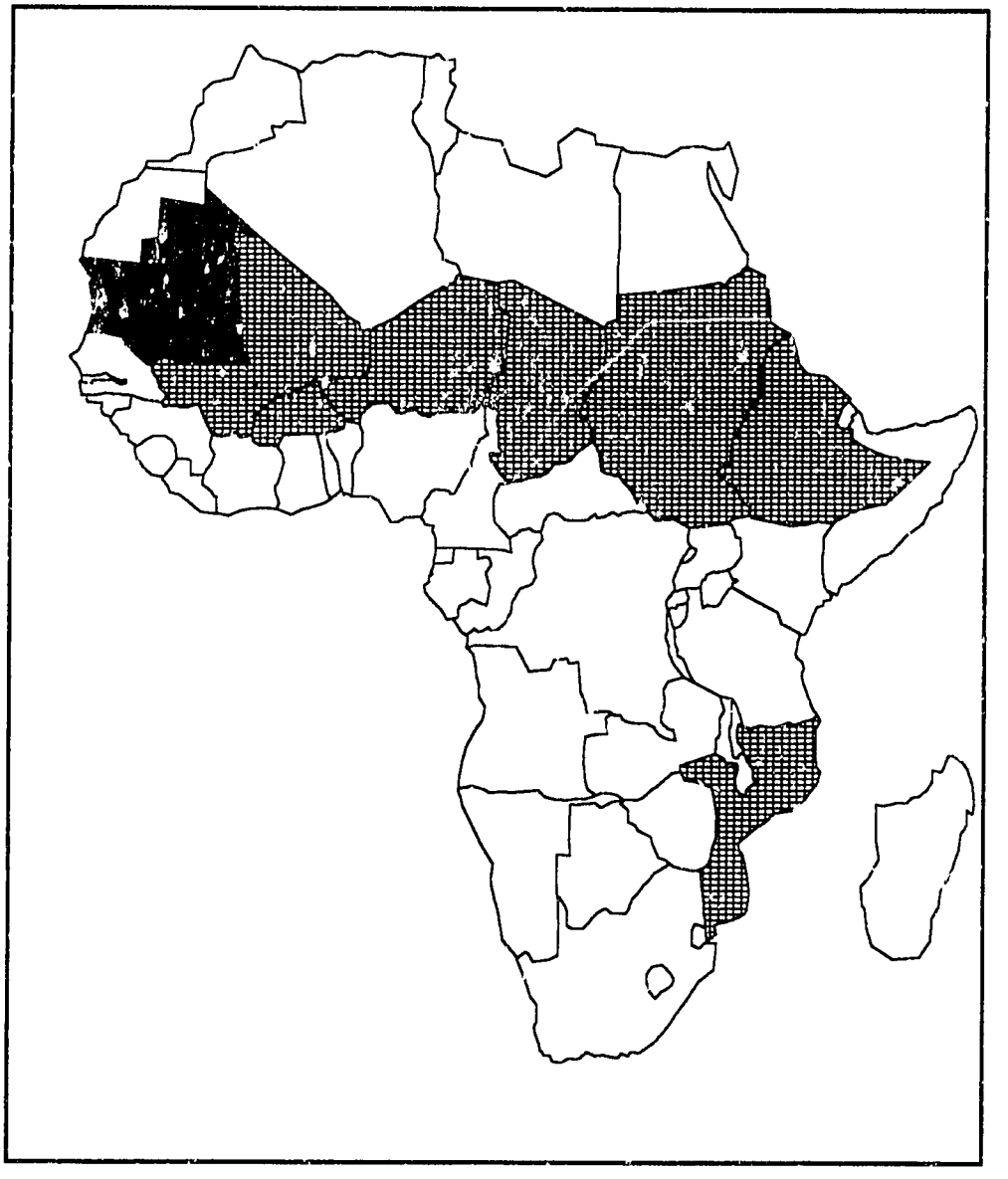
PN-AAY-135

Report Number 14/15

September 1987

FEWS Country Report

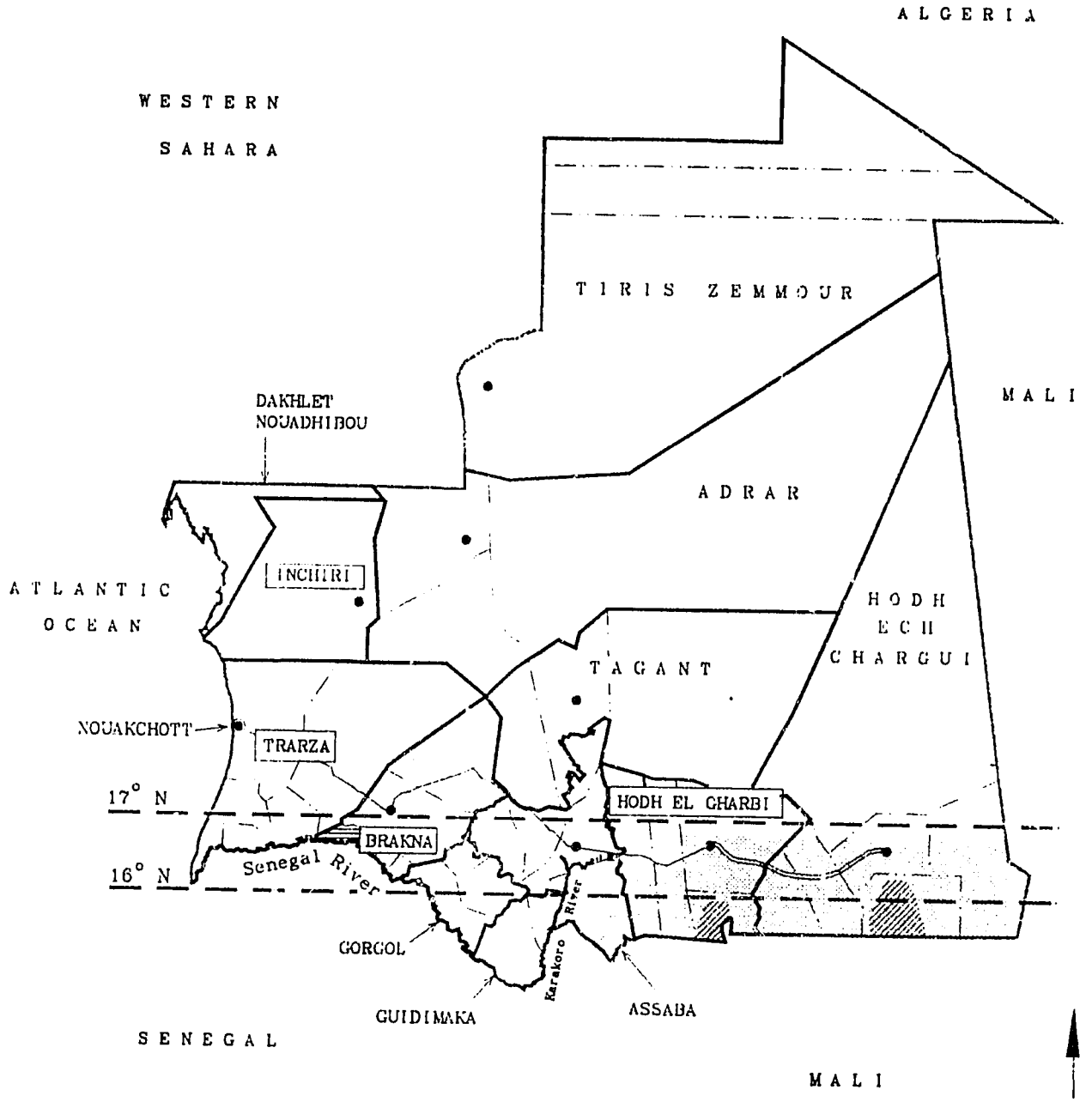
MAURITANIA



Africa Bureau
U.S. Agency
for International
Development

MAP 1 · MAURITANIA

Summary Map



High rates of child malnutrition in villages surveyed.

Dry spell in August threatens crops

Satellite imagery suggests recent decline in vegetative vigor

FEWS/PWA, September 1987

Famine Early Warning System Country Report

MAURITANIA

Rains Stalled

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

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

Contents

List of Figures

SUMMARY

Rainfail in 1987 has been inadequate in most of Mauritania. The few areas where rain fell consistently through July (in the southeast) have experienced a dry spell since the beginning of August. These are also the areas which depend most heavily on direct rainfall for crop production. Since the southwest of the country is just entering its main growing season the effect of the current dry spell on Mauritania's total grain production cannot be predicted, but even in the best of times Mauritania is not self-sufficient in grains. One benefit of the dry spell is that grasshopper populations have been kept to a minimum. An April/May nutrition survey has shown high rates of child malnutrition in 19 of 24 villages studied in Boghe Department, Brakna Region, within one to two months after the end of the local harvest.

Issues

- The appearance of high rates of child malnutrition only two months after harvest indicates a fragile situation. How the situation should be addressed depends in part on whether the problem in Boghe Department is recently emergent or long term.

Key Events

- The rains started on time in July in the southeast, but have been inconsistent throughout much of the country. For rainfed crops to succeed, the rains must return by the end of August.

- Grasshopper ground control supplies have been pre-positioned. Plans for a Phase II aerial operation are being finalized for the contingency that rains return in strong quantities and grasshoppers move north from Mali and Senegal, as happened last year.

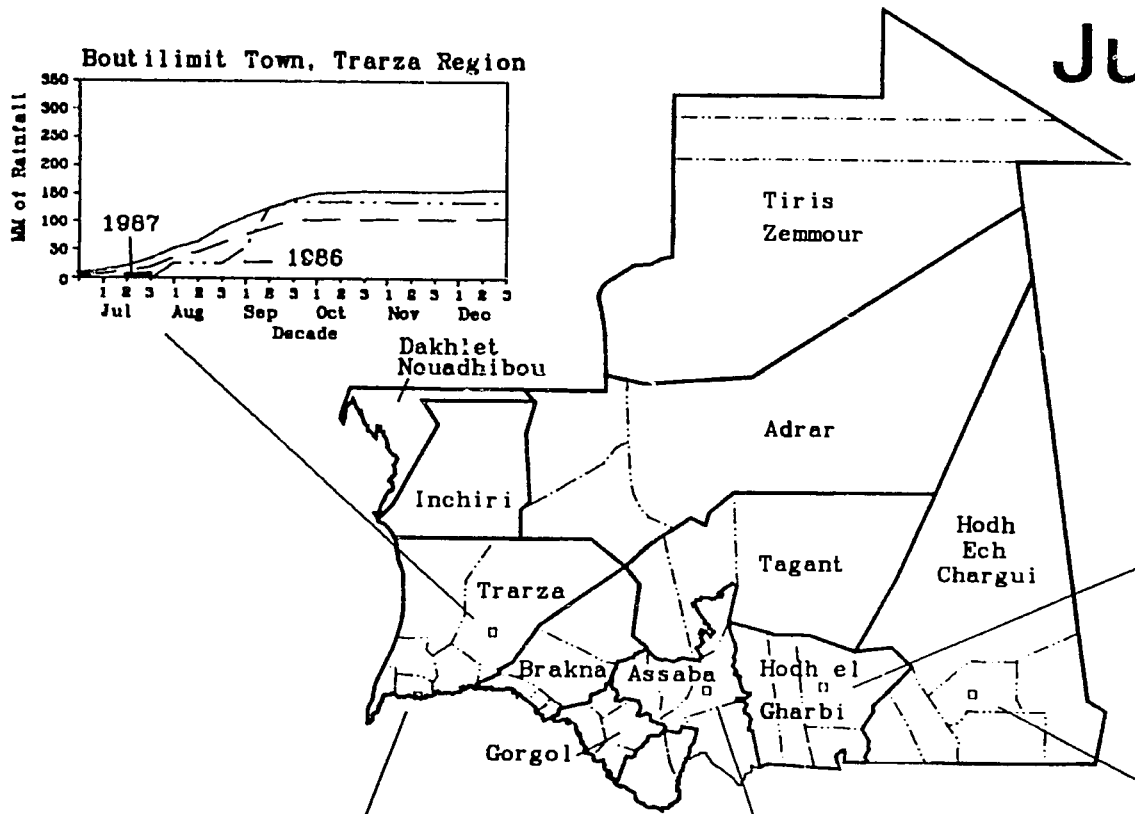
CROP PRODUCTION

Rainfall

Throughout much of Mauritania's agricultural zone there has been insufficient rainfall to support crops. Only Hodh el Gharbi Region and the south of Hodh ech Chargui Region have received consistent rainfall this year. At the end of July, the two main rain stations in these Regions had received between 110 and 125 mm of rain, 100 to 135% more rainfall than the thirty year norm, and close to 200% more rainfall than the average cumulative rainfall for the end of July for the past 17 years* (Map 2). Estimates made from weather satellite data, however, indicate that no rain fell in these areas from the end of July through mid-August.

*Please note that the average cumulative rainfall for the past 17 years is lower than the 30 year average cumulative rainfall for all of the Mauritanian rain stations for which FEWS has data.

Rainfall Through July 1987

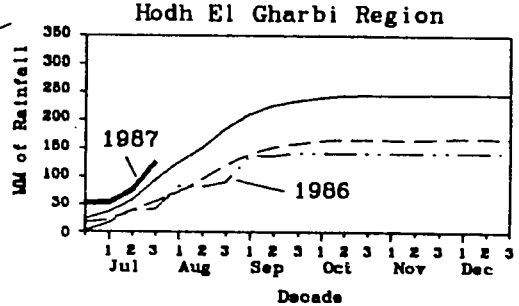


Graph Legend

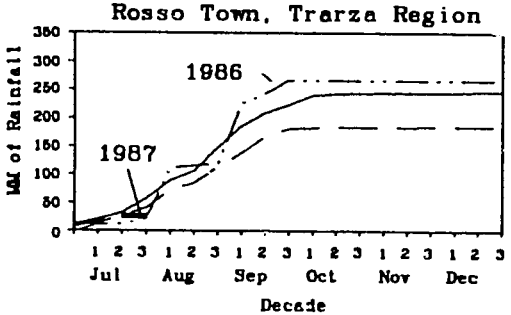
- 30 Year Average
- 17 Year Average
- 1986
- 1987

Boutilimit Town, Trarza Region

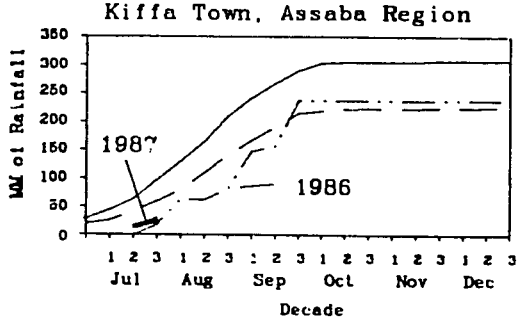
Ayoun El Atrous Town, Hodh El Gharbi Region



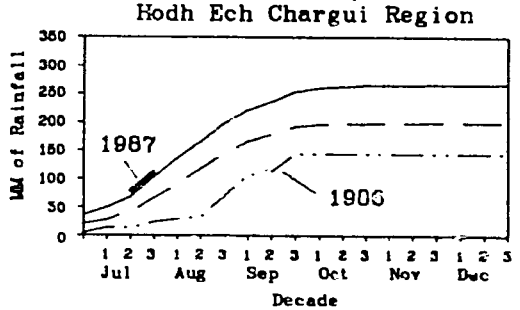
Rosso Town, Trarza Region



Kiffa Town, Assaba Region



Nema Town, Hodh Ech Chargui Region



FEWS/PWA, September 1987

This dry spell bodes ill for rainfed agriculture, which in 1986 produced some 80% of the area's grains. If reseeding becomes necessary (assuming seed is available), even short cycle crops would require well timed rains through the end of October, which rarely happens. The other 20% of that area's harvest was produced using a "lowland" agriculture strategy.* This second strategy, which allows crops to better survive dry spells, has been utilized more frequently in recent years than previously. The greater the area that farmers have chosen to plant in lowland crops this year, the more crops will survive the current dry spell, should it end soon. It will not be known, however, what proportion of 1987 crops are "lowland" until the initial crop assessments are made. Last year, the initial assessments were completed in October.

Mauritania's southwest has experienced little rainfall this summer (Map 2). Cumulative values there are well below both the 30-year and 17-year averages, and in fact are close to those of last year, when a very poor harvest was being predicted.** The majority of the agriculture in the southwest depends on the Senegal River, however, both through irrigated and flood recessional crops. Planting done under these two strategies usually does not begin until October or November, after the Senegal River's annual flood. The Senegal River's flow as of August 10 is less than last year's (494 cubic meters per second versus 608 cubic meters per second), but it is still much too early to sound any sort of alarm for this area.

Satellite Imagery

Satellite imagery*** for the first ten days of August suggests the presence of vegetation along Mauritania's southern border from Maghama Department, Gorgol Region,

*In lowland farming, the raised water table and runoff from rains are trapped in low lying basins, greatly increasing the soil moisture available to crops planted in and next to the basins. In Mauritania, sorghum and maize are most often grown using this strategy.

**In fact, the 1986 harvest was one of the best in recent years. This was due in large part to increased rains in September and the subsequent high flood of the Senegal River. A second though minor factor was the introduction of a new method for estimating production. It may be that estimates of previous harvests were overly conservative.

***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.

east to the western edge of Amourj Department, Hodh ech Chargui Region (Map 3). This zone is well south of the rain stations named above. At the same time, the imagery suggests a decline in vegetative vigor from the previous ten days in the area of Touil (just west of the notch in the Mali border of Kobenni Department, Hodh el Gharbi Region) and in western Amourj Department (Hodh ech Chargui Region). The first area was the site of the one confirmed post-harvest food shortage in Mauritania for 1987. This area especially should be closely monitored through the growing season.

The bulk of south-central and southeastern Mauritania shows higher vegetative vigor compared to last year at mid-August (the exceptions being the areas noted above, where vegetative vigor has declined since the end of July, see Figure 1). Considering the poor values of NDVI in August 1986, however, this is small encouragement. Compared to 1985, a relatively strong year in terms of NDVI, many areas of south-central and southeastern Mauritania show lower NDVI this year (Figure 2). In fact, the only areas that are doing better this year than they were in 1985 are in Hodh ech Chargui Region: southern Djigueni Department and the area of eastern Amourj-western Bassikounou Departments (see Map 5 for locations).*

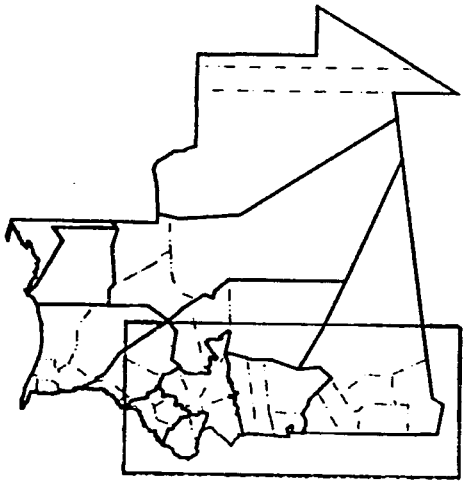
Pests

With the low rainfall, zones favorable to Senegalese grasshoppers have been shrinking since mid-July. By mid-August, the only areas providing environments suitable for grasshoppers were centered in the extreme south and southeast of the country, where adults have reached the egg laying stage. Grasshoppers hatching in the area of the 17th parallel have experienced high mortality caused by dry conditions.

Additional donor assistance and the time made available by unfavorable conditions for grasshoppers have made the transport of ground control pesticides into the interior less of an issue. Continued weak and erratic rains would greatly aid the ground control campaign, making grasshoppers of little threat to crops this year (although perhaps leaving few crops to be damaged). On the chance that the rains do improve, as happened unexpectedly in September 1986, contingency plans are being made by the Government of the Islamic Republic of Mauritania (GIRM) and the donor community for a Phase II aerial control campaign. Plans

*Please note that the large areas of increased NDVI north of 17 Degrees North are more probably due to the presence of haze in 1987 than to the presence of any sort of vegetation.

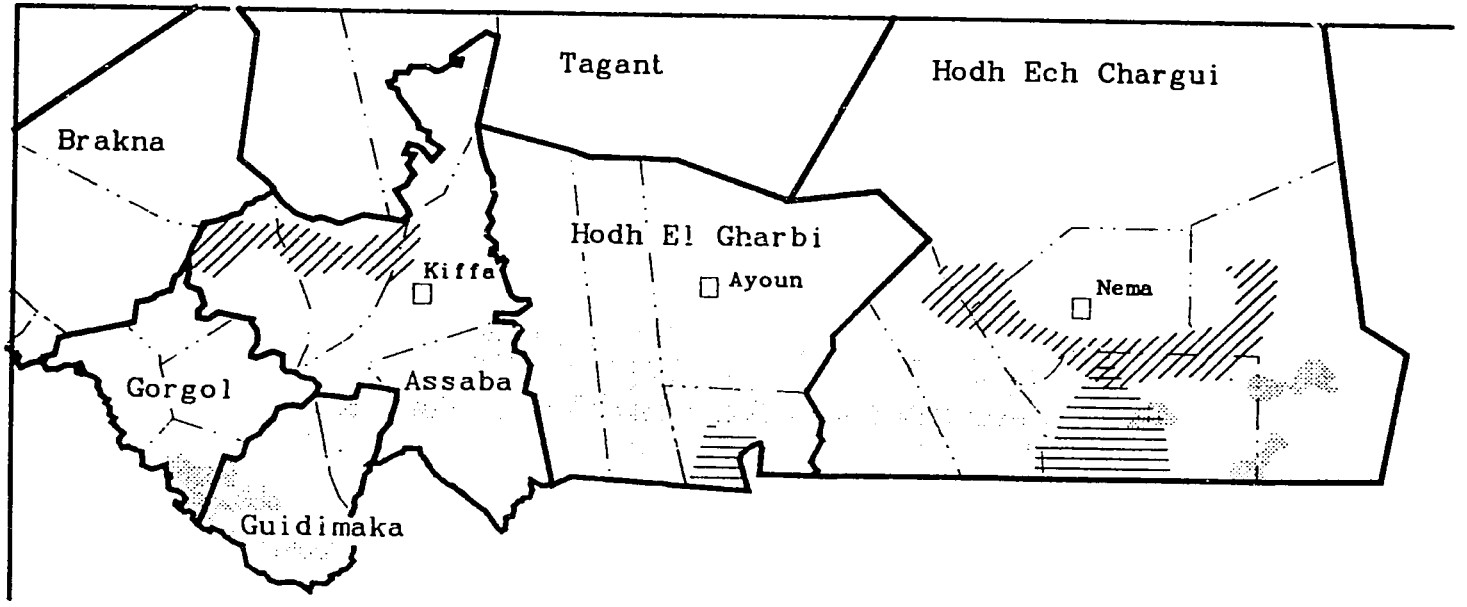
Vegetation As Of Early August



Imagery suggests presence of vegetation

Decline in NDVI from July 21–31 to August 1–10

NDVI levels lower in 1987 Aug. 1–10 than they were for the same period in 1984



FEWS/PWA, September 1987

Figure 1:

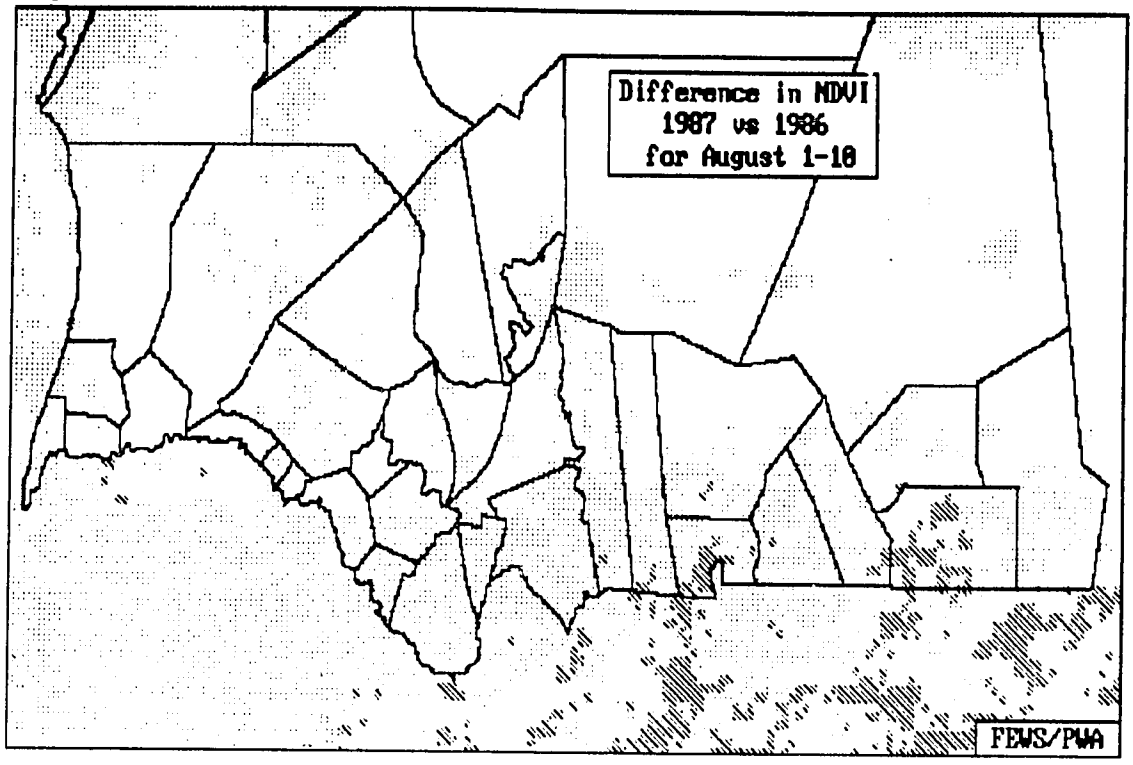
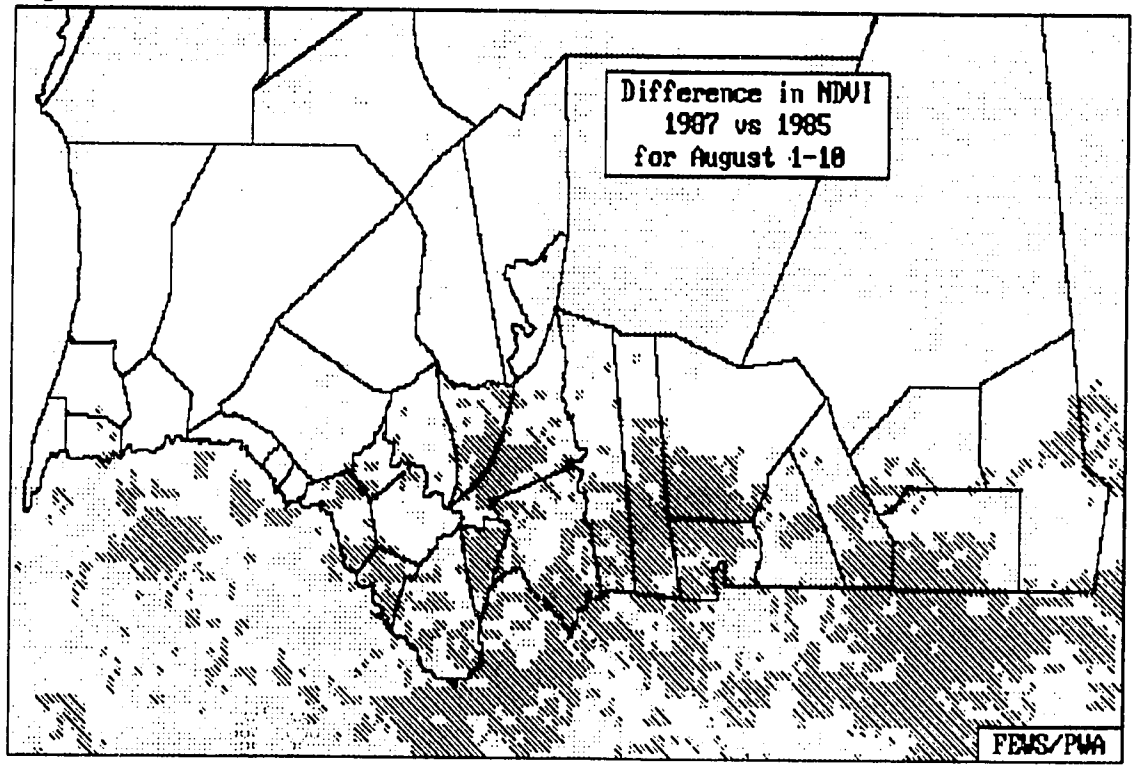


Figure 2:



Key:

Clouds | Negative Change <—— | No Change | ——> Positive Change

include the assessment of air field in the southeast for the sorts of aircraft they can support, and exploration of the possibility of joint Mauritania/Mali and Mauritania/Senegal operations.

Implications

The Food and Agriculture Organization (FAO) reported that, for 1987, 155,000 MT of imports are required (including an expected 77,000 MT of food aid). These imports satisfy 51% of the country's grain needs at an annual per capita consumption rate of 165 kg, assuming a 1987 population of 1,827,800. The converse of this statement is that the relatively good 1986/87 harvest covers less than 50% of the country's 1987 needs.* Of this amount, southeast Mauritania produced 28% of the total 1986/87 harvest, the south-central area 47%, and the southwest produced 22% of the harvest. Of these sectors, only the southeast depends chiefly on rainfed agriculture.

A return of rains through October, as happened last year, cannot be counted upon. If the situation does not improve, southeast Mauritania, where last year's good harvest met between 25% and 50% of the local grain needs, can expect a very poor harvest. The south-central areas, which depend on a mixture of chiefly lowland and flood recessional strategies, should be able to withstand the dry spell a bit longer. Mauritania's southwest has not yet entered its main growing season.

NUTRITION

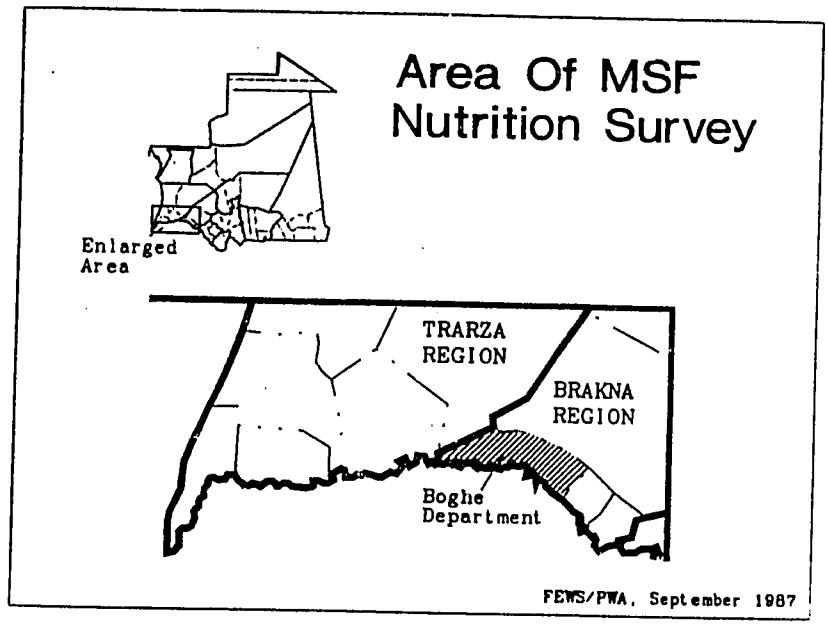
In April and May of 1987, the private voluntary organization Doctors Without Borders (MSF) completed a nutrition survey of 1,168 children in 24 villages in Boghe Department, Brakna Region (Map 4). For the 24 villages overall, 17% of the children were found to be severely** malnourished. In 11 of the 21 villages where more than 30 children were surveyed, MSF found more than 15% of the children to be severely malnourished. In eight more of those villages, between 10% and 15% of the children were severely malnourished; in two of the 21 villages, more than 25% of the children were severely malnourished. These are alarm-

*The consumption figure used historically by the donor community (including FAO) for programming food aid has been 165 kg of grain per person. The estimated 1986 national grain consumption divided by the estimated 1986 population equals 123 kg per person, per FEWS/Mauritania, November 1986. Using this second rate, expected 1987 commercial and food aid imports cover 60% of the 1987 food grain needs.

**For this report, a child is considered severely malnourished if it weighs less than 80% of the standard weight for its height.

ing percentages, especially when appearing so soon after the harvest season (which in this area ends in March for irrigated and flood recessional crops -- 70% of Brakna Region's 1986 grain production.)

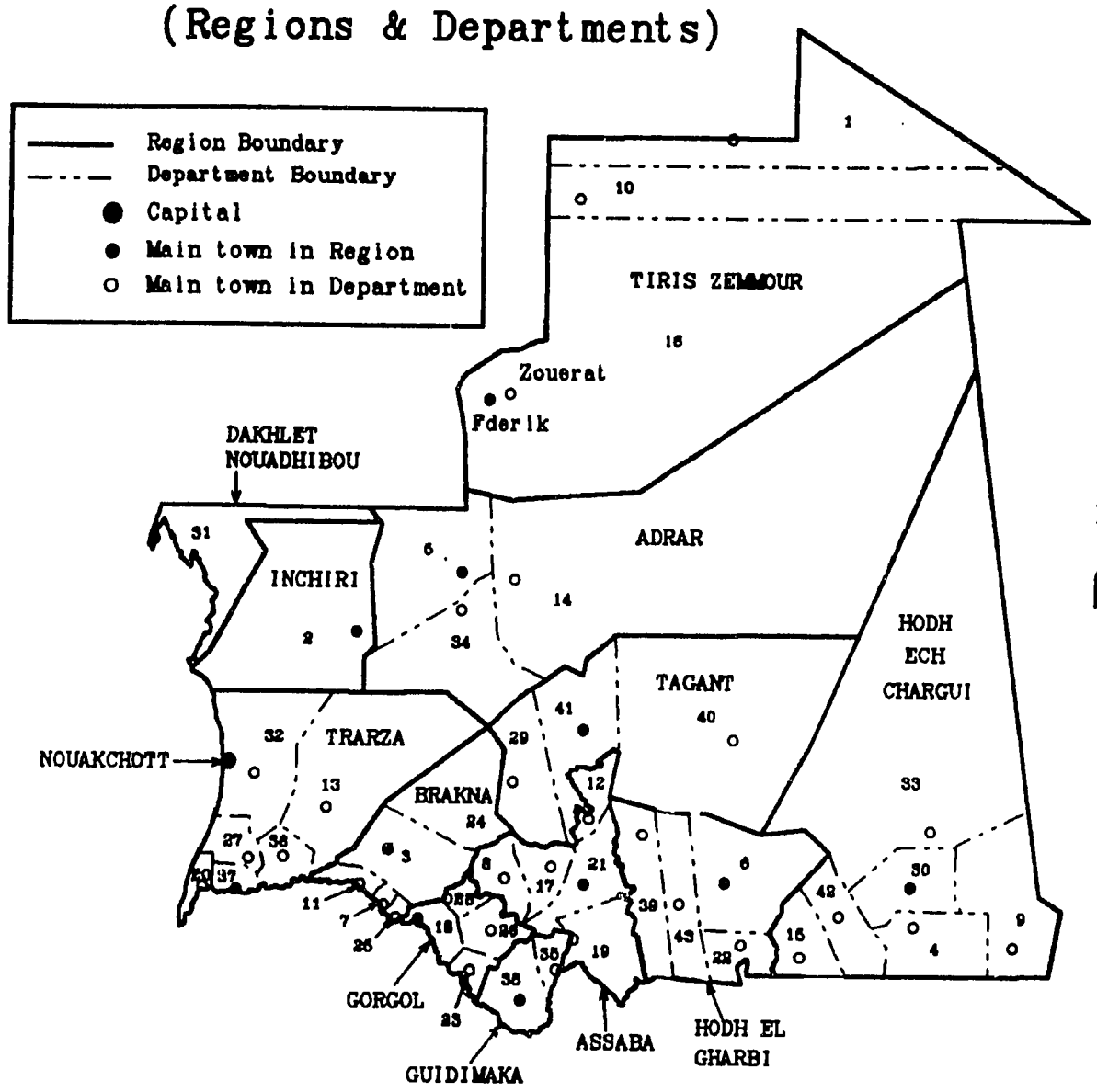
Map 4:



MAP 5: MAURITANIA

Administrative Units

(Regions & Departments)



Departments	RGN	Department	RGN	Department	RGN
1. Ain Ben Tili	TZ	16. Fderik/Zouerat	TZ	30. Nema	HC
2. Akjoujt	IN	17. Guerou	AS	31. Nouadhibou	DN
3. Aleg	BR	18. Kaedi	GO	32. Oued Naga	TR
4. Amourj	HC	19. Kankossa	AS	33. Oualata	HC
5. Atar	AD	20. Keur Massene	TR	34. Oujeft	AD
6. Ayoun el Atrous	HC	21. Kiffa	AS	35. Ould Yenge	GU
7. Bababe	BR	22. Kobenni	HG	36. Rkiz	TR
8. Barkewol el Abiod	AS	23. Maghama	GO	37. Rosso	TR
9. Bassikounou	HC	24. Magta Lahjar	BR	38. Sellbabi	GU
10. Bir Mogrein	TZ	25. M'Bagne	BR	39. Tamchekket	HG
11. Boghe	BR	26. Mbout	GO	40. Tichit	TA
12. Boumdeid	AS	27. Mederdra	TR	41. Tidjikja	TA
13. Boutilimit	TR	28. Monguel	GO	42. Timbedgha	HC
14. Chinguetti	AD	29. Moudjeria	TA	43. Tintane	HG
15. Djiguenl	HC				

Source: FEWS/Mauritania 1986; IGN 1980
FEWS/PWA, February 1987

This is the fourteenth/fifteenth in a series of monthly reports on Mauritania 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 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 via in-country FEWS Public Health Advisors. 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, this report owes a debt to various offices of the US Agency for International Development (AID), Department of Agriculture (USDA), National Aeronautical and Space Administration (NASA), National Oceanic and Atmospheric Administration's National Environmental Satellite, Data, and Information Service (NOAA/NESDIS), the NOAA/NESDIS Assessment and Information Services Center (AISC) and USAID/Nouakchott; the Government of the Islamic Republic of Mauritania (GIRM) Crop Protection Service (CPS) and Food Security Commission (CSA); AGRHYMET; the Cooperative Institute for Applied Meteorology (CIAM) at the University of Missouri; the UN Food and Agriculture Organization (FAO); and Doctors Without Borders (MSF).

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.