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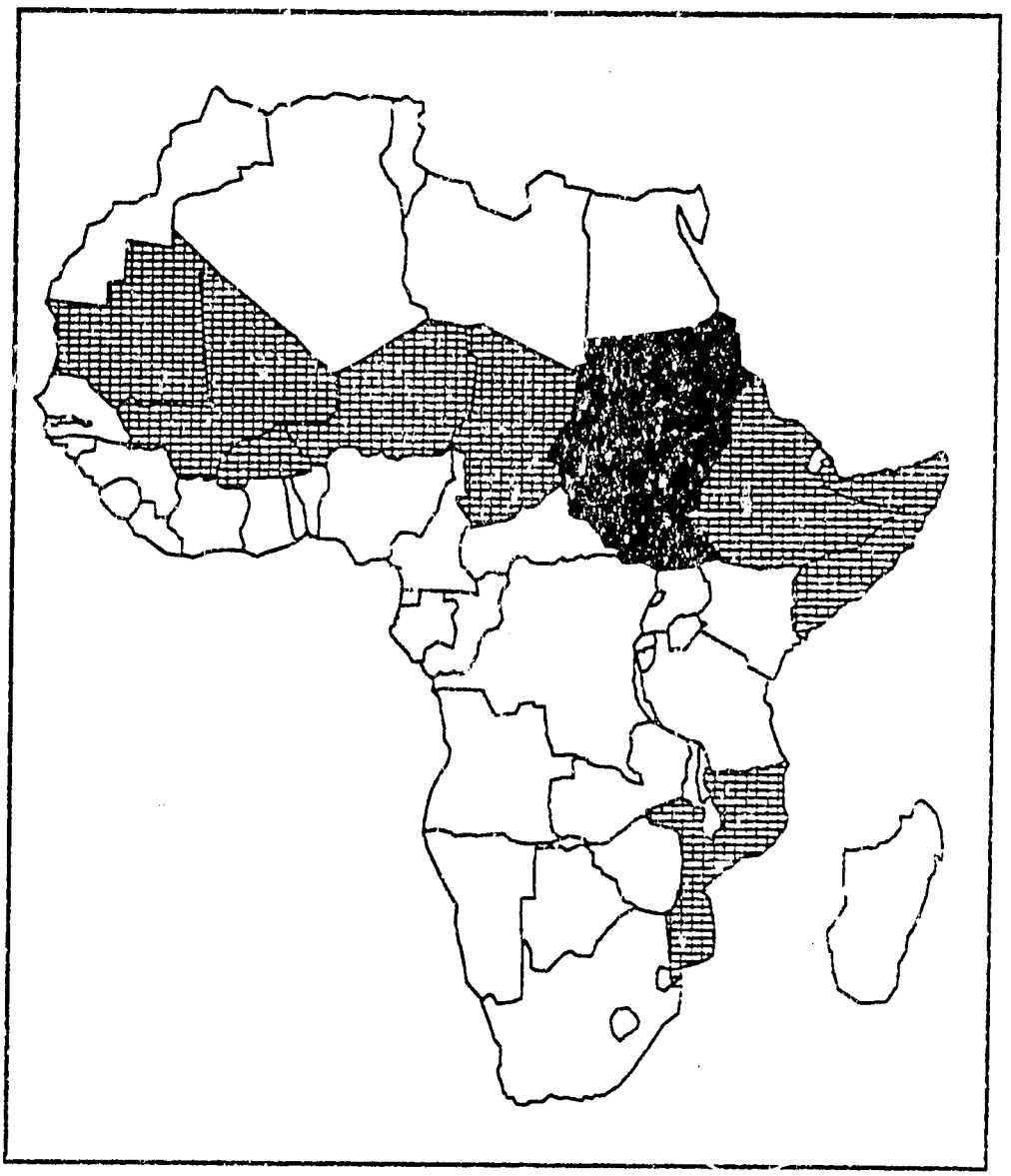
FEWS Country Report

SUDAN



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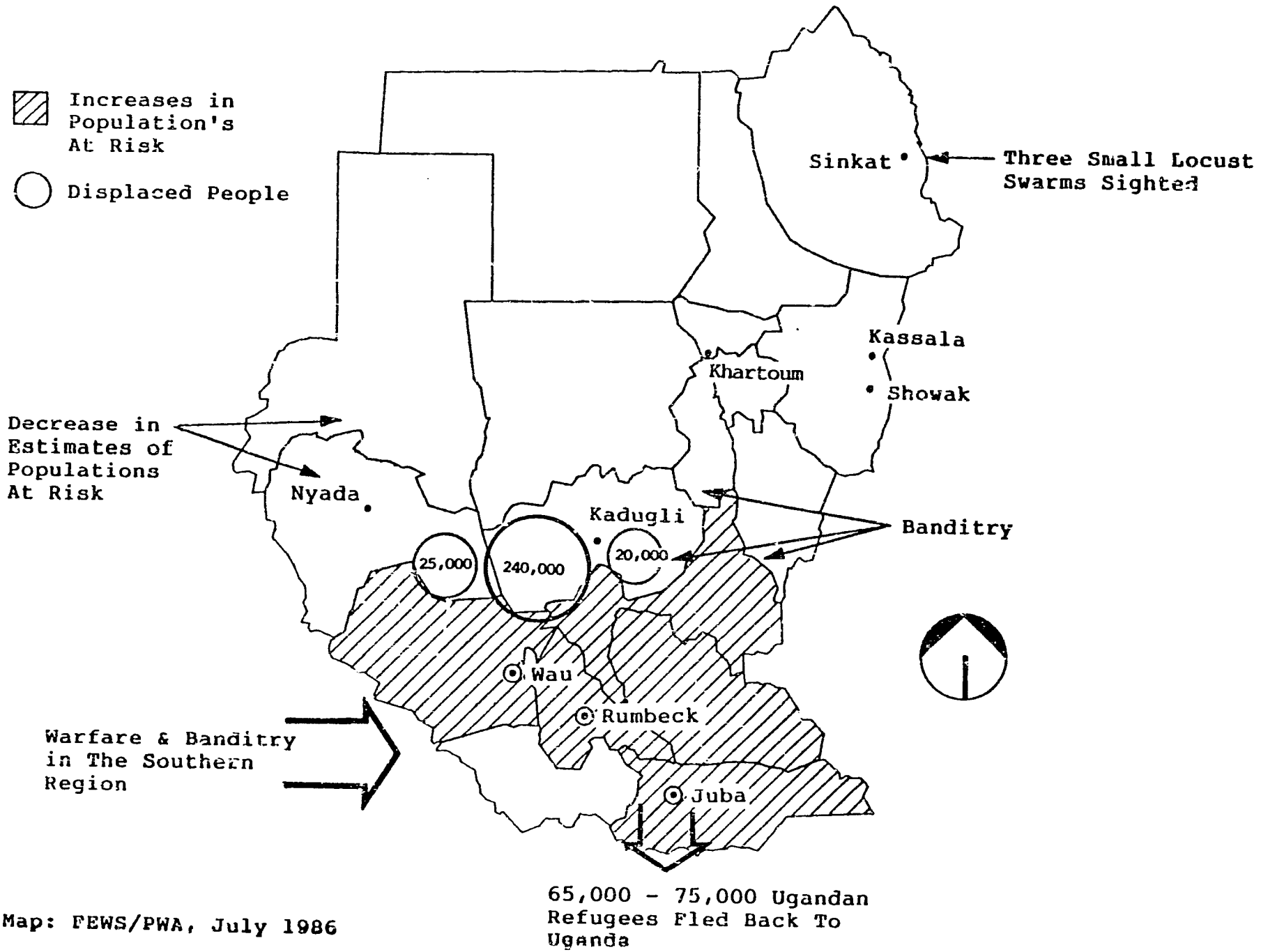
MAP 1

SUDAN: Summary Map



Map: FEWS/PWA, July 1986

Famine Early Warning System Country Report

SUDAN

Prices, Pests and Security
A Fragile Potential

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

Prepared by
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July 1986

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INTRODUCTION

This is the second of a series of monthly reports issued by the Famine Early Warning System (FEWS) on Sudan. It is designed to provide decisionmakers with current information and analysis on existing and potential nutrition emergency situations. Each situation identi-fied 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.

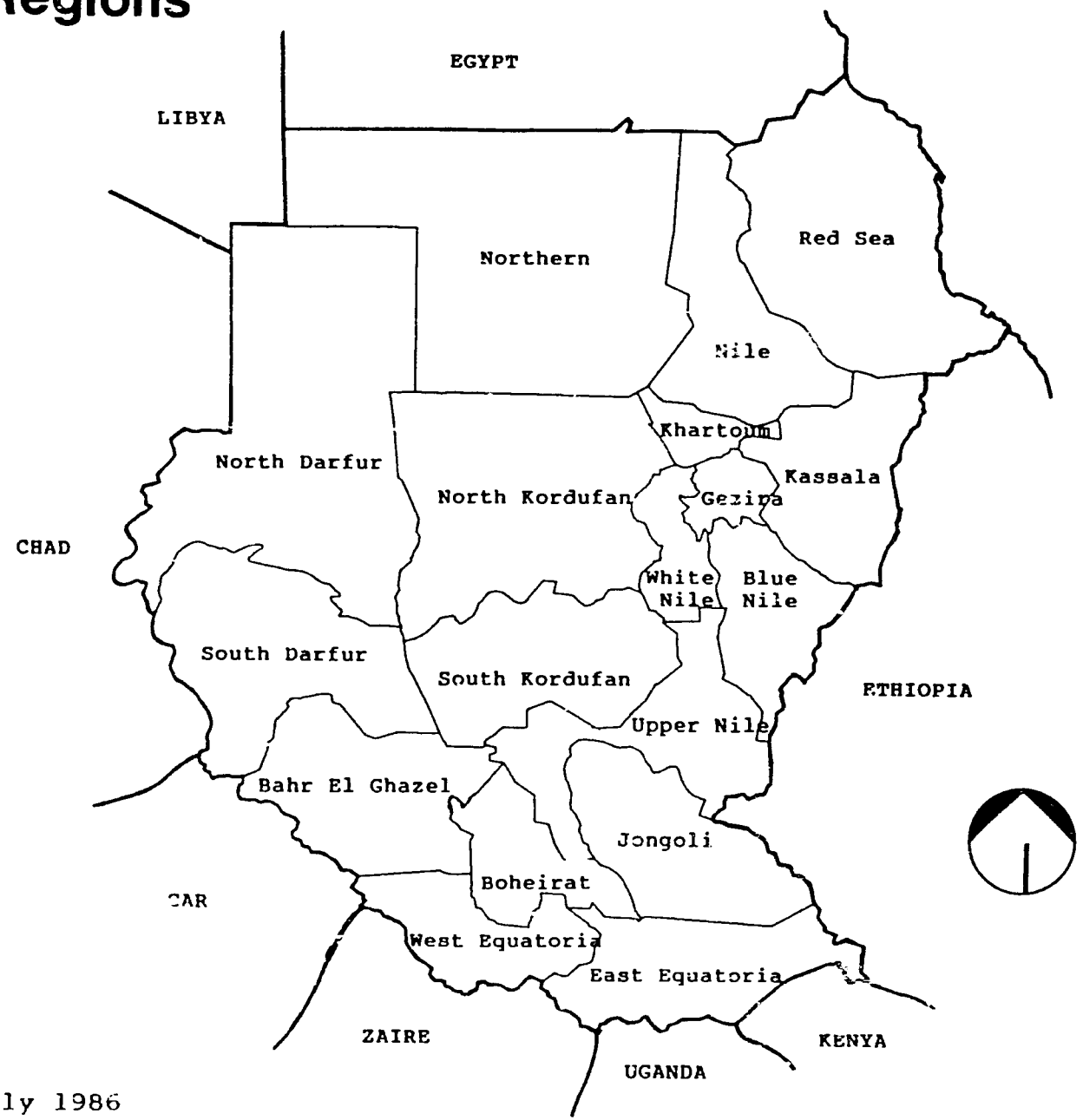
Where possible, food needs estimates are included in the FEWS reports. It is important to understand, however, that no direct relation exists between numbers of persons at-risk and the quantity of food assistance needed. This is because famines are the culmination of slow-onset disaster processes which 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 is operated by AID's Office of Technical Resources in the Bureau for Africa in cooperation with numerous USG and other organizations.

MAP 2

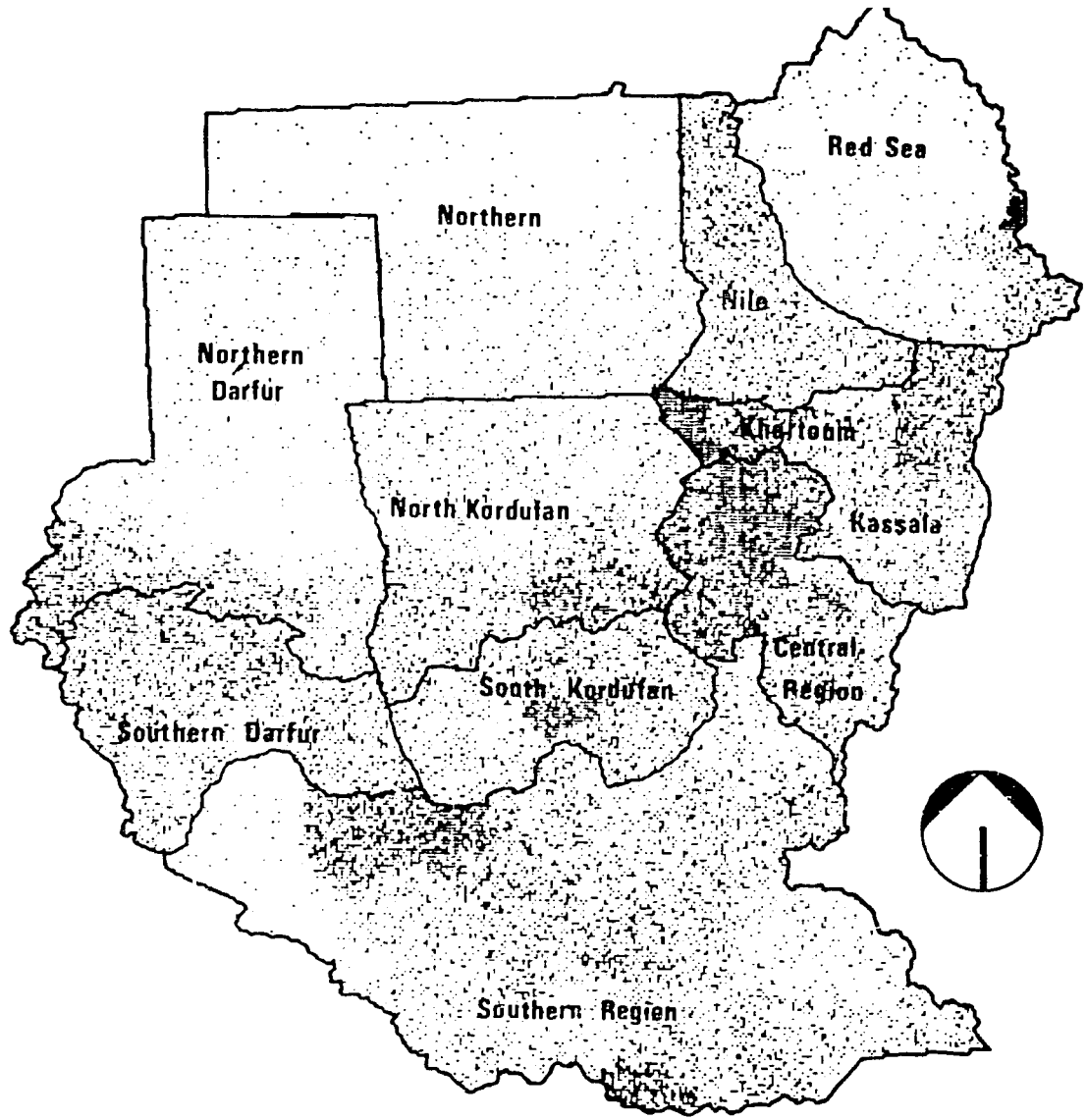
SUDAN: Administrative Regions



Map: FEWS/PWA, July 1986

MAP 3

SUDAN: 1986 Population Density
Each Dot = 1000 People



Map: FEWS/PWA, July 1986

SUMMARY

The population at-risk of famine in Sudan is estimated to be 5,112,000. While this represents only a slight decrease of the at-risk estimate in FEWS Report #1, it masks significant reductions in the west and a sharp increase in the south. Emerging agricultural prospects for 1986 are fragile. While the rainy season began poorly in the south of Sudan, good rains in July would ensure a good start to grain production in the important grain producing provinces of the Central and Eastern Regions; however, good rains would also increase the threat of a locust blight. The farmers' responses to low market prices and the locust threat are as yet unclear. The existence of, and threat of escalating, war-induced malnutrition in the Southern Region mark it as the area most at-risk in Sudan with up to 2,000,000 people requiring food aid intervention. Most accounts paint a grim picture of the famine potential in the Southern Region.

Issues

- An emergency declaration was issued by the U.S. Ambassador allowing USAID's Office of Foreign Disaster Assistance (OFDA) to respond to the threat of a locust plague in Sudan. Up to $1,000,000 in support has been pledged and an action plan is being formulated with the international community. The window of opportunity for early and effective action is closing.

- The security situation in the Southern Region has restricted the amount of information available to assess food needs and has severely limited the response of the international community in the delivery of food aid. Should future events invite humanitarian aid, the food supply problem is of such potential magnitude that it is unlikely that donors would be able to respond quickly to the demand.

- Uncertainties surround the population and grain production estimates for North Darfur Province. Most of the data points to unmet food needs there.

Key Indicators

- The timing and amount of rains during July, especially in the Central and Eastern Regions (determining germination, early plant development and locust hatching)

- The implemention of a locust eradication program during July (including the start of surveys in mid-July to identify areas with large quantities of locust egg masses)

LOCUSTS

On June 25, 1986, U.S. Ambassador Horan declared an emergency in the Sudan due to the imminent threat of a massive locust infestation. If there is a second year of good rainfall, both African Migratory Locusts and Desert Locusts would be expected to respond with a population explosion that will require active control measures. The Ambassador's action allowed USAID's Office of Foreign Disaster Assistance (OFDA) to provide funding to meet the current threat--most likely through The Food and Agriculture Organization (FAO).

Reports of Migratory Locusts in eastern Sudan last year and the possibility of good rains this year mean that, in the absence of an extensive pesticide program, destructive swarms will form when locust population densities reach critical levels. Normal seasonal increases of Desert Locusts, abetted by rains in breeding areas along the Red Sea, will produce migrations into Central Sudan this season. Under the right conditions, these migrations could lead to the production of major swarms and an incipient plague. A swarm of 1 billion locusts eats approximately 1.5 times its weight daily or 2,250MT. Migratory Locusts eat primarily grass and grain, while Desert Locusts eat a wide variety of plant species and will cannibalize juvenile locusts in the absence of other foods. Adolescent forms (wingless grasshoppers, called hoppers), while less mobile, are also voracious and gregarious. Locusts daily eat at least as much as they weigh. In the absence of swarming, locust damage would be local and contained. The Desert Locusts are the species most likely to give rise to a major plague crossing national borders. The only continental plague of Migratory Locusts in the last 55 years came out of Mali and was fueled by a rare microclimatic regime in the inland delta of the Niger River.

Southern Kassala and southern Blue Nile Provinces have been identified as the areas most at-risk from locusts. Mechanized farms in southern Kassala Province are expected to reduce the acreage cultivated this year by 30% from last year's record, in part due to the locust threat, and will turn from sorghum to other crops (including sesame) for part of their production to minimize potential losses. Estimates of possible destruction, in the absence of control measures, range up to 50% of the total grain crop. Migratory Locusts are expected to add to the risk of famine for populations in the Southern Region already at-risk due to the conflict, breakdown in security, and an incipient drought condition. The Southern Region is also well within the outbreak area of the Desert Locust.

Three small swarms of 1,000,000 locusts (probably Desert Locusts) have been sighted around Sinkat in Red Sea Province. This area is well within the normal recessional area of Desert Locusts and is, in any case, a region of limited agriculture. Tokar, an irrigated agricultural area 100km to the southeast, is potentially at risk from these insects. Sinkat is, however, about 380km due north of Kassala City. Kassala City is at the extreme northeastern corner of the area (within the Central Region and Kassala Province) that produces the bulk of Sudan's grain crop. A swarm of 1,000,000 Desert Locusts would consume 2.25MT of forage each day, some of which could be growing crops.

RAINFALL AND VEGETATION

As the intertropical discontinuity moves north, the rainy season follows in the Sudan. Already in the Southern Region there is a shortfall of rain that will severely affect a precarious food supply situation. Also affected, with crop loss expected, were the northern part of the Southern Region (Jongoli and Upper Nile Provinces) and southern South Kordufan Province (May plantings only). Crops sown in South Kordufan in June (the bulk of the planting) are unaffected to date, with sufficient rainfall for germination and early crop development. The timing of rains in Eastern Equatoria Province lead to predictions of crop loss if replanting of affected fields did not take place in late June.

Lower than usual rainfall in the Southern Region does not necessarily imply lower than usual rainfall in areas further north, nor does it imply that rainfall might not reach normal levels. It does, however, add one more flag to the indicators of risk for the population of the South. The rainy season moved north on schedule during June and July with thunderstorms as far north as Khartoum during the middle of July. Early rains have been reported in the far west of North Darfur Province, but with little additional information.

In the main crop growing areas of Kassala Province and the Central Region, germination should be beginning. Mechanized farmers plant later than traditional farmers but even they should have completed planting by July 15.

Satellite imagery shows vegetation to be slightly better than last year in the western Sudan with greening extending farther north in Darfur and Kordufan Regions. In the Central Region vegetation is about the same as this time last year, except for some areas in central and southern Blue Nile Province, especially around the important agricultural zone near Damazine. In Kassala

Province, an area from Kassala City south to Showak shows far less vegetation than at the same time last year. A broad area also showing decreased vegetation stretches from southern South Kordufan Province as far south as Jongoli Province and west into Bahr El Ghazel Province.

PROSPECTS FOR THE 1986 SEASON

Low profit margins on grains, the threat of locust infestation and the overall security situation have been identified as constraints on 1986 agricultural production in Sudan. The record harvest in 1985 was a result of very high prices at planting season which fueled farmers' ambitions. With the consequent drop in prices, a greatly reduced planting is anticipated. When this is combined with the locust threat and the security situation, it is clear that the 1986 agricultural potential has a fragile base. Close monitoring of the rainfall, pest and security situations will be necessary.

GRAIN PRODUCTION AND GRAIN DEFICITS

The Ministry of Agriculture (MOA) performed its first interview survey, questioning 1639 farmers in the four western provinces (North Darfur, South Darfur, North Kordufan and South Kordufan), to estimate agricultural acreage, yields and production during 1985. The results of this survey have recently become available.

TABLE 1: GRAIN PRODUCTION ESTIMATES FOR WESTERN SUDAN (000's MT).

Province	FEWS ESTIMATE (APR. 1986)	5 YEAR HISTORICAL AVERAGE[1]	1985 MOA SAMPLE SURVEY
North Darfur	43	61	101
South Darfur	247	267	242
North Kordufan	80	161	158
South Kordufan	237	185	347
Total	607	674	848

Source: MOA, May 1986

Almost 46% of the difference (110,000MT) between the MOA Survey figure and previous estimates is found in totals from South Kordufan Province. Perhaps more importantly, the estimates of production in North Darfur and North

[1] The five year historical average includes the crop-years of 1979 to 1983.

Kordufan Provinces have at least doubled. If accurate, these new estimates reveal a much greater food supply than previously suspected.

Some problems in the design and implementation of the MOA survey limit its reliability and the MOA estimates for North Darfur and North Kordufan do not correspond with other available information. In both provinces rainfall totals were worse than average. Previous reports and surveys from relief organizations indicated a serious grain shortfall and limited personal resources available to help people compensate through commercial channels. There have also been persistent reports of extensive out-migration from North Darfur Province.

New MOA estimates of grain production in the Central Region and Kassala Province are lower than previous estimates. While this estimate provides a lower limit on production, it does also take into account potential losses from last year's pest infestations. The new grain production estimate for the Southern Region increases the estimated deficit there by two-thirds.

TABLE 2: ESTIMATE OF CEREAL PRODUCTION AND REQUIREMENTS FOR SUDAN BY PROVINCE 1985-86

PROVINCE(S)	ESTIMATED 1986 POP	CEREAL REQD (000)MT	SORGHUM/ MILLET GROSS PROD (000)MT	WHEAT GROSS PROD (000)MT	MAIZE GROSS PROD (000)MT	RICE GROSS PROD (000)MT	NET SORGHUM CALORIC EQUIVALENTS SURPLUS/(DEFICIT) TOTAL (000)MT)	PER CAPITA (KILOGRAMS)
Central Region	4426173	589	1754	135	2	6	953	215
Kassala	1676564	223	1100	18	0	0	681	406
Khartoum	2103702	280	29	0	0	0	(256)	(122)
Nile	672224	89	20	6	2	0	(67)	(99)
Northern	443881	59	15	40	1	0	(11)	(24)
Northern Darfur	1268543	169	101	0	0	0	(87)	(69)
North Kordufan	1823065	242	158	0	0	0	(115)	(63)
Red Sea	795861	106	23	0	0	0	(87)	(110)
Southern Darfur	1990044	265	242	0	0	0	(69)	(35)
South Kordufan	1444450	192	347	0	4	0	91	63
Southern Region	5478994	729	261	0	25	6	(496)	(90)
TOTAL	22123501	2942	4050	199	34	12	536	24

SOURCES: COMBINED FROM MOA AND OTHER DOCUMENTS.

NET SORGHUM CALORIC EQUIVALENT IS CALCULATED FOR PRODUCTION OF EACH GRAIN TYPE MINUS LOSSES (MILLING, WASTE, FEED, INDUSTRIAL USES AND SEED STOCKS). NET CEREAL SURPLUSES/DEFICITS ARE BASED ON PER CAPITA ANNUAL CEREAL REQUIREMENTS ESTIMATED AT 133 KILOGRAMS.

SOUTHERN REGION

At least 2,000,000 people are estimated to be at risk in the Southern Region of Sudan. Estimates go as high as 3,000,000 people at-risk. Warfare and banditry in and on the periphery of the Southern Region continue to disrupt agriculture, herding and fishing; to foment population movements; to inhibit the delivery of essential health and veterinary services; and to halt normal food flows. Malnourishment, especially among displaced people, is on the rise and nutrition surveys show alarming results. Normal agricultural setbacks, such as pest infestations and poor rainfall, have been magnified (due to the inability of people to respond in traditional ways) into major catastrophes.

Both urban and rural populations have been affected by fighting between the Sudanese People's Liberation Army (SPLA) and the Government of the Sudan (GOS). The only area relatively unaffected by the conflict is West Equatoria Province. In Boheriat Province, the city of Rumbeck is under siege. In Bahr El Ghazel Province, the city of Wau is a refuge for an increasing number of displaced people (latest estimate 45,000, 65% women and children under the age of 15), yet is vulnerable to attack and siege. In Eastern Equatoria, the city of Juba is under siege by road and, as of July 17, 1986, air traffic has been interdicted as well. There are an estimated 50,000 displaced people taking refuge there. In the Upper Nile Region fighting between rebel factions (the SPLA and Anya Anya II) has further exacerbated the breakdown in security for the population. Armed tribesmen from South Kordufan (described as cattle rustlers) are also operating in the Southern Region.

Increasing numbers of displaced people are taking refuge from the warfare and a recent USAID mission cable reports 240,000 are seeking food aid in southwest Southern Kordufan, having fled from along the Babanusa/Aweil rail line. There are specific reports of 5000 women and children from Azrak in Bahr El Ghazel Province and a total of 15,000 Dinka tribesmen from the south seeking refuge and food aid around Kadugli. People are also reported fleeing to Khartoum. In the south, the cities of Juba and Wau are attracting large numbers of people seeking both refuge and food aid, as is Western Equatoria Province (6000 displaced people in Mundri during May 1986) . Sudanese refugees are also reportedly following fleeing Ugandan refugees into Uganda. There is a report quoted by the USAID mission that 25,000 Dinka tribesmen have been displaced into Southern Darfur Province. The most recent available report (March 1986) from the United Nations High Commissioner for Refugees (UNHCR) lists 102,000 Southern Region Sudanese as refugees in Ethiopia.

Since April, 65,000 to 75,000 Ugandan refugees have fled from Eastern Equatoria Province (six settlements on the west bank of the White Nile) back to Uganda. Armed attacks by either ex-Ugandan military, bandits or the SPLA/GOS provoked this reaction. (The United Nations High Commissioner on Refugees (UNHCR) reports these refugees are able to return to their lands and villages due to the improved security situation in Uganda.)

Banditry or SPLA incursions have also been reported from the Southern Region into South Kordufan, Blue Nile and White Nile Provinces, indicating that the breakdown in security is not limited to the south. The primary means of north-south movement, the White Nile, has been closed to barge traffic (reportedly some private merchants have successfully used the White Nile over the past month). Road traffic is subject to ambush; although World Vision (WVRO) successfully moved some food aid into Bahr El Ghazel Province from Southern Darfur province, even this movement has been halted. Emergency airlifts of Unicef/WFP food aid from Uganda (under the aegis of Band Aid and OFDA) into the city of Juba were halted even before the closure of the airport due to some bureaucratic problems. The European Economic Community (EEC) had also air lifted minor food aid cargos into Juba. In any case, air shipments are now threatened by attack by the SPLA.

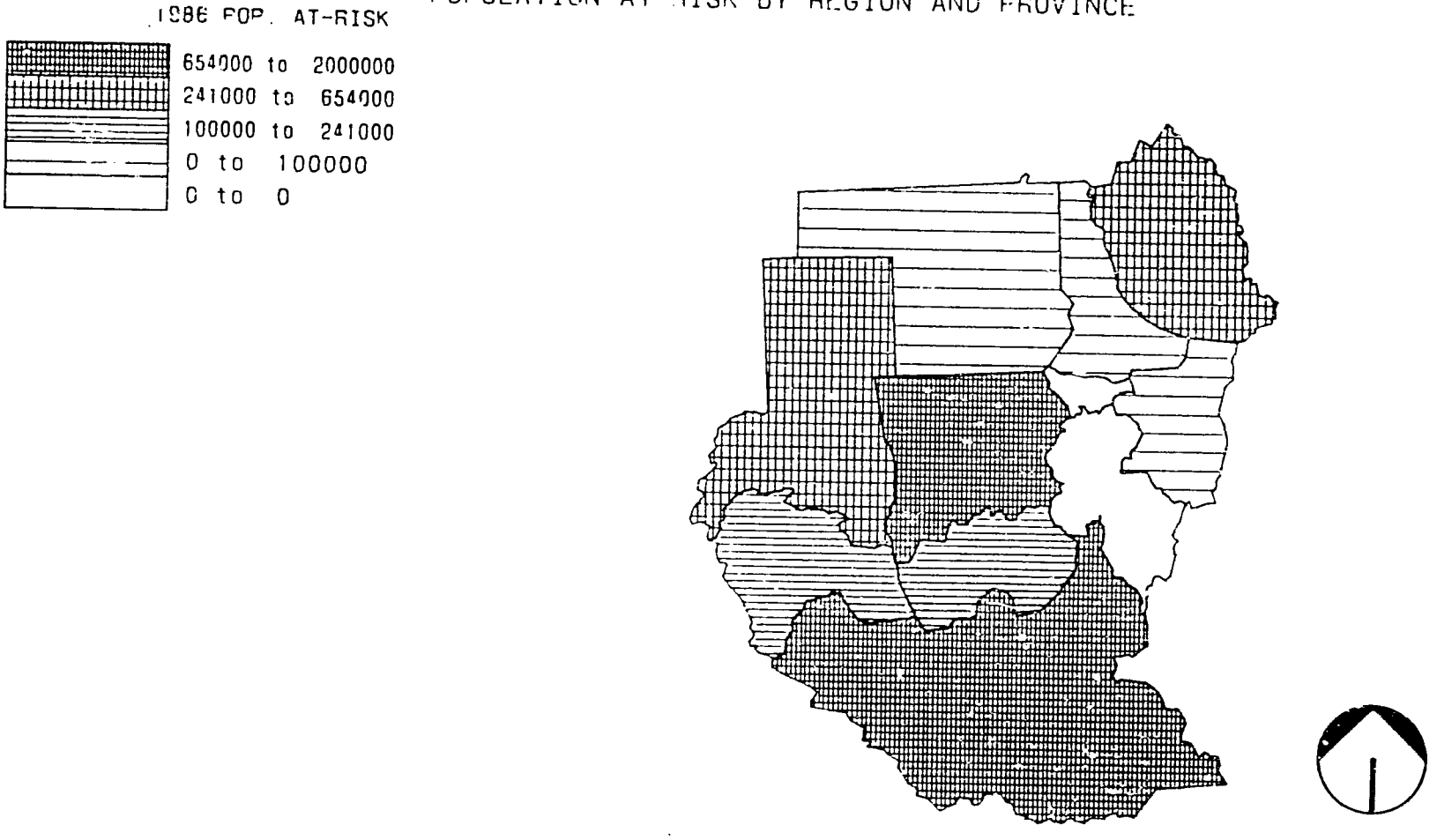
Grain production in Upper Nile Region was below normal last year due to drought. Coupled with the security situation and the possible loss of May plantings, this report emphasizes the limited resources of people in that region. Crop loss in Upper Nile so far this year is estimated at 75%. In Bahr El Ghazel, around Wau, rainfall is low, and there are accounts from Wau of groundnut seed being taken out of the ground by hungry people immediately after planting. Crop loss there is also estimated at 75%. In Eastern Equatoria, crop losses of 25% have been reported.

POPULATION AT-RISK

A total of 5,112,000 people are believed at-risk in Sudan, at least until harvest in October and November 1986. This estimate includes 2,000,000 people in the Southern Region whose war-induced risk is exacerbated by low rainfall and the likelihood of locust infestations. (See Map 4.)

MAP 4: SUDAN, POPULATION AT RISK

POPULATION AT RISK BY REGION AND PROVINCE



Map: FEWS/PWA, 1986

TABLE 3: POPULATIONS AT RISK BY AREA, TOTAL DEFICIT, AND FOOD AID ALLOCATIONS FOR 1986.

AREA	POPULATION	AVERAGE	TOTAL AT-RISK
North Kordufan	1,575,000	113	177.5*
South Kordufan	106,000	61	6.5
North Darfur	654,000	133	62.0
South Darfur	241,000	133	32.1
Red Sea	376,000	133	50.0
Kassala	100,000		
Blue Nile	0	0	0
Northern Region	60,000	100	6.0
Northern Nile			
Southern Region	2,000,000	90	180.0
Bahr El Ghazel			
Boheriat			
Upper Nile			
Jongoli			
West Equatoria			
East Equatoria			
TOTAL	5,112,000	105	514.1

Sources Relief Organization Reports And MOA Agricultural Estimates.

* This requirement is based on identified populations at risk and their food requirement. It differs from the net deficit reported in Table 2, which is based upon MOA crop production estimates.

North Kordufan--While grain production is reported higher in North Kordufan than previously expected, counts by CARE and surveys by Oxfam/Unicef indicate that the earlier estimate of 1,575,000 people at-risk remains unchanged.

South Kordufan--New grain production figures for South Kordufan show a greatly increased surplus over that reported in Sudan Country Report #1. Nonetheless, 106,000 people in the northern part of Dilling District have been clearly identified as being at-risk of famine, presumably as they do not have the economic wherewithal to purchase their grain requirements commercially -- the result of a second year of crop failures.

North Darfur--Newly available field estimates of people at-risk who will receive food aid in North Darfur Province total 467,273, but the total population at-risk is estimated at 654,000. Those people programed to receive food aid will require 62,200MT of emergency food grain for the current year. This is to be compared with the total grain deficit for that province of at least 87,000MT. The price of sorghum has fallen to pre-drought levels and people with animal resources could sell their livestock to obtain sufficient commercial grain. Livestock losses during the drought are estimated at 60%, however, and those most affected will husband their animal resources in an attempt to rebuild a reliable subsistence herd.

Two new population estimates indicate growth rates of 3.7% and 7.2% for the population as a whole since the 1983 Census. If either of these estimates are correct then the total grain deficit is even larger than 87,000MT. Repeated reports of massive net out-migration (e.g. at least 80,000 people have emigrated to South Darfur), however, makes it difficult to accept the new population figures.

South Darfur--New estimates for grain production last year increase the net grain production deficit for the province to 69,000MT. However, field reports show that the current food supply situation is well in hand. Currently 241,152 people are expected to receive 34,726MT of food aid in South Darfur Province. Potential commercial movements of food could make up for the difference between projected deficit and planned food aid distributions. At least 80,000 migrants (probably displaced people) are estimated (June 1986) by Save the Children to be in the Province. Reports indicate a high degree of integration of these people into established communities.

Red Sea--Practically the entire rural population of Red Sea Province, totaling 376,000 people, continues to be at risk. While little recent information is available on the nutritional status of these people, a survey carried out by Oxfam from November 1985 through February 1986 showed almost 20% of children surveyed had moderate to severe protein energy malnourishment. A March survey by League of the Red Cross (LRC) produced a figure of 12%. These results show that malnutrition survey results can vary due to the choice of sites and the timing of the survey. A whooping cough outbreak was identified in the Red Sea Hills during June and immunization teams were sent out in response.

Kassala--UNICEF reported in May that the World Food Program (WFP) and CARE would supply 100,000 people in Northern Kassala Province with food aid. This is in the face of a massive grain surplus in the Province and a Provincial reserve, derived from a grain tax, specifically targeted to those at need throughout the Province.

Blue Nile--Supporting information on the estimated 162,000 people reported at-risk by World Vision (WVRO) in the southernmost district of Blue Nile Province has not been forthcoming. The detailed population at-risk information, on which this estimate was made, has been undercut by recent denials of people at-risk in the province.

Northern Region--Estimates of 120,000 people at-risk in Northern and Nile Provinces are no longer supported. Only half the amount of the previously estimated food aid requirement is now supported. The estimate of people at-risk is now 60,000.

Southern Region--Previous estimates of 963,000 people at-risk in the Southern Region of Sudan (Bahr El Ghazel, Boheriat, Upper Nile, Jongoli, West Equatoria and East Equatoria Provinces) fall short of the magnitude of the problem. The entire population of the Southern Region (5.5 million people) is potentiallly at-risk. Pepple who currently require food aid are estimated by UNICEF to number 2,000,000; descriptions of malnutrition levels, constraints on production (security, drought, locust, population movements) and constraints on the movement of commercial food and food aid seem to support this number. Due to the security situation, sparse data preclude a more precise projection. Oxfam-UK estimates a higher figure of 3,000,000 people at-risk.

REFUGEES

The refugee situation in Sudan continues to improve. Health and nutrition measures of both Ethiopian and Chadian refugee populations are at their highest level since the present drought began.

Refugee movements are taking place as Ethiopian (especially Tigrayan) refugees return in relatively large numbers to Ethiopia. At least 65,000 are said to have returned to Tigray during the first five months of 1986 and a total of 80,000 are expected to return during the year. In the west, Chadian refugees are being moved out of the notorious Thumb area closer to El Geninea to an agricultural settlement scheme which would also facilitate food distribution during the rainy season. There are indications that some Chadian refugees resisted relocation by leaving camps in the area. At the same

time reports from Chad indicate that 25,000 of the estimated 121,000 refugees in the Darfur Region have returned to Chad so far this year. In the Southern Region 65,000 to 75,000 Ugandan refugees have been driven back to Uganda by attacks of armed bands (see above), leaving 200,000 in that Region who are at-risk of similar depredations. It is reported that they are preparing to return to Uganda at the end of the current agricultural season.

FOOD AID

Food aid commitments and deliveries continue to be on schedule for all parts of Sudan except the Southern Region. Food aid shipments into the Southern Region have been suspended due to the closure of Juba Airport in Eastern Equatoria Province and due to the lack of a responsible party for distribution in Bahr El Ghazel Region (previously supplied and transported by World Vision, WVRO).

TABLE 4: FOOD AID COMMITMENTS AND DELIVERIES AS OF JULY 1, 1986 (ALL DONORS).

REGION	DONOR COMMITMENTS (000MT)	ACTUAL DELIVERIES (000MT)
Darfur	92.1	78.4
Kordufan	148.6	120.0*
Central	28.2	28.2*
Eastern	41.1	30.0*
Northern	3.2	4.2*

Source: United Nations Emergency Operations in Sudan (UNEOS) "Monthly Situation Report for June 1986"
* Best Estimate

Total commitments have declined since FEWS Country Report #1. This is reportedly due to increasingly refined estitates of need by donors.