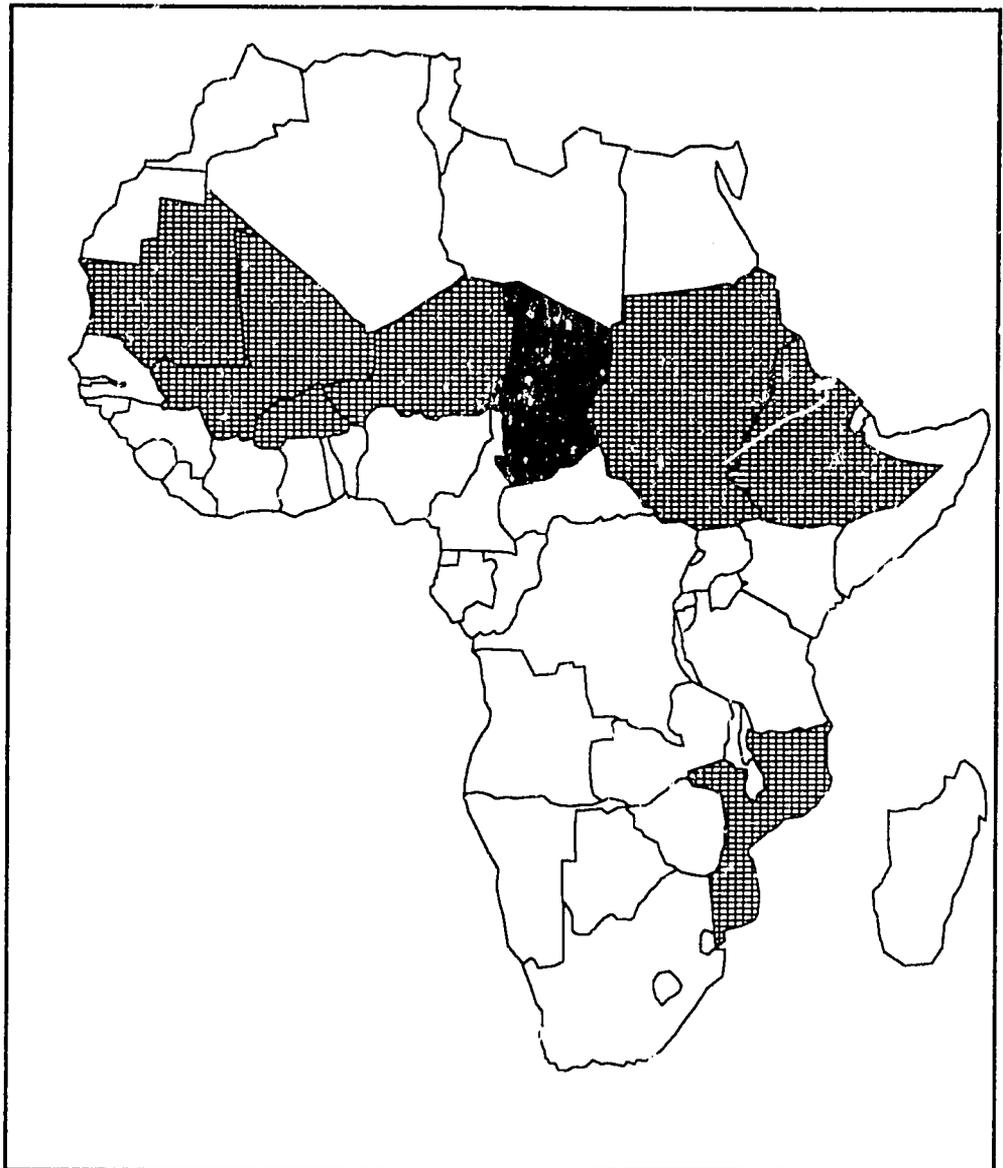


Report Number 6
November 1986

FEWS Country Report CHAD

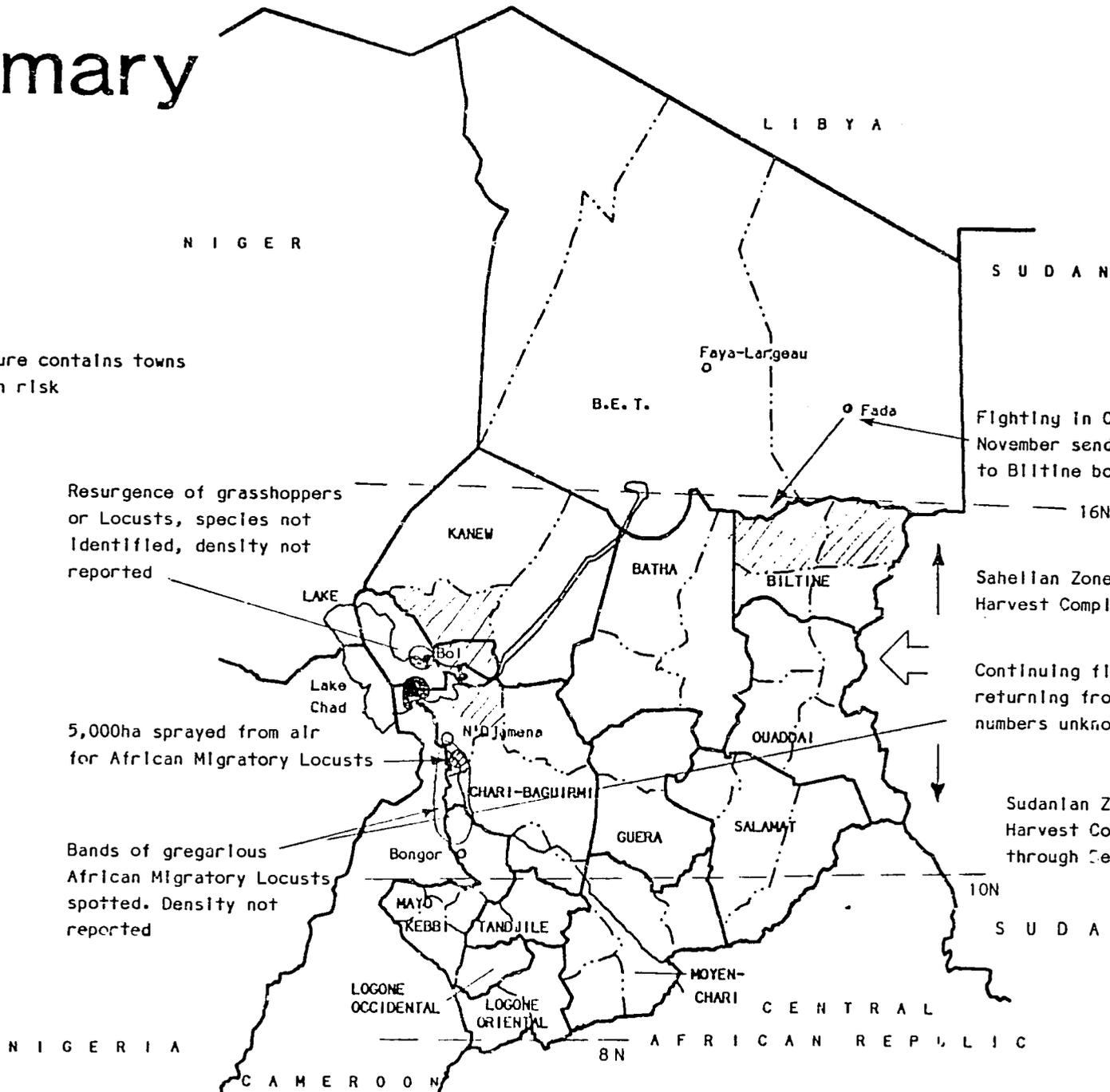


Africa Bureau
U.S. Agency
for International
Development

Summary Map

MAP 1 : CHAD

⊙ Sub-prefecture contains towns at very high risk



Resurgence of grasshoppers or Locusts, species not identified, density not reported

5,000ha sprayed from air for African Migratory Locusts

Bands of gregarious African Migratory Locusts spotted. Density not reported

Fighting in October and November sends civilians to Biltine border for relief

Sahelian Zone Harvest Complete

Continuing flow of refugees returning from Sudan numbers unknown

Sudanian Zone Harvest Continues through December

FEWS/PWA, Nov. 1986

CHAD

Excellent Yields, but Grasshoppers Intervene

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

Prepared by
Price, Williams & Associates, Inc.
November 1986

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INTRODUCTION

This is the sixth of a series of monthly reports issued by the Famine Early Warning System (FEWS) on Chad. 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 process underlying the deteriorating situation is highlighted by the FEWS effort, 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, food needs estimates 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 its 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 food needs estimates presented periodically in FEWS reports should not be interpreted to mean food aid needs, e.g., as under PL480 or other donor programs.

FEWS does not collect primary data. Rather, it receives information from various domestic U.S. and international agencies and private voluntary organizations, and from government agencies in the countries under study. The information is then examined, compiled and analyzed for its predictive potential. Without the ongoing cooperation of all these organizations, FEWS could not function.

In particular, the sixth Chad report owes a debt to various offices of the US Agency for International Development (AID), National Oceanic and Atmospheric Administration's National Environment Satellite, Data, and Information Service's Assessment and Information Services Center (NOAA/NESDIS/AISC), and USAID/N'Djamena; the Government of Chad (GOC) Ministry of Agriculture National Office of Rural Development (ONDR); the UN Food and Agricultural Organization (FAO) and World Food Program (WFP); the Permanent Interstate Committee for Drought Control in the Sahel (CILSS); PRIFAS; the European Agency for Development and Health (AEDES); AGRHYMET; and CARE.

FEWS is operated by AID's Office of Technical Resources in the Bureau for Africa in cooperation with numerous USG and other organizations.

SUMMARY

As the rainy season comes to an end, the harvest throughout the Sahelian zone of Chad is complete or near completion. Harvest will be on going through December in the Sudanian zone. Overall cereal production is good. Chad will experience a theoretical cereal balance, or even a slight surplus, but irregular rains and grasshoppers have combined to create isolated areas of high nutritional risk, including villages with no harvest (Map 3). There have been sufficient stocks of food grains in-country to meet immediate emergency needs.

Issues

- o Facilitating the transport of cereals from surplus areas to deficit areas is a task facing the Government of Chad (GOC) in the coming months.
- o Gregarious bands of unreported density of African Migratory Locust nymphs were identified on the flood plains south of N'Djamena; 5,000 hectares were treated by air. This area and the Bol area of Lake Prefecture are especially worthy of monitoring for locust activity in the spring.
- o Plans for 1987 pest control, especially for grasshoppers and locusts, should be completed as final evaluations of this year's campaign take place. The 1986 control campaign has provided the opportunity to solidify the GOC Crop Protection Service's (CPS) early warning system for pests.

Key November Events

- o AID, GOC and the UN Food and Agriculture Organization (FAO) have each estimated the 1986 cereal production and hence the expected grain deficit for 1987.
- o Aerial treatment for grasshoppers and locusts has finished for 1986, although ground control will continue in the flood recession croplands of the south through December.
- o Fighting in northeastern Chad sent civilians fleeing to government controlled areas. Relief was sent to the affected areas, but it is unknown whether continued fighting will necessitate continued relief assistance.

RAINFALL AND VEGETATION

The rainy season has ended. The rivers are still flowing fairly strongly, though. In the third decade of September, the flow of the Chari River at N'Djamena averaged 1274 cubic meters per second (cm/s), 57% of the flow for same period last year. The Chari crested during the second October decade, responding to the decrease in rainfall. By the third October decade, the flow was 1670 cm/s, versus the 1985 flow of 1930 cm/s for same period.

In spite of the Chari's low flows, Lake Chad has been flooding more this year than last, implying that other tributaries have been experiencing good flows. At a testing spot on the southern shore, the depth was 154 cm in early October compared to 118 cm for early October, 1985. This is a substantial amount of water, which bodes well for polder farming in the area.

By mid-October, the ITD (Inter-Tropical Discontinuity) had dropped to a position between 8N and 10N. The rains continued as usual in a few areas in the south of Chad. Sarh was again without rain, however, having received 13 mm of its average 65 mm cumulative rainfall for October. This continues that area's 1986 pattern of spotty rain.

The processing of satellite imagery finished for 1986 in September for photo-reproduction and in October for average sub-prefecture NVDI. Map 2 shows the progression of 'greening' over the period of July through October. Map 2a shows the percent difference between 1986 'greenness' and the 1981 to 1985 average greenness over the same months. The former map shows the decline of 'greenness' in the north as the rainy season ended. The latter map shows the south of Chad 'greening' quite strongly through the first week of October. Figures 1a and 1b show the progression of 1986 NVDI for selected sub-prefectures as compared to the previous five year average. Note that, from September on, all of the sub-prefectures described in Figure 1 have been 'greener' this year than the average of the previous five years.

AGRICULTURE

At the beginning of October, cereal and sesame harvest had begun in Ouaddai, Kanem, Guera and Chari-Baguirmi Prefectures. At that time, the Ministry of Agriculture's National Office of Rural Development (ONDR) predicted that the millet and sorghum yield would be slightly higher than 554 kg/ha, the 1985 figure. By late November, however, ONDR was predicting a 10% decrease in millet yield from 1985 due to the depredations of grasshoppers and other pests. Extensive grasshopper damage was reported in Kanem and Lake Prefectures, Koumra Sub-prefecture, Moyen Chari Prefecture and in Adre Sub-prefecture, Ouaddai Prefecture.

ONDR estimated that the 1986 acreage for rainfed millet and sorghum in the Sudanian zone is 563,060 ha, up 11,660 ha from 1985. The prediction for the Sahelian zone was that acreage for these two crops would be about the same or slightly higher than in 1985. FAO estimated that the total area planted in grains in 1986 was 1,262,000 ha, versus 1,157,800 ha in 1985, while the Mission has used

the ONDR figures of 1,237,950 ha for 1986 and 1,165,825 ha for 1985. These two sets of figures are quite close, considering the lack of information in Chad on which to base estimates.

On the other hand, ONDR has estimated this year's cereals harvest to be 685,000 MT after loss to pests while FAO has put its post-pest cereals harvest estimate at 754,000 MT. This may be due to one or both of differing estimates of crop yields and differing estimates of pest damage. The Mission is sending a breakdown of harvest estimates by geographic region and by crop which may indicate where differences lie.

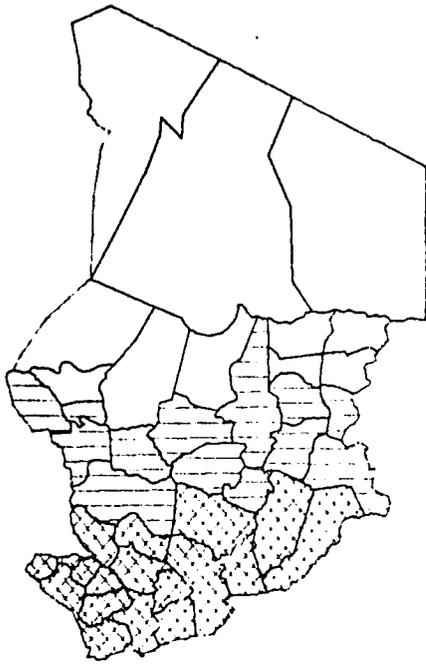
Grasshoppers

October and November saw a strong aerial assault on grasshoppers and locusts, following the delivery of a helicopter and several fixed-wing craft. Of the 174,222 hectares treated, 139,825 were treated by air. The delay in arrival of the aircraft, however, postponed treatment beyond the 'window of opportunity' for some areas. Adre Sub-prefecture, Ouaddai Prefecture, although targeted for aerial spraying during early assessments, was passed by due to the tardiness of the arrival of the fixed-wing craft. Most of the control efforts took place in the Sahelian areas of Kanem, Lake, Ouaddai, Batha and Chari-Baguirmi Prefectures. Table 1 in the Appendix gives an approximation of areas treated, as imputed from Mission cables.

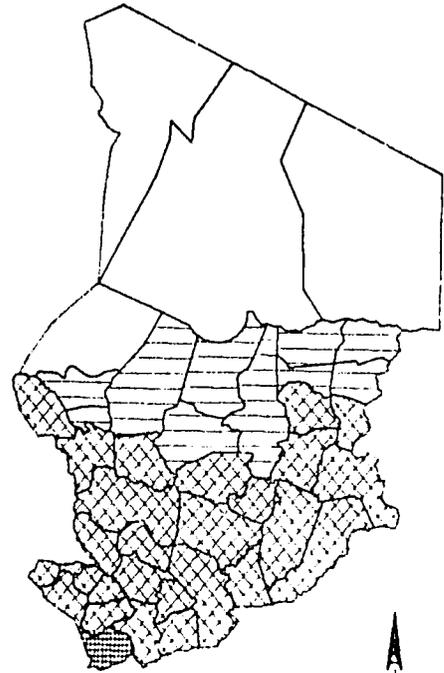
Besides the loss of crops, a second serious result of the tardiness of the aerial control campaign is the opportunity given the grasshoppers to lay eggs. The egg sites should be identified this year so that next year's control campaign can begin efficiently right at the start of the rainy season. A third outcome of the slow start of the 1986 campaign is a current surplus of the pesticides Propoxur and Fenitrothion, which should greatly aid the beginning of next year's campaign.

A new hatching of African Migratory Locusts was identified on the flood plains between N'Djamena (Chari-Baguirmi Prefecture) and Bongor (Mayo-Kebbi Prefecture). The nymphs were confirmed to be in the gregarious phase, which does not bode well for next year. Aerial spraying of 5,000 ha of infested area did take place. The resurgence of grasshoppers or locusts (the species has not yet been determined) over 20,000 ha in the Bol area of Lake Prefecture after intense control efforts points out the need for continued vigilance, however. While the current insects will not threaten crops, their offspring hold the potential for causing a good bit of damage in 1987.

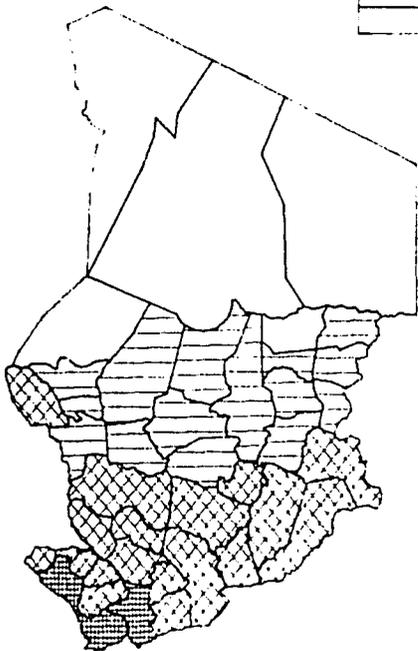
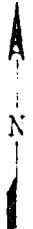
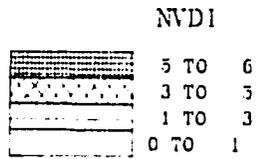
Average NVDI, 1986



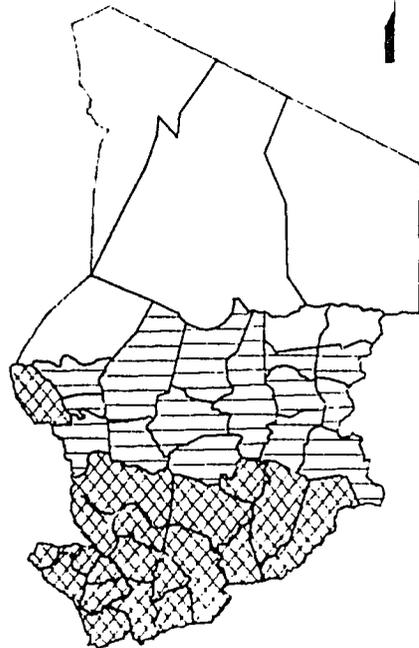
July 1-20



August 11-31

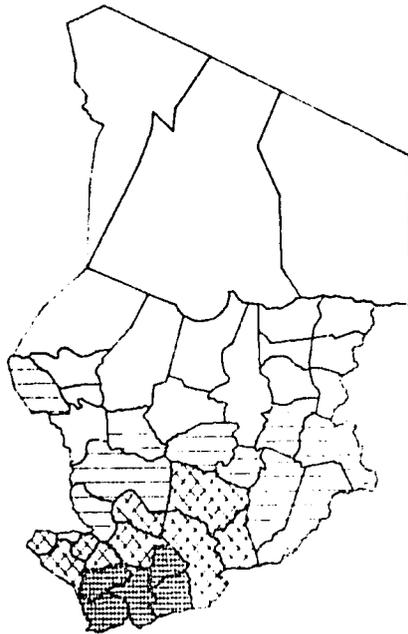


September 21-October 10

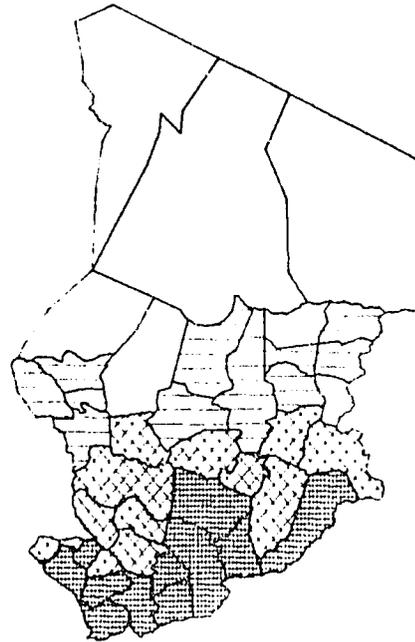


October 11-31

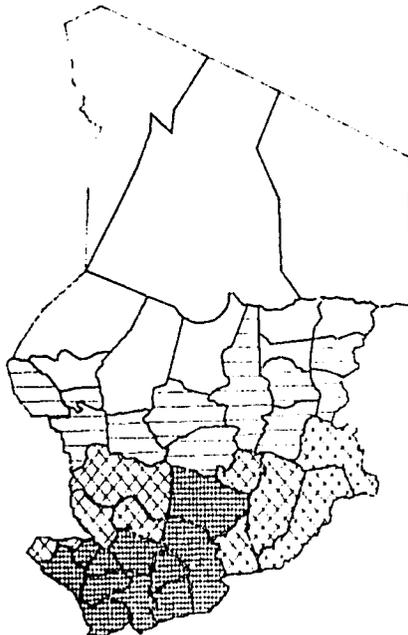
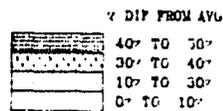
Percent Difference NVDI, 86 vs 81-85 Average



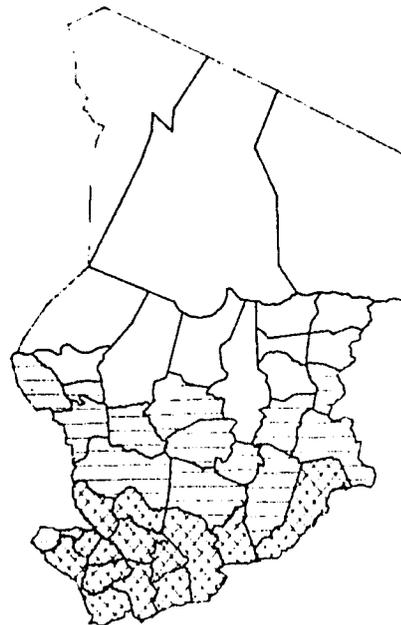
July 1-20



August 11-31



September 21 -- October 10



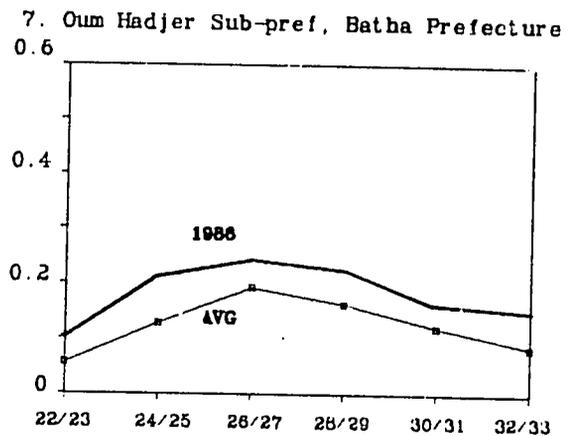
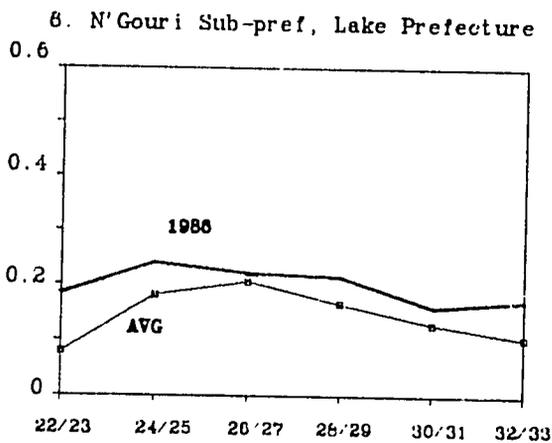
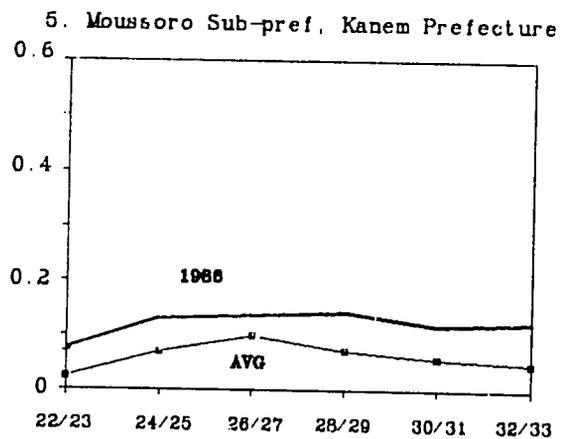
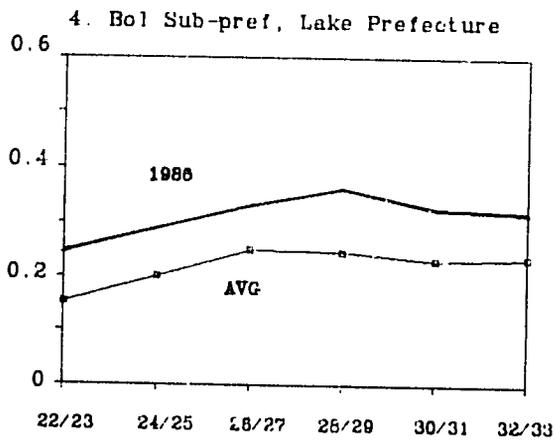
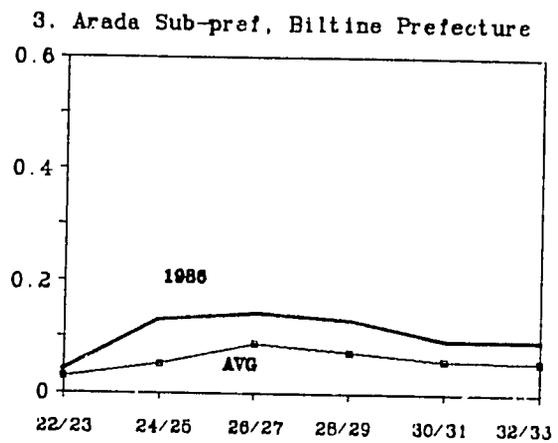
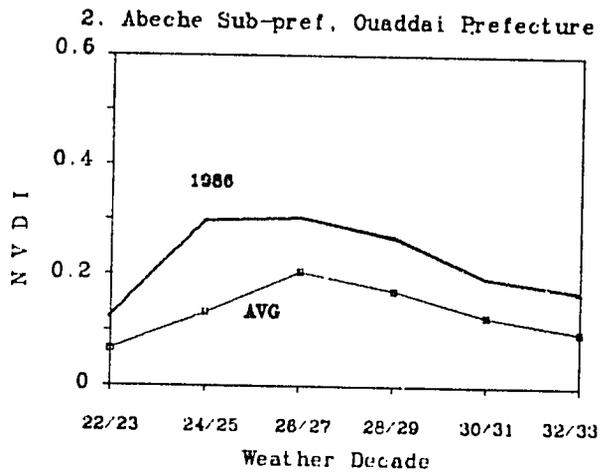
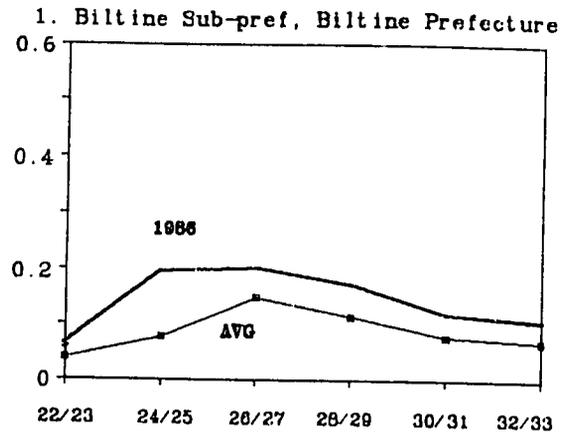
October 11-21

5

FIGURE 1a: CHAD

NVDI, July 1-October 31, '86
vs '81-'85 Average

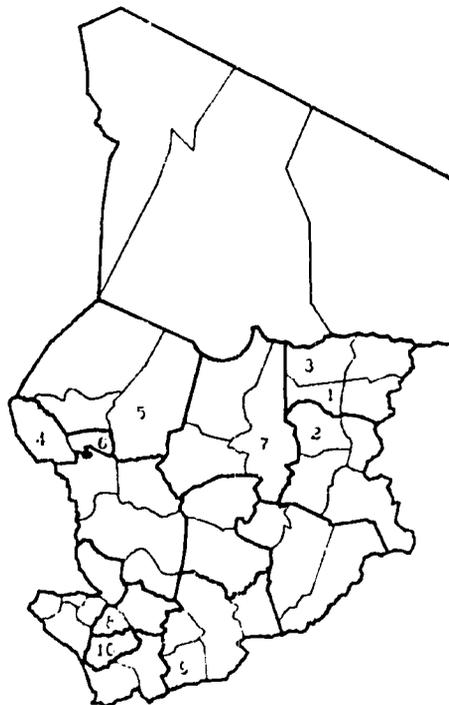
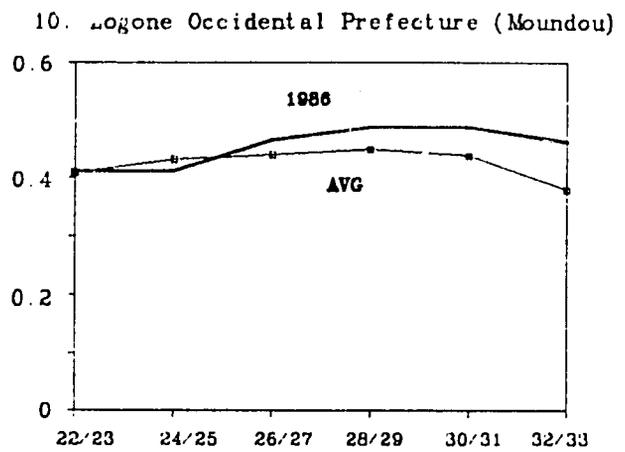
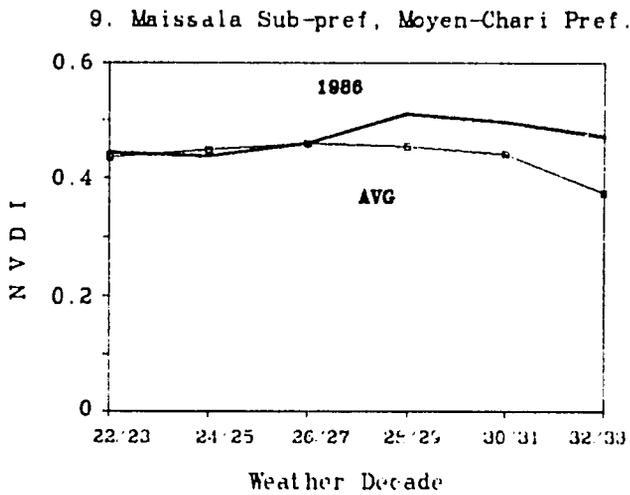
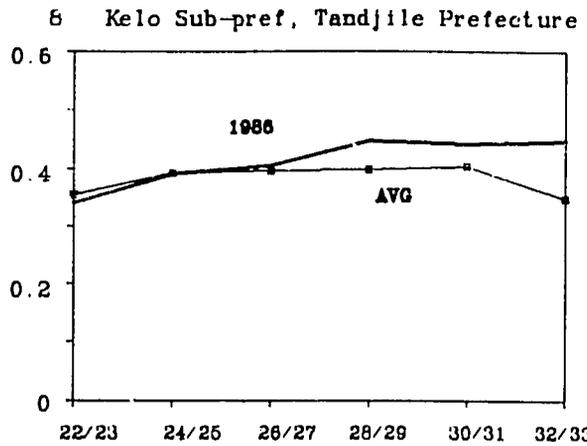
WEATHER PERIODS DECADES COVERED	PERIODS COVERED
22 & 23	July 1-20
24 & 25	July 20-Aug 10
26 & 27	Aug 11-31
28 & 29	Sept 1-20
30 & 31	Sept 21-Oct 10
32 & 33	Oct 11-31



Source: NOAA; NASA; USGS
FEWS/PWA, Nov 1986

NVDI, July 1–October 31, '86 vs '81–'85 Average

WEATHER DECADES	PERIODS COVERED
22 & 23	July 1–20
24 & 25	July 20–Aug 10
26 & 27	Aug 11–31
28 & 29	Sept 1–20
30 & 31	Sept 21–Oct 10
32 & 33	Oct 11–31



Source: NOAA; NASA; USGS
FEWS/PWA, Nov 1986

FOOD FLOWS/ NEEDS

The current assessment by the AID Mission is that the combination of this year's harvest plus current in-country stock plus current commercial imports plus pledged donor assistance will be sufficient to meet Chad's 1987 food grain needs with a surplus of about 6,000 MT of grain for some 4,617,000 people. Using a similar population figure, but a different per capita grain ration and the higher harvest estimate, FAO has estimated a production deficit of 126,000 MT. This would lead to a food deficit of 48,250 MT if the Mission's in-stock and pipeline figures were followed. As there are many unknowns in Chad, the truth probably lies between the two. Rather than emergency food deficits, however, the problem in Chad this year will be to transport surplus foods to deficit areas.

The European Agency for Development and Health (AEDES) Early Alert System has indicated that the people in many of the grain deficit areas still have livestock which can be sold to purchase grain. The GOC and the donor community therefore has the choice of transporting the grains for marketing or for food-for-work programs.

POPULATIONS AT-RISK

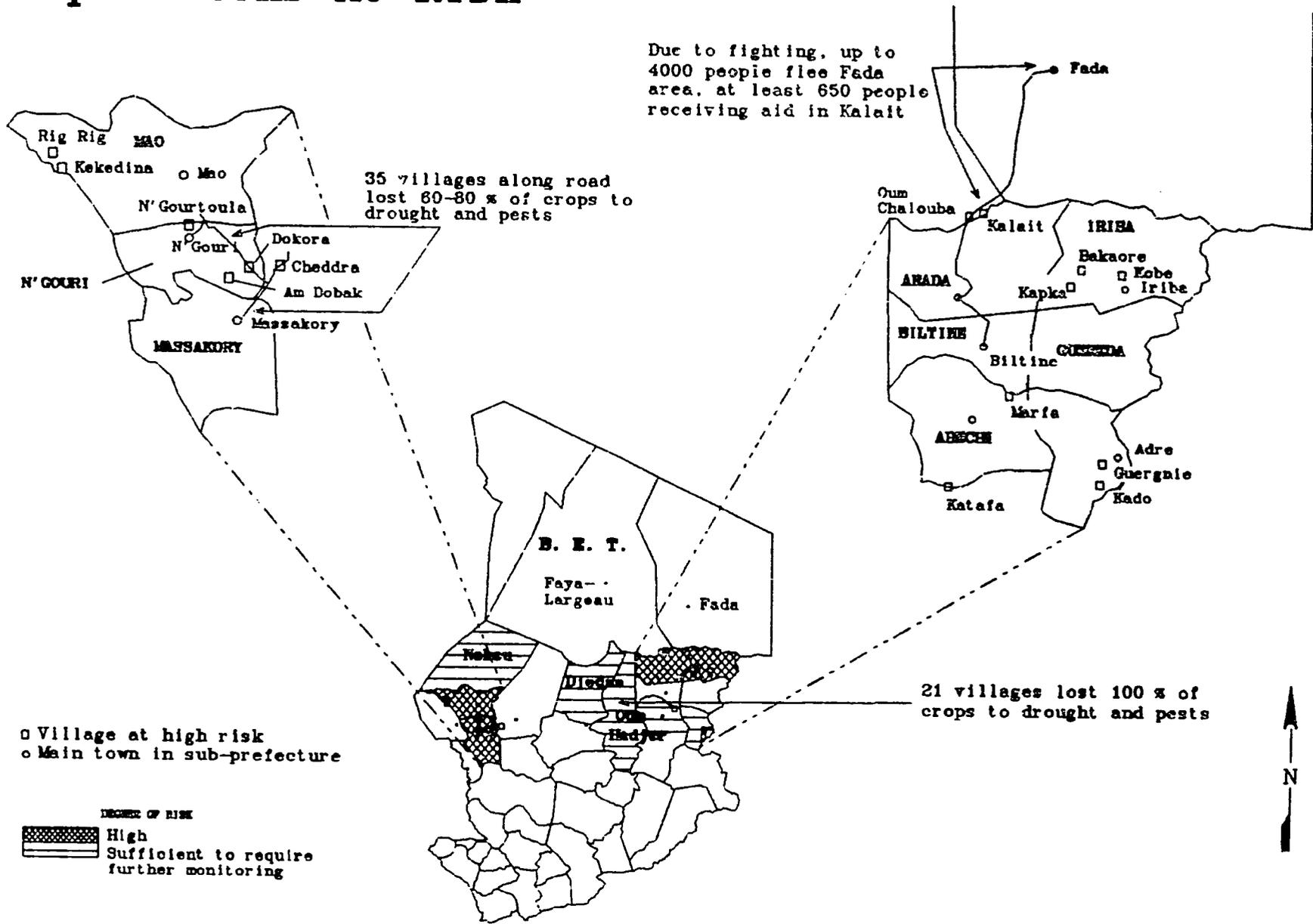
This year's harvest is excellent, in terms of the harvests of the past few years. Even so, AEDES estimates that 150,000 Chadians are 'at-risk' following poor harvests. Some 35 villages along the Massakory-Cheddra--N'Gouri road in Kanem Prefecture are reported to have lost 60 to 80 percent of their crops. In Oum Hadjer Sub-prefecture, Batha Prefecture, 21 villages are reported to have lost 100% of their crops. AEDES has cited specific villages and cantons in Kanem, Lake, Biltine and Ouaddai Prefectures which are, in isolation, at a high risk of nutritional deficiency (Map 3).

In addition to the 150,000 people at-risk of nutritional deficiencies due to poor harvest, there are a possible 4000 people at-risk as a result of fighting among anti-GOC factions in the Fada area of B.E.T. (Borkou, Ennedi & Tibesti) Prefecture. People displaced by the fighting, which began in mid-October, are congregating in Kalait (Map 3), a GOC controlled town on the B.E.T. - Biltine border. As of October 24, 650 people had registered with the Red Cross in Kalait in order to receive emergency aid. The rest of the displaced people were thought to be straggling in on foot over the 200 plus kilometer walk from Fada.

Non-grain food-aid, medicines, blankets and thatch mats supplied by LICROSS, WFP, and SECADEV were flown into Kalait on October 22 by the GOC. A second plane-load of

clothing, blankets, etc. was delivered by the French on November 5. CARE/Chad transported 144MT of cereals to Biltine for transshipment to Kalait on Italian trucks. These same trucks are to be used to transport those fleeing Fada on foot to Kalait, once the grain is delivered. There is a good chance that some troops of the anti-government factions will resort to banditry, further destabilizing eastern Chad in the area of the 16th parallel.

Populations At-Risk



Source: Mission Cables; AEDES FEWS/PWA, Nov. 1986

Appendix

Table 1: Approximation of Locations and Areas Treated for Grasshoppers

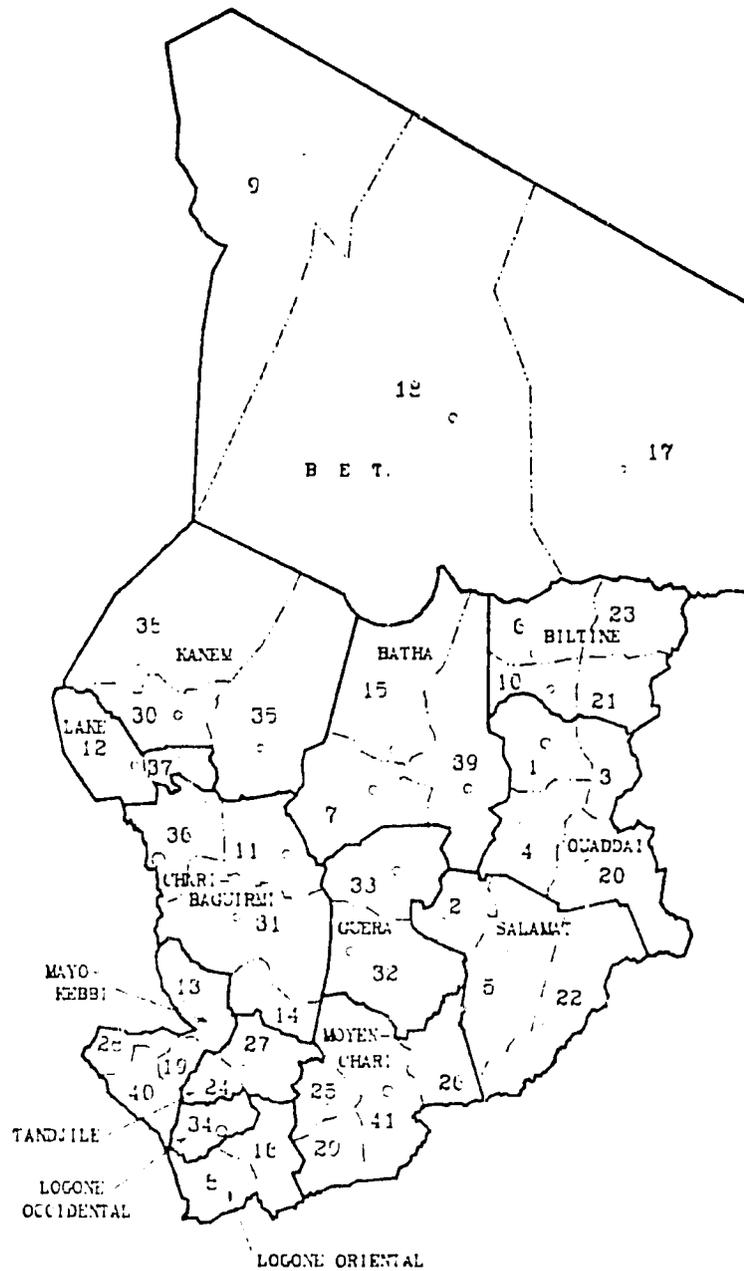
Location Town	(PREF)	Air (ha)	Ground (ha)	Total (ha)
				window of opportunity lost
Bol	BILTINE (LAK)	59,000	5,000	
	KANEM			
Massenya	(ChB)	10,000	1,200	
Massakory	(ChB)			
N'Djamena	(ChB)			
Abeche	(OUA)	14,600?	1,000	
Adre	(OUA)			window of opportunity lost
Ati	(BAT)	15,000		
Oum Hadjer	(BAT)			
Abou Deia	(SAL)			
Am Timan	(SAL)	4,350		
Bongor	(MK)	10,750		
Bokoro	(ChB)	15,500	170	
Mongo	(GUE)			
Koumra	(MCh)	8,000?	15,500	
Total Area Treated*		139,825	34,397	174,222

Source: Mission cables

*The total figures are taken from cables # NDJAMENA 6347 and NDJAMENA 6529. The location figures were imputed from individual Mission Grasshopper Situation Reports.

Sub-prefectures

- | | |
|-----------------------------|-----|
| 1. Abeche | OUA |
| 2. Abou Dala | SAL |
| 3. Adre | OUA |
| 4. Am Dam | OUA |
| 5. Am Timan | SAL |
| 6. Arada | BIL |
| 7. Ati | BAT |
| 8. Balbokoum | LOr |
| 9. Bardal | BET |
| 10. Biltine | BIL |
| 11. Bokoro | ChB |
| 12. Bol | LAK |
| 13. Bongor | MK |
| 14. Bousso | ChB |
| 15. Djedaa | BAT |
| 16. Doba | LOr |
| 17. Fada | BET |
| 18. Faya-Largeau | BET |
| 19. Gounou | MK |
| 20. Goz Belda | OUA |
| 21. Guereda | BIL |
| 22. Haraze | BIL |
| 23. Iriba | BIL |
| 24. Kelo | TAN |
| 25. Koumra | MCh |
| 26. Kyabe | MCh |
| 27. Lai | TAN |
| 28. Lere | MK |
| 29. Maïssala | MCh |
| 30. Mao | LAK |
| 31. Massenya | ChB |
| 32. Melfi | GUE |
| 33. Mongo | GUE |
| 34. Moundou | LOc |
| 35. Moussoro | KAN |
| 36. N'Djamena/
Massakory | ChB |
| 37. N'Gourï | LAK |
| 38. Nokou | KAN |
| 39. Oum Hadjer | BAT |
| 40. Pala | MK |
| 41. Sarh | MCh |



o Main Town in Sub-prefecture

Source: 1966 Map in Eng. Two Undated Maps in Fr.
Map Authors Unknown

FEWS PWA, Nov. 1960