requirements in good years, but not in years of poor rains. Cereal production in these areas is characterized by an extreme variation in the size of the harvest. They display a fragility that is typical of the Sahel. Looking in turn at Maps 2, 4 and then 6 (moving from the very poor rains of 1984 to the good one of 1985 and 1986), one can observe the progression of these areas from heavily shaded areas (production of less than 50% of per capita cereal needs) into lightly or unshaded areas, indicating an increased ability to meet local cereal requirements. These areas of great variation in production may also be those in which the greatest amount of surveillance should occur yearly to identify zones in which food shortages will occur, as food production there is unpredictable in any one year. In Niger, this belt extends through Ouallam, Filingue, Loga, Tahoua, Illela, Keita, Dakoro, Tanout and Goure arrondissements.

A third category of interest includes those areas in which food needs are regularly exceeded by net local cereal production. Looking at Maps 3, 5 and 7 (surplus areas), several administrative units can be seen in which high per capita production seems to be the general case. Looking at the year of poorest rains (1984) in Map 3, one can identify the zones that are the most insulated from the impact of insufficient rains. They include areas in which riverside irrigation permits rice cultivation, sites with high water tables, and those areas located within Sudanian-type climate zones. In Niger, this category includes Kollo, and to a lesser degree Tillaberi, with their rice production schemes, and the arrondissements lying along the southwest and south-central border, where the climate and water resources provide relatively more moisture for crop growth.

Were data available for relatively smaller administrative units in Mali and Chad, it might be easier to see the same general south to north decline in relative production that emerges in Niger and Burkina. In larger units, the low values in the north are averaged into the high values in the south, and an "averaged" picture is displayed. Nevertheless, belts of cereal production vulnerability can be projected onto a map (see Map 8) to show the general location of the three categories described above. As would be expected, they generally follow rainfall isohyets, again indicating the preeminent role of rainfall in determining food security in these four countries.

MAP 6: RELATIVE AGRICULTURAL VULNERABILITY

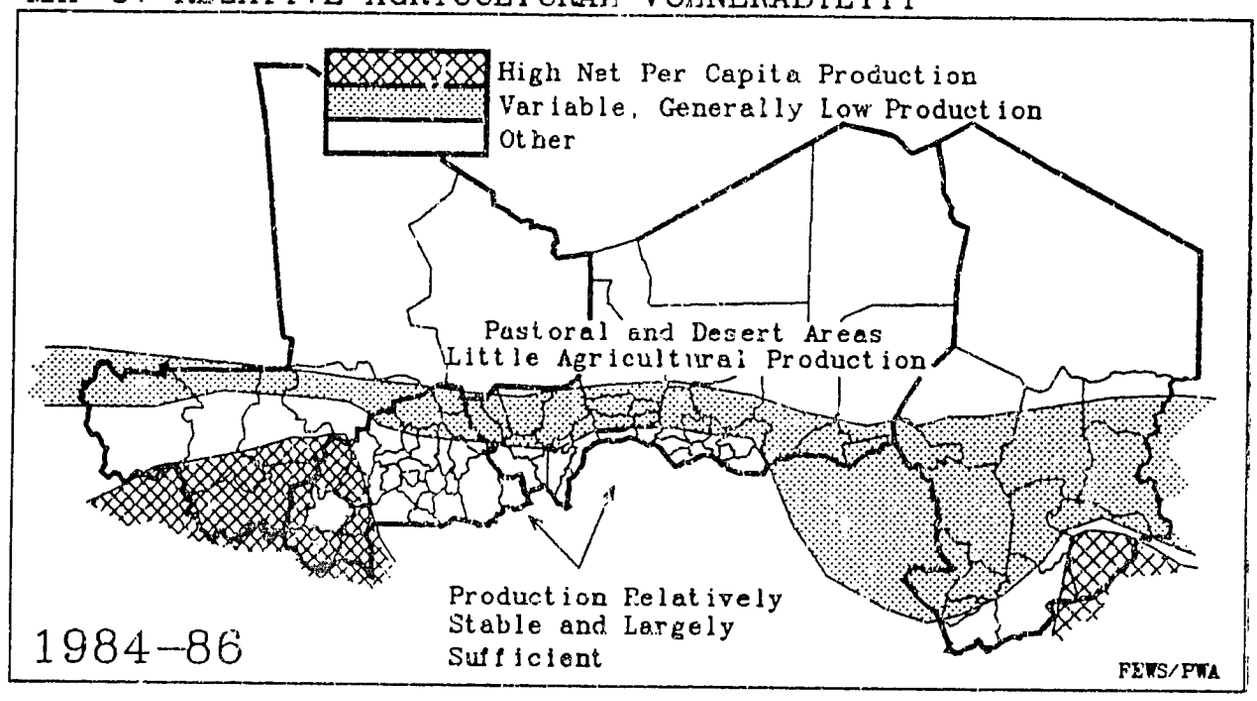
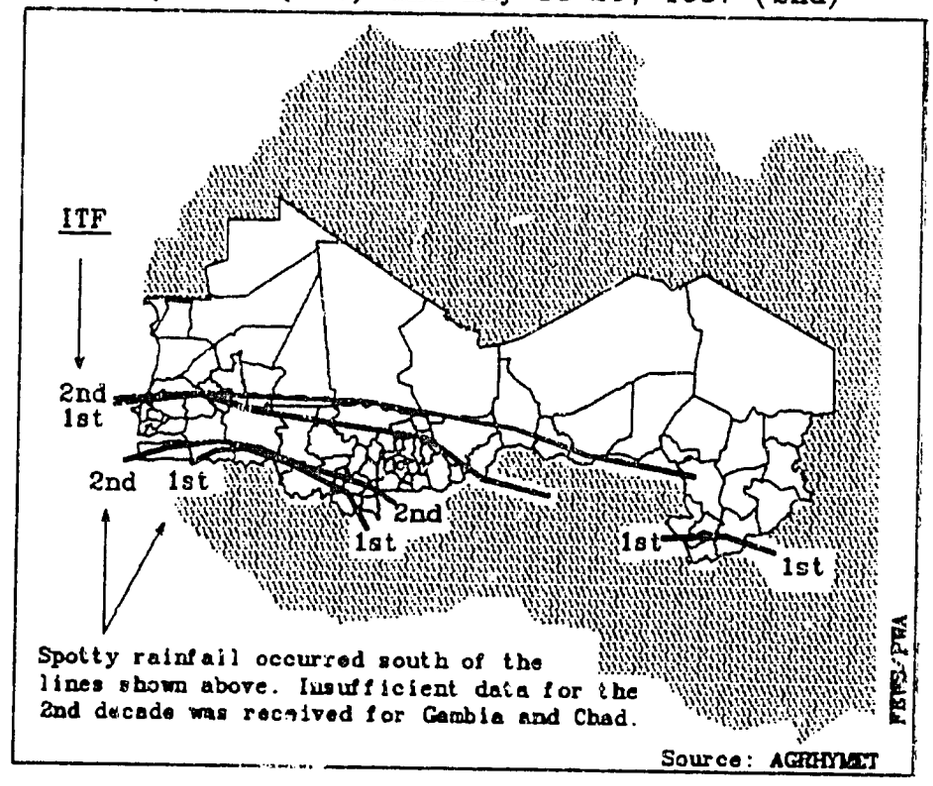


FIGURE 3

Inter-Tropical Front and Rainfall by Decades
May 1-10 (1st) and May 11-20, 1987 (2nd)



METEOROLOGY

The first significant rains occurred in Niger during May (see Figure 3). Very early climate impact reports from the National Oceanic and Atmospheric Administration's (NOAA) National Environmental Satellite, Data and Information Service and the Cooperative Institute for Applied Meteorology, and from the Climate Analysis Center of the National Weather Service, indicate that rainfall has, in general, been below normal. The regional agro-meteorological agency, AGRHYMET, in its second decade report for May, indicates that planting was still not being counseled in the southernmost parts of Niger as of the 20th of May. Nevertheless, it is still too early in the season to be able to draw conclusions from this relative lack of rain.

DATA SOURCES

As might be expected, the quality of data relating to both agricultural production and the population of sub-regional administrative units is extremely variable. The Food and Agricultural Organization (FAO) was a major source of longitudinal agricultural production data in this report. Malian cereal production data before 1984 is not directly comparable to present years due to a substantial change in methodology. More recent estimates of production for all four countries for 1984, 1985 and 1986 come either from FAO/CILSS joint evaluation teams, Ministry of Agriculture reports from the concerned countries, or from USAID estimates. Recent population figures are from a variety of national and international sources (Burkina: GoB/US Bureau of the Census; Chad: FAO for 1984 and 1985, and USAID for 1986; Mali: PADEM and Alan Hill, Niger: FEWS/-Niger). The source for populations inferred in Table 1 is the FAO. While the quality of all the data used is certainly open to question, the results produced by the manipulation of the data appear intuitively likely.

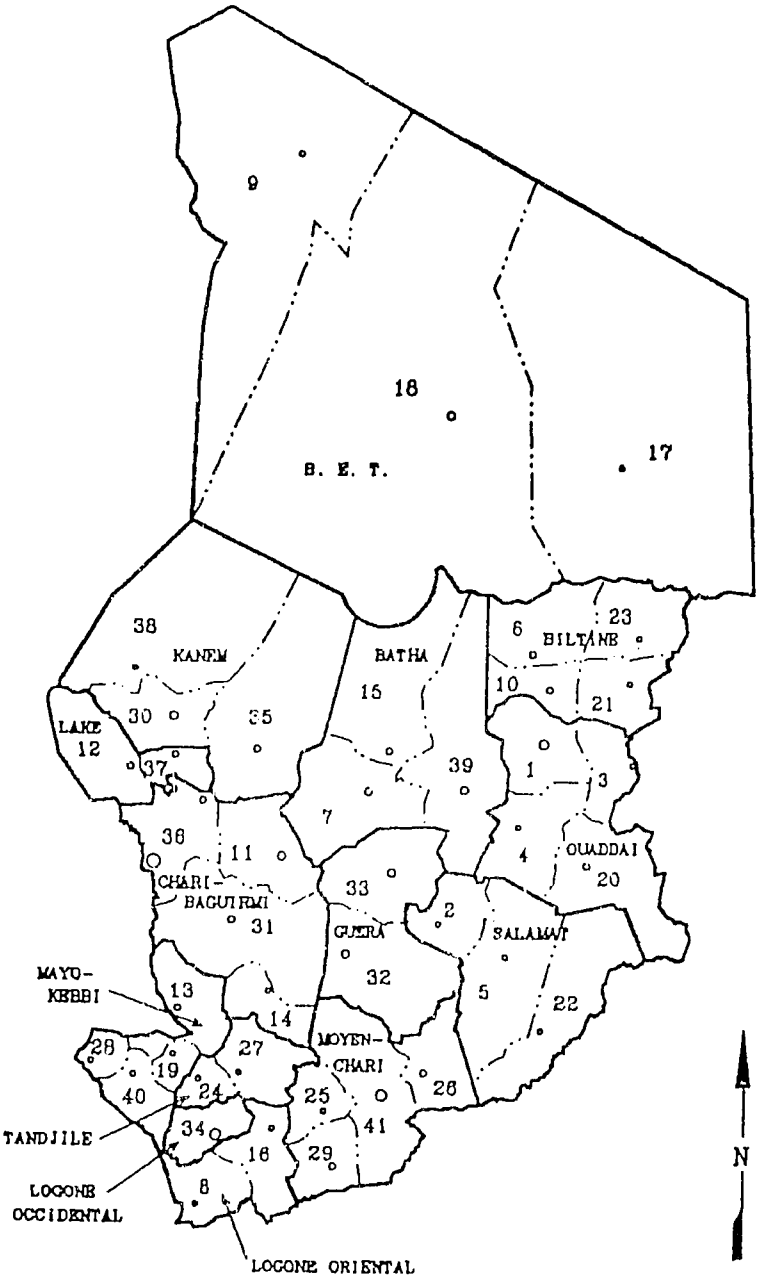
PROVINCES

FEWS/PVA, February 1987

Administrative Units

(Prefectures & Sub-prefectures)

Sub-Prefecture		PREF
1.	Abeche	OUA
2.	Abou Deia	SAL
3.	Adre	OUA
4.	Am Dam	OUA
5.	Am Timan	SAL
6.	Arada	BIL
7.	Ati	BAT
8.	Baibokoum	LOr
9.	Tibesti	BET
10.	Biltine	BIL
11.	Bokoro	ChB
12.	Bol	LAK
13.	Bongor	MK
14.	Bousso	ChB
15.	Djedaa	BAT
16.	Doba	LOr
17.	Ennedi	BET
18.	Borkou	BET
19.	Goundou-Gaya	MK
10.	Goz Beida	OUA
21.	Guereda	BIL
22.	Haraze Mangueigne	SAL
23.	Iriba	BIL
24.	Kelo	TAN
25.	Koumra	MCh
26.	Kyabe	MCh
27.	Lai	TAN
28.	Lere	MK
29.	Moissala	MCh
30.	Mao	KAN
31.	Massenya	ChB
32.	Melfi	GUE
33.	Mongo	GUE
34.	Moundou	LOc
35.	Moussoro	KAN
36.	N'Djamena	ChB
37.	N'Gouri	LAK
38.	Nokou	KAN
39.	Oum Hadjer	BAT
40.	Pala	MK
41.	Sarh	MCh



o Main Town in Sub-prefecture

——— Prefectures

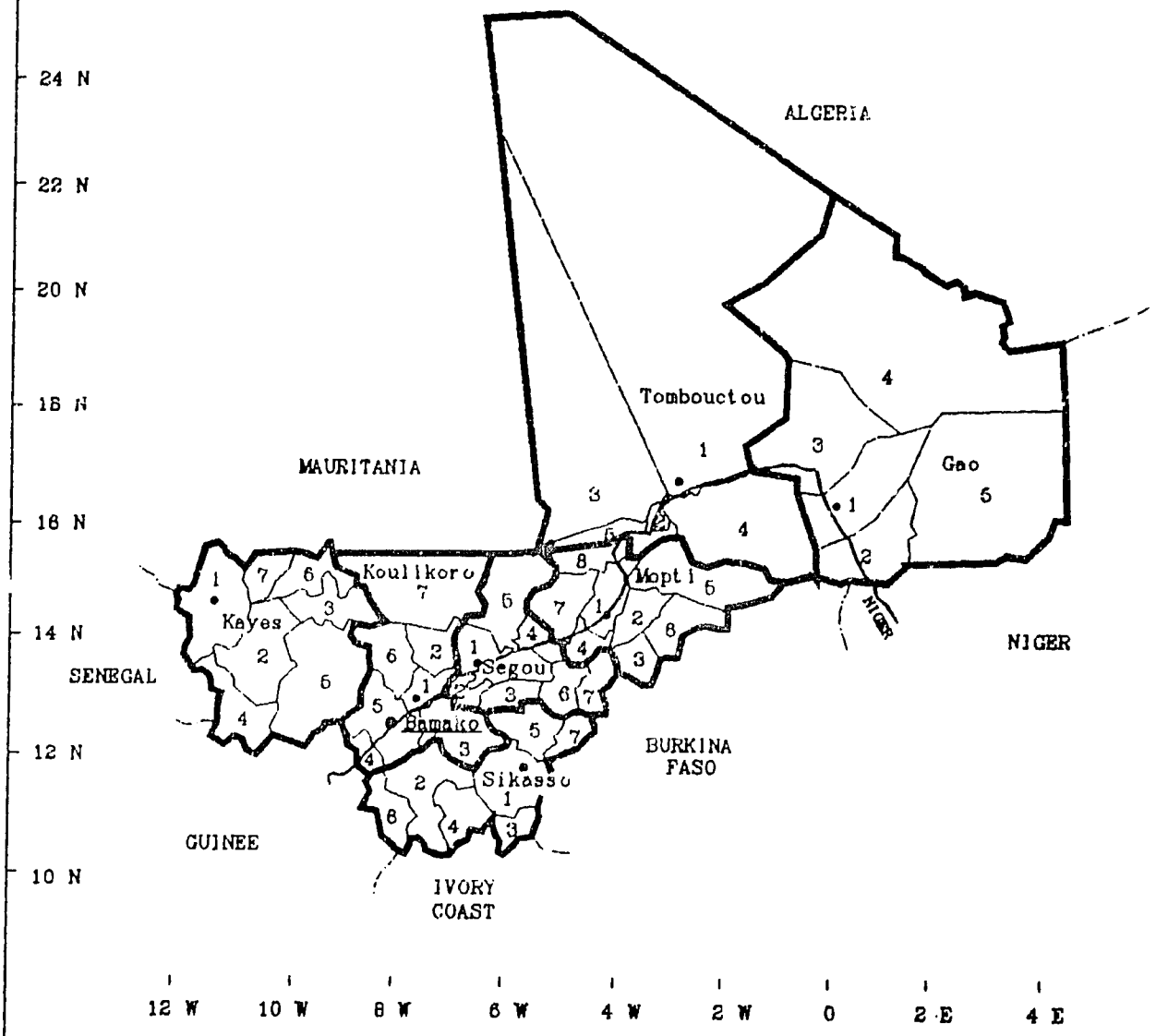
— - - — - - Sub-prefectures

Source: 1969 Map in Eng.; Two Undated Maps in Fr.; Map Authors Unknown

FEWS/PWA, February 1987

MAP 11 MALI

Administrative Units: Regions & Cercles



REGIONS and CERCLES

KAYES
1. Kayes
2. Bafoulabe
3. Diema
4. Kenieba
5. Kita
6. Nioro
7. Yelimane

KOULIKORO
1. Koulikoro
2. Banamba
3. Dioila
4. Kangaba
5. Kati
6. Kolokani
7. Nara

SIKASSO
1. Sikasso
2. Bougouni
2. Kadiolo
4. Kolondieba
5. Koutiala
6. Yanfolila
7. Yorosso

SEGOU
1. Segou
2. Baraoueli
3. Bla
4. Macina
5. Niono
6. San
7. Tominian

MOPTI
1. Mopti
2. Bandiagara
3. Bankass
4. Djenne
5. Douentza
6. Koro
7. Tenenkou
8. Youvarou

TOMBOUCTOU
1. Tombouctou
2. Dire
3. Goundam
4. Gourma-Rharous
5. Niafunke

GAO
1. Gao
2. Ansongo
3. Bourem
4. Kidal
5. Menaka

Other Int'l Boundaries
Region Boundary
Cercle Boundary
National Capital
Regional Capital
200 km

FEWS/PWA 1/87