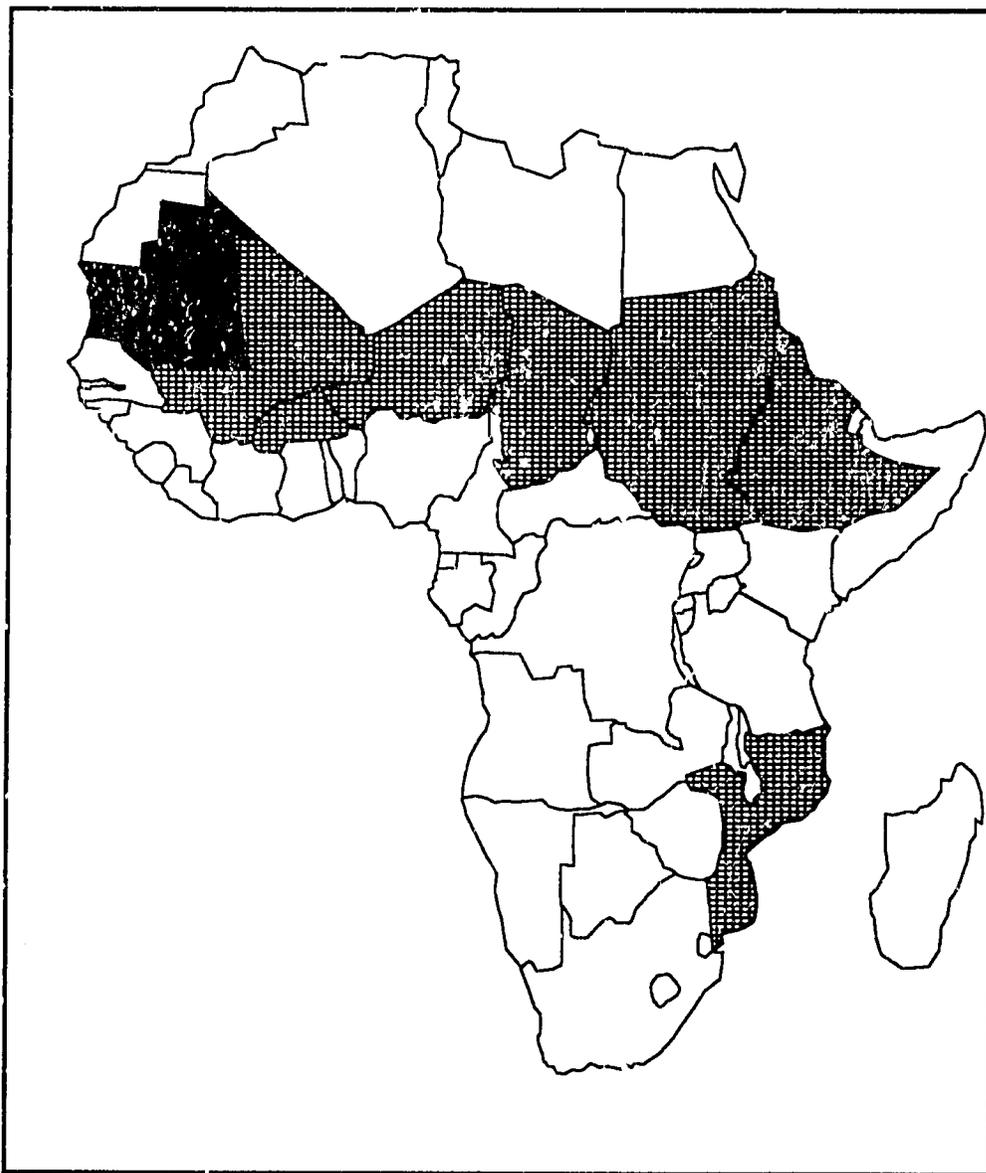


Report Number 5

October 1986

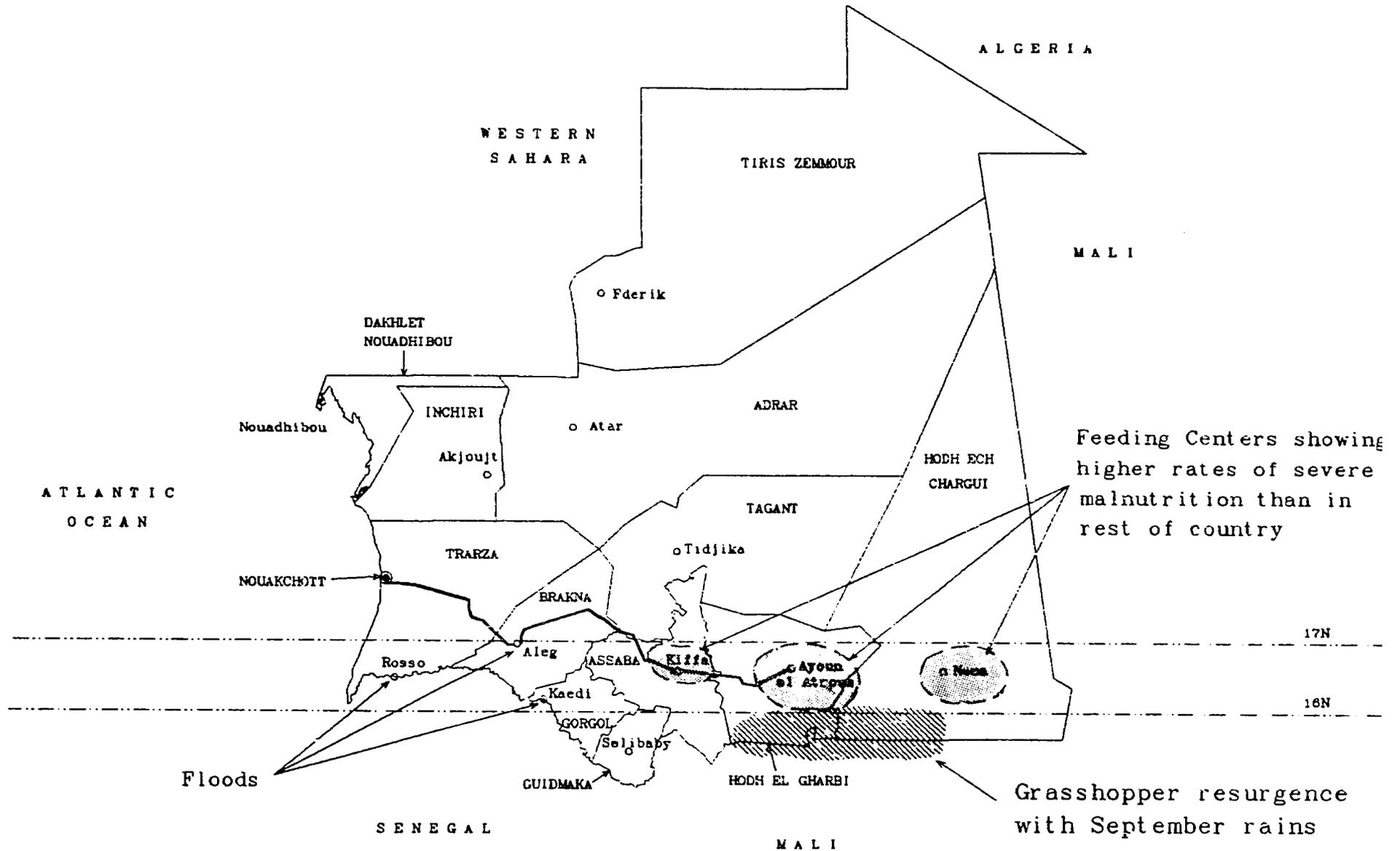
## FEWS Country Report

# MAURITANIA



Africa Bureau  
U.S. Agency  
for International  
Development

Map 1  
 MAURITANIA: Summary



Map: FEWS/PWA, October 1986

# MAURITANIA

## Grasshoppers, Intense Rains

---

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

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

### Contents

#### Page

i	Introduction
1	Summary
1	Rainfall and Vegetation
2	Map 2
3	Agriculture
4	Figure 1
5	Map 3
6	Pests
7	Map 4
8	Map 5
10	Food Flows/Needs
10	Health and Nutrition
11	Map 6
12	Population At-Risk
13	Appendix I

## INTRODUCTION

This is the fifth of a series of monthly reports issued by the Famine Early Warning System (FEWS) on Mauritania. 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 fifth Mauritania 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/Nouakchott the Government of the Islamic Republic of Mauritania Ministry of Agriculture, Ministry of Public Health, and Center for the Study of Demographics and Society; AGRHYMET; Louis Berger International, Inc. (draft report); and CARE, Medecins sans Frontieres, Catholic Relief Service, World Vision International, and Terre des Hommes.

---

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

## **SUMMARY**

The rains finally came to Mauritania in September after several months of below normal rainfall. Late-planted crops will benefit from the rains, but it may be too late for early-planted rainfed crops, and the rains may not last long enough for the most recently planted rainfed crops. The rains have brought with them a resurgence of grasshoppers in the southeast, causing a state of disaster to be declared by the US Ambassador. A high percentage of children being brought to three feeding centers in Assaba, Hodh el Gharbi, and Hodh ech Chargui Regions are severely malnourished. Further information is needed to determine if the situation is critical.

### **Issues**

- o Yield estimates based on the late rains vary from good (NOAA/NESDIS - US National Oceanic and Atmospheric Administration/National Environment Satellite, Data, and Information Service) to very good (FAO - UN Food and Agriculture Organization). The latter is unlikely, dependent on the rains continuing through October into November.
- o Grasshoppers currently infest pastureland, but may invade croplands, which are regenerating after the September rains.

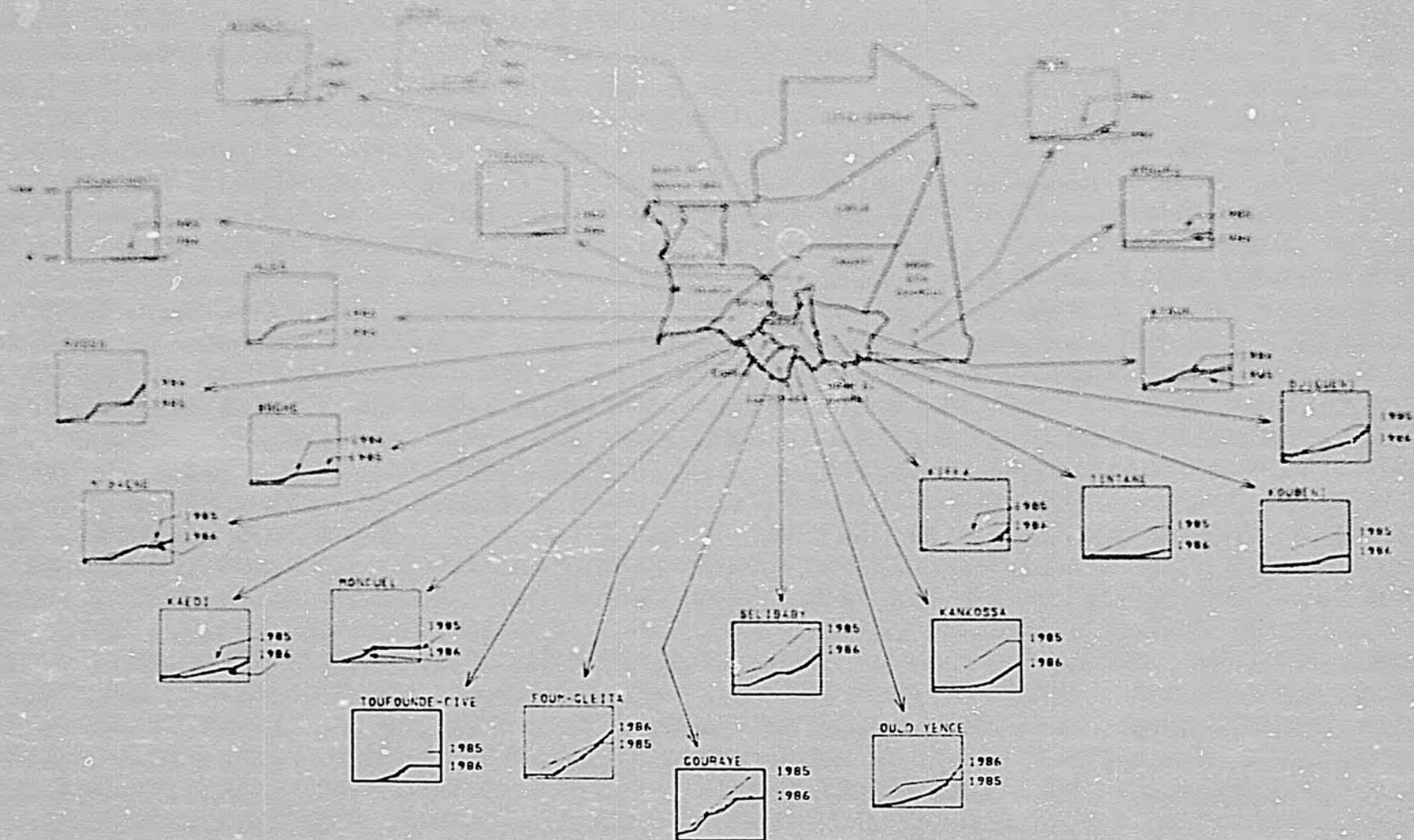
### **Key October Events**

- o The rainy season usually comes to an end in October.
- o Following the good September rains, planting of flood recession and irrigated crops should start on time in October and early November.
- o The grasshopper control campaign should finish in the majority of areas to be treated.
- o USAID/Nouakchott, WFP (UN World Food Program), and the GIRM (Government of the Islamic Republic of Mauritania) Committee for Food Security are working out the fiscal year 1987 food deficit for Mauritania.

## **RAINFALL AND VEGETATION**

Rainfall from the beginning of the season in April through the end of August was only 60% of that received for same period in 1985, except for two or three places in the south and the Atar and Akjoujt areas. Rainfall during September was higher than September rainfall in 1985, but has not yet brought cumulative rainfall for 1986 above total annual rainfall for 1985 in most areas (Map 2). The rain came in heavy squalls, causing floods that brought the Senegal River to 8.2 meters at Kaedi, Gorgol Region and destroyed housing near Aleg in Brakna Region and Rosso in Trarza Region. The GIRM considers the total of 1986 cumulative rainfall to be sufficient

Map 2  
 MAURITANIA Cumulative Rainfall July 1 - September 10, 1986 vs 1985\*



for the entire country's water needs for the year. There are many spots in Guidmaka, Assaba and Hodh el Gharbi Regions, however, which are still experiencing lower than normal rains. (Map 2).

The September rains improved moisture conditions in the principal crop growing areas, benefitting growth of late-planted crops, but came too late for early-planted crops, which have been stressed by early season dryness. Vegetation is still lagging behind 1985 vegetation growth, especially in Assaba and Hodh el Gharbi Regions. On the other hand, greenness in southern Hodh ech Chargui Region is expanding and vegetation development is noticeable (Figure 1).

## **AGRICULTURE**

The rains have brought lush grasses and well fed cattle to Kiffa and other areas in Assaba between 16N and 17N. Because of the September rains, the GIRM now expects a harvest as high or higher than last year's. As of October 20, FAO is predicting a net cereals harvest for 1986 at 186% of the 1985 net harvest. This is a startling change from the previous FAO/WFP prediction, based on pre-September rains, of 35% to 53% of the 1985 net harvest. On the other hand, NOAA/NESDIS, forecasting for rainfed cereals only, puts this year's millet and sorghum yield at just below last year's.

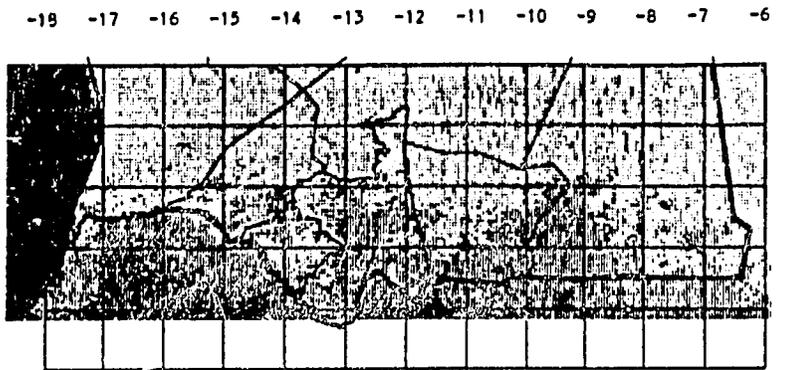
The overall (rainfed, flood recession and irrigated) net cereal production for 1985 was estimated at 57,000 MT following a 29% pest, storage, transport, and milling loss. The 1985 gross yield of 475 kilograms per hectare (kg/ha) was one of the best Mauritania has seen in the last 20 years. For 1986, FAO forecasts a gross grain yield of 500 kg/ha over a total of 245,000 harvested hectare with a subsequent net harvest of 106,000 MT. The acreage cited is 145% of that quoted by GIRM for 1985 and 163% of the area planted in 1984. The net harvest figure reveals a presumption of a 13% loss to pests and other causes. FAO's forecast of gross grain yield is within the realm of possibility, but its expectations for acreage and loss are ambitious. FAO's detailed analysis is to be available by November 17.

NOAA/NESDIS is not as optimistic as FAO with its rain-based forecast for the 1986 millet and sorghum (rainfed crops) yield. Half of the regions considered were assigned yields higher than experienced in 1985. (Map 3; Table 2, Appendix I).

**Figure I**  
**Mauritania Vegetation Image, September 11-20**



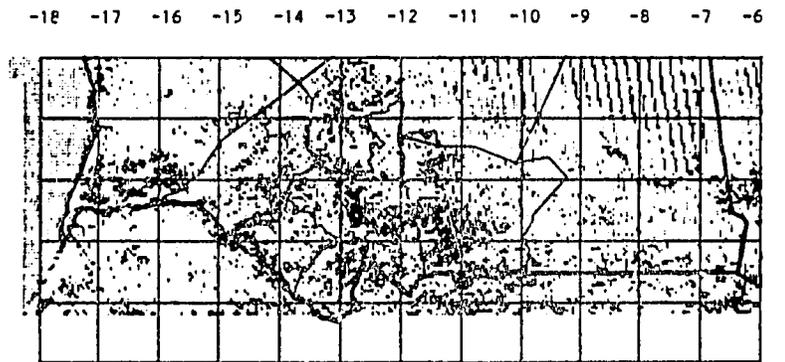
1346	5.0276%	Clouds
13762	51.4045%	Bare Soil
6275	23.4387%	Sparse Vegetation
1947	7.2725%	Vegetation
21	0.0784%	Heavy Vegetation
3421	12.7783%	Water, Mud



Vegetation Image, September 11-20, 1986



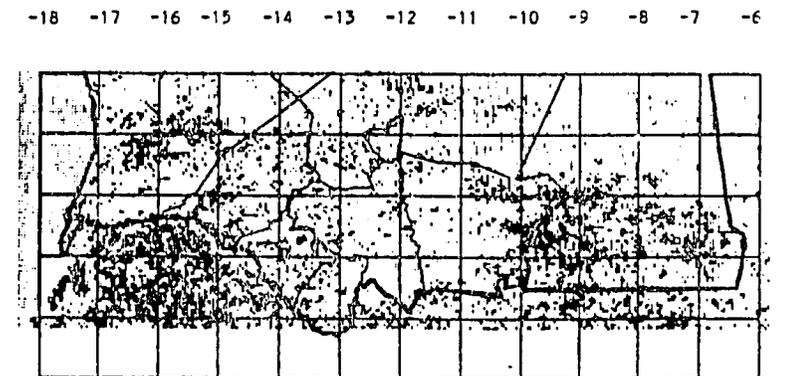
15783	58.9534%	No Change, or Negative Change
5244	19.5876%	Clouds in Either Image
3985	14.8850%	1 Category Improvement
1227	4.5831%	2
399	1.4904%	3
101	0.3773%	4
33	0.1233%	5 or more Category Improvement



Negative Vegetation Image, September 11-20, 1985-1986



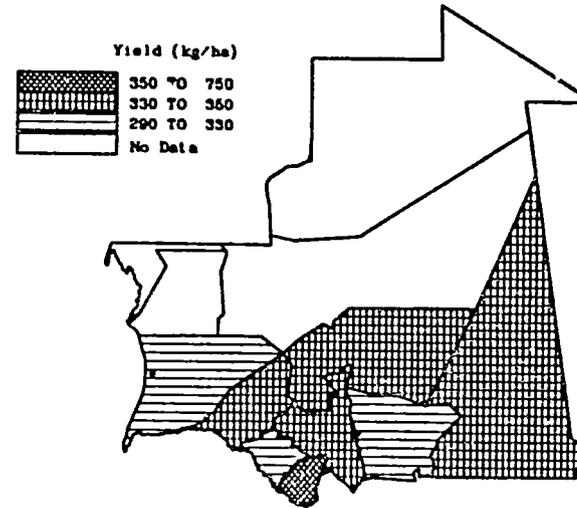
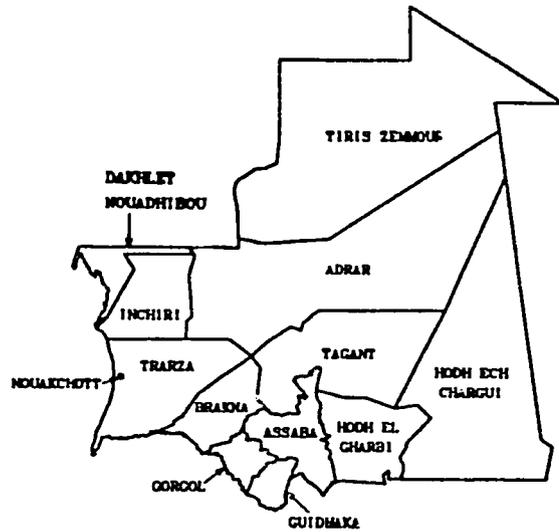
16716	62.4384%	No Change, or Positive Change
5244	19.5876%	Clouds in Either Image
3693	13.7943%	1 Category Decline
827	3.0890%	2
213	0.7956%	3
71	0.2652%	4
8	0.0299%	5 or more Category Decline



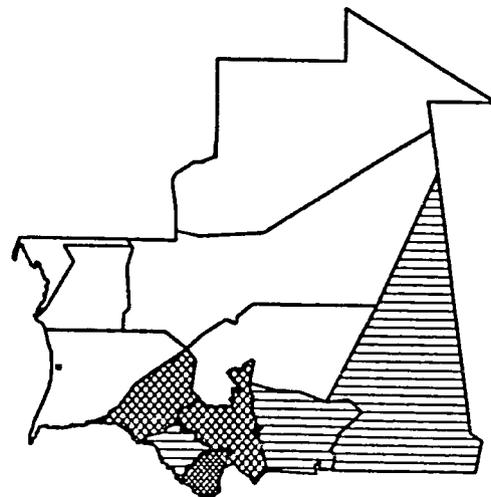
Positive Vegetation Image, September 11-20, 1985-1986

Map 3

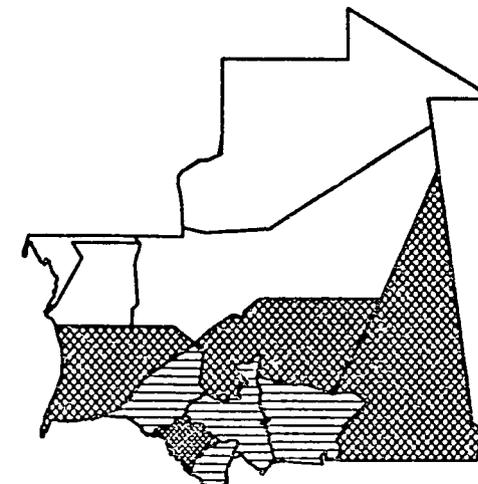
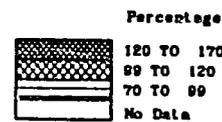
# MAURITANIA: NOAA/NESDIS Forecast Millet/Sorghum Yield



1986 Yield



1986 Millet/Sorghum Yield as Percentage of 1984 Yield



1986 Forecast as Percentage of 1985 Yield In Each Region

Using the 1985 figures for acreage planted in cereals in the rainfed areas and the NOAA/NESDIS forecast, Mauritania would produce 35,800 MT of rainfed millet and sorghum, 9% less than the rainfed cereals product in 1985. If last year's loss pattern holds, net production would only be 13,216 MT (Map 4; Table 2, Appendix I). It is possible that, due to heavy grasshopper infestations, loss rates in Trarza, Gorgol, Guidimaka, and the Hodhs may be higher this year than last. Whether the rains continue past October, allowing the most recently planted crops to mature, will also affect the outcome of this year's harvest. Most often, the rains begin to taper off at this time.

Irrigated and flood recessional grains, which made up 51% of last year's harvest, may fare better. The Senegal River flood will enable cultivation of recessional crops in the Gorgol, Brakna and Trarza Regions. As of late September, the rivers had reached the same height as had been reached by late September last year, which bodes well for recessional and irrigated croplands. If the same acreage planted and loss-to-pests conditions hold as held last year, recessional and irrigated cereals could add 32,000 MT to the above net estimate, bringing the net grain harvest to 45,200 MT.

The GIRM has taken advantage of the rains to move people back from Nouakchott to their villages in agricultural lands. These volunteers receive free transport, and food-aid that is to last until harvest. This movement should increase the amount of recessional and irrigated lands under cultivation.

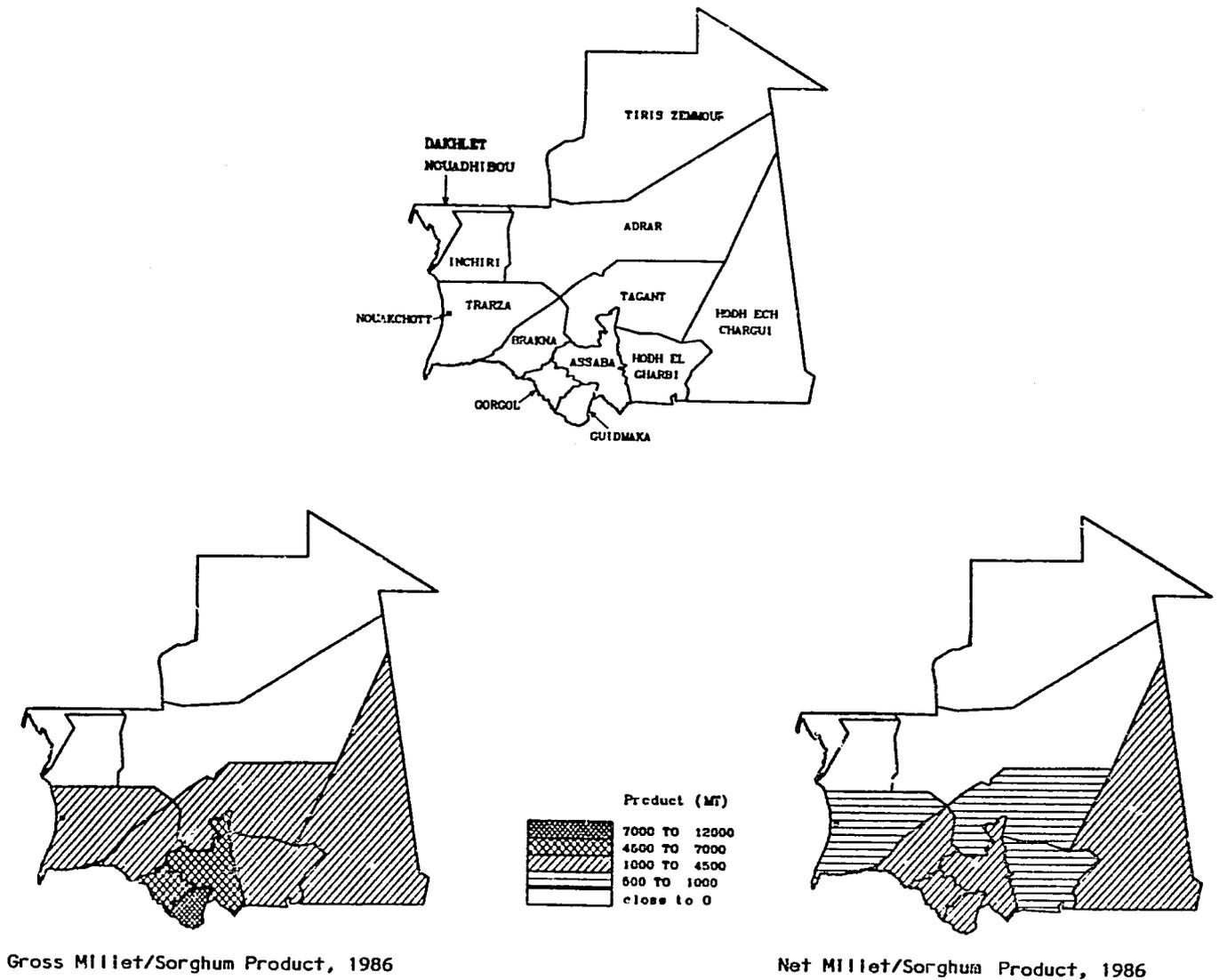
#### **PESTS Grasshopper Situation**

In early September, most of the grasshoppers seen were in pasturelands, in part because there were few crops to infest. In areas downstream of Gouraye (western Guidimaka Region along the Senegal River, Map 5), farmers reported planting two to five times due to grasshopper damage. The repeated plantings could also be due to sporadic rainfall. As soon as pasture became available after the good rains in September, the grasshoppers moved from planted fields to grasslands in these southwestern areas.

Since mid-September there has been a build-up of *O. senegalensis* in a 20-30 km band starting at the GIRM/Mali border, from the Assaba/Hodh el Gharbi boundary to the Nema longitude (Map 5). The Mauritanian Crop Protection Service estimates the average grasshopper density to be 60-75 per square meter over a total of 160,000 ha. Counts for specific areas are given in Table 1.

Map 4

MAURITANIA: 1986 Millet/Sorghum Product\*



Gross Millet/Sorghum Product, 1986

Net Millet/Sorghum Product, 1986

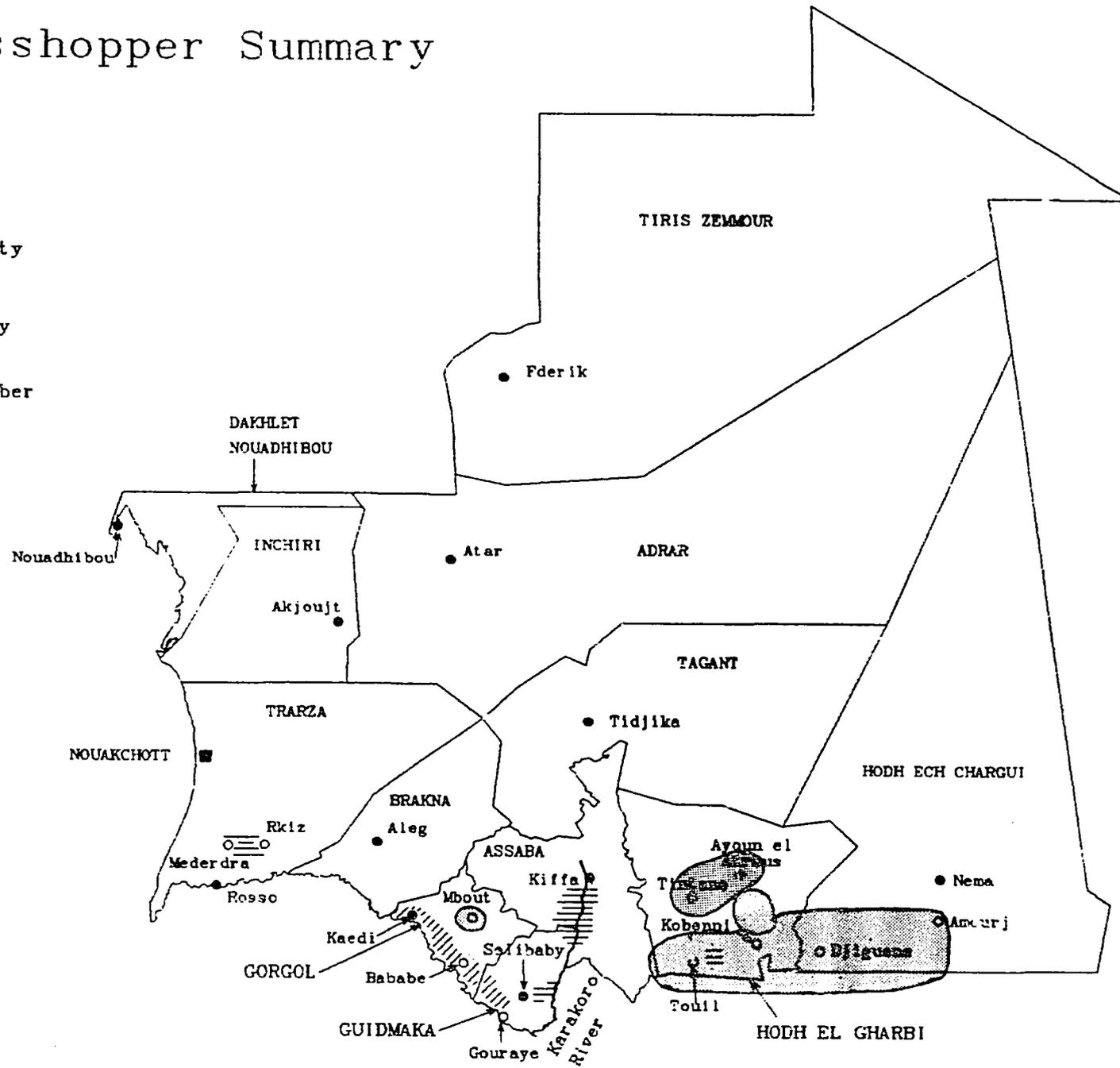
7

Map: FEWS/PWA, October 1986

\*See Table 2, Appendix I, for forecast and production figures

# MAURITANIA: Grasshopper Summary

- Main town in Region
- Grasshoppers in high density (more than 100/sq.m.)
- ▨ Grasshoppers in low density (50/sq.m. or less)
- ▩ Area treated in mid-September



Map: FEWS/PWA, October 1986

**Table 1: Most Recent Grasshopper Counts**

<b>Region/Location</b>	<b>Density (per sq.m.)</b>
Assaba	
Kiffa	50
Gorgol	
Bababe	60-80
Mbout	>100
Guidimaka	
Selibaby	70
Hodh el Gharbi	
Ayoun/Tintane	80-150
North Kobenni	70->100
Touil	15-30
Trarza	
Mederdra	40-50
Rkiz	40-50

**Source: Mission Cables; FAO/Mauritania**

The infestation in southeastern Mauritania is much larger than expected, exceeding available control capabilities. The US Ambassador has declared a state of disaster in Mauritania following a request for aid from the GIRM due to the upsurge in grasshopper populations. Emergency funds are to be used to purchase airplane fuel and lubricant, and insecticides. The areas requiring treatment include pasture, rainfed and recessional crop areas. Treatment and treatment plans as of September 22 are given in Table 2.

**Table 2: Acreage in Affected Areas**

<b>Region</b>	<b>Treated (ha)</b>	<b>To Be Treated (ha)</b>	<b>Total Cultivated (ha)</b>
Assaba	13,080	5,000	12,000
Brakna	300	8,000	10,000
Gorgol	19,580	12,000	11,000
Guidimaka	-	13,000	7,000
Hodh ech Chargui	21,500	68,500	14,000
Hodh el Gharbi			11,000
Trarza			12,000

**Source: Mission Cables; FAO/Mauritania**

## **FOOD FLOWS/ NEEDS**

Food deficits are a structural problem in Mauritania, making well more than 100,000 MT in food-aid necessary each year. Using the January 1986 GIRM total population figure of 1,792,320, the net cereal production for 1985 was 31 kg per capita, a shortfall of 134 kg per person. Mauritania will most likely produce less grain this year than it did in 1985, thus requiring even more structural food-aid. USAID/Nouakchott, WFP and the National Committee for Food Security are developing a methodology for calculating the 1987 food deficit (see Table 1 in Appendix I for the food import and stock status as of July 31, 1986).

One issue involved in the calculation of food deficit is the number and location of people who should receive food-aid. In July of 1985, CARE distributed food-aid to 100% of Mauritania's population. The CARE lists from this distribution have been used to derive the percentage of total population in each region. These percentages have been used to calculate the regional populations, based on an estimated total September population of 1,827,786 including an estimated September population for Nouakchott of 344,224.

The population has shifted from Nouakchott to the surrounding Trarza Region, from the riverine regions of Gorgol and Guidimaka northward to the regions containing the one paved road, and from Tiris Zemmour Region southward. When compared with the population distribution supplied by the GIRM in January of 1986 (Map 6; Table 3, Appendix I), the shifts are quite striking. The rains were very late this year, so that during July, the traditional planting season, there were few crops to hold people in one place. It would have been most rational for farmers to move to the central regions to seek easier access to food aid, or to move south into Senegal to seek employment. As good rains improve the agricultural prospects, the regional population distribution may shift back toward that estimated by the GIRM in January.

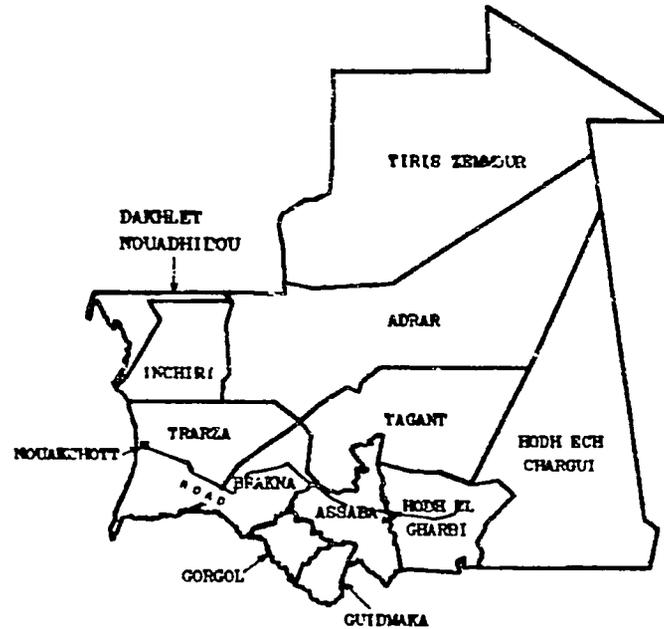
## **HEALTH AND NUTRITION**

The health situation in Mauritania remains much the same. Cholera, a problem since April, persists in several towns, especially Nouakchott, Nema (Hodh ech Chargui Region), and Kiffa (Assaba Region). Hodh ech Chargui has seen 3.3% of cholera cases die, Assaba 3.0%, and Nouakchott, which has the most consistent records, saw 1.9% die. The situation is under control, however, and in Kiffa the number of cases has been strongly reduced.

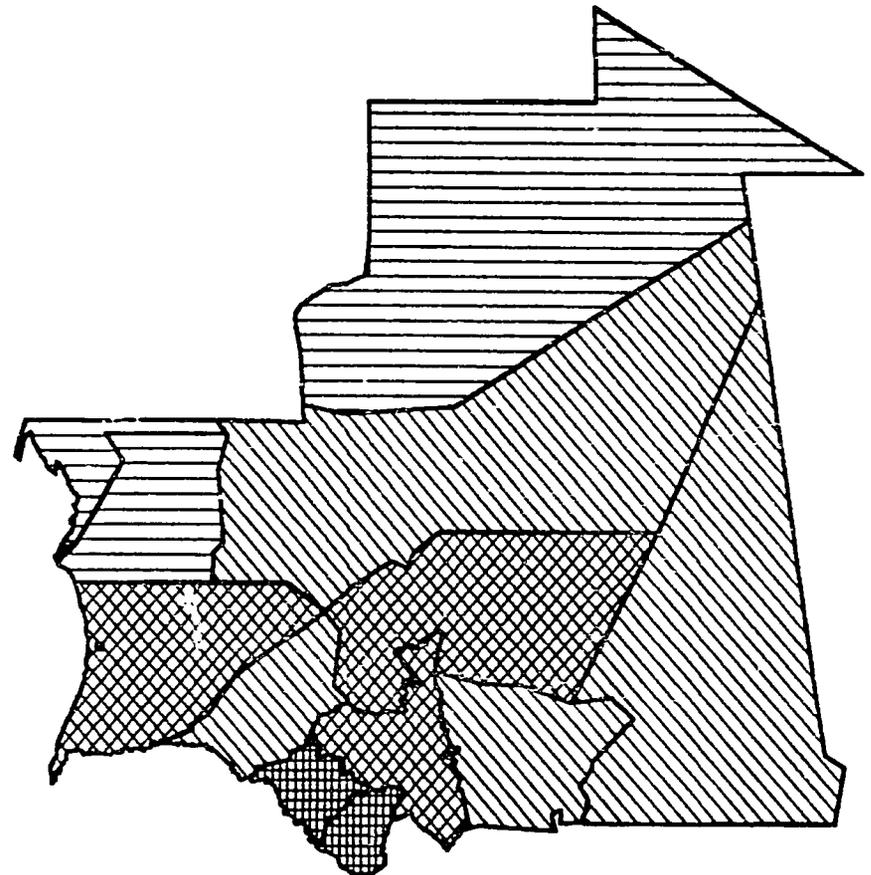
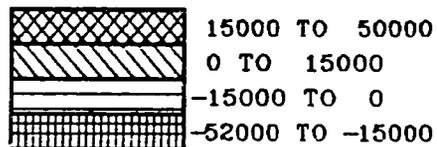
The reported incidence of measles this year has been miniscule. This can be ascribed in large part to the measles vaccination campaign carried out last year.

Map 6

MAURITANIA: Population Shift from 1985 to July, 1986



Change in Population\*



\*See Table 3, Appendix I, for population figures

Malnutrition is endemic in Mauritania. Measurements of malnutrition among Mauritanian children, however, are made only on those who are recipients at feeding centers for malnourished children, skewing the picture drawn from the data toward the grimmer end of the spectrum. The most extensive malnutrition information comes from Catholic Relief Services (CRS) feeding centers, which use a standard weight for given age measure for judging nutritional status. A child's age must often be estimated, so feeding center statistics could be biased according to the interviewer's perceptions. These statistics, even with their drawbacks, provide the most complete picture of trends in malnutrition in Mauritania.

The CRS data show that over 10% of children fed per month were severely malnourished in at least one month from October, 1985 through July, 1986 in 22 out of 30 feeding centers. More than 10% of children fed at the feeding centers at Nema, Hodh ech Chargui Region, and Kiffa, Assaba Region were severely malnourished for every month during this period. More than 15% of the children fed at the center at Ayoun el Atrous, Hodh el Gharbi Region, were severely malnourished for all the months the center was surveyed before it closed (October 1985 through February 1986).

The towns of Nema, Kiffa, and Ayoun el Atrous may act as magnets to people nearby who require nutritional interventions, thereby increasing the apparent ratio of severely malnourished to healthy children. The data probably does not accurately represent the situation among the towns populations. The data does, however, indicate a need to continue nutritional supplements. More information is required to determine whether further intervention is needed.

## **POPULATIONS AT-RISK**

In Mauritania, anyone receiving food aid has been deemed to be nutritionally at-risk. At times, food-aid distributions have included 100% of the population. Mauritania lacks the natural resources with which to trade for food imports and suffers a chronic shortage of rain, which prevents sufficient domestic food production. Thus the question becomes not when and where to distribute food aid, but whether special interventions should be made for specific populations above and beyond the interventions already underway.

While the malnutrition data from Nema, Kiffa, and Ayoun el Atrous may exaggerate current conditions, they do warrant a closer look at the nutritional status of the people in these areas.

## Appendix I

**Table 1: WFP/PAM Food Import and Stock Figures as of 31 Jul 86 (MT)**

<b>Commodity</b>	<b>Instock 11/1/85</b>	<b>Arrived 12/85-07/86</b>	<b>Pledged for 8/86-11/31/86</b>	<b>Total 1986</b>
<b>Free(CSA,CRM,GOV&amp;PAM)</b>				
Wheat	38650	25042	900	64592
Rice	352	611	110	1073
Maize	7997	2824	2000	12821
Sorghum	878	4776	1388	7042
Flour	<u>190</u>	<u>706</u>	<u>306</u>	<u>1202</u>
<b>Subtotal</b>	<b><u>48067</u></b>	<b><u>33959</u></b>	<b><u>4704</u></b>	<b><u>86730</u></b>
<b>For Sale (CSA)</b>				
Wheat	37928	5795	27500	71223
Rice	576	18750	-	19326
Sorghum	<u>5000</u>	<u>313</u>	<u>11000</u>	<u>16313</u>
<b>Subtotal</b>	<b><u>43504</u></b>	<b><u>24858</u></b>	<b><u>38500</u></b>	<b><u>106862</u></b>
<b>Total Grain</b>	<b><u>91571</u></b>	<b><u>58817</u></b>	<b><u>43204</u></b>	<b><u>193592</u></b>
<b>Other:</b>				
Powdered Milk	3621	3475	4231	11327
Oil/Butter	4611	2224	3391	10226
Meat/Fish	-	154	38	192
Others	-	<u>188</u>	<u>663</u>	<u>851</u>
<b>Total Other</b>	<b><u>8232</u></b>	<b><u>6041</u></b>	<b><u>8323</u></b>	<b><u>22596</u></b>
<b>Total All</b>	<b>99803</b>	<b>64858</b>	<b>51527</b>	<b>216188</b>

**Source: FEWS/Mauritania; UN World Food Program**

**Table 2: NOAA/NESDIS Forecast for Millet and Sorghum**

Region	86 Fcst kg/ha	86 as % 84 Yld	86 as % 85 Yld	85 Area (ha)	86 G Prod (MT)	85 Loss (%)	86 N Prod (MT)
Assaba	350	116.7	77.8	19490	6822	42	2865
Brakna	350	116.7	77.8	9500	3325	45	1496
Gorgol	330	94.3	126.9	15000	4950	35	1733
Guidimaka	750	166.7	83.3	15000	11250	28	3150
Hodh ech Chargui	340	85.0	103.0	13000	4420	45	1989
Hodh el Gharbi	290	72.5	87.9	5000	1450	35	508
Tagant	350	-	116.7	5900	2065	45	929
Trarza	300	-	115.4	5200	1560	35	546
<b>Total</b>				<b>88090</b>	<b>35842</b>	<b>37</b>	<b>13216</b>

Source: NOAA/NESDIS Cable; GIRM Letter to US Ambassador, January 1986

**Table 3: Shift in Population Distribution**

Region	CARE-Based Distribution	GIRM Distribution	Difference
Adrar	82134	71218	10916
Assaba	200519	156051	44468
Brakna	182904	172808	10096
Dakhlet Nouadhibou	30517	40846	(-)10329
Gorgol	132207	157098	(-)24891
Guidimaka	62485	114158	(-)51673
Hodh ech Chargui	224156	209464	14692
Hodh el Gharbi	151949	141598	10351
Inchiri	13641	20946	(-) 7305
Nouakchott	344224	385415	(-)41191
Tagant	116560	81691	34869
Tiris Zemmour	21036	35609	(-)14573
Trarza	265454	240884	24570
<b>Total</b>	<b>1827786</b>	<b>1827786</b>	<b>0</b>

Source: FEWS/Mauritania; GIRM Letter to US Ambassador, January 1986