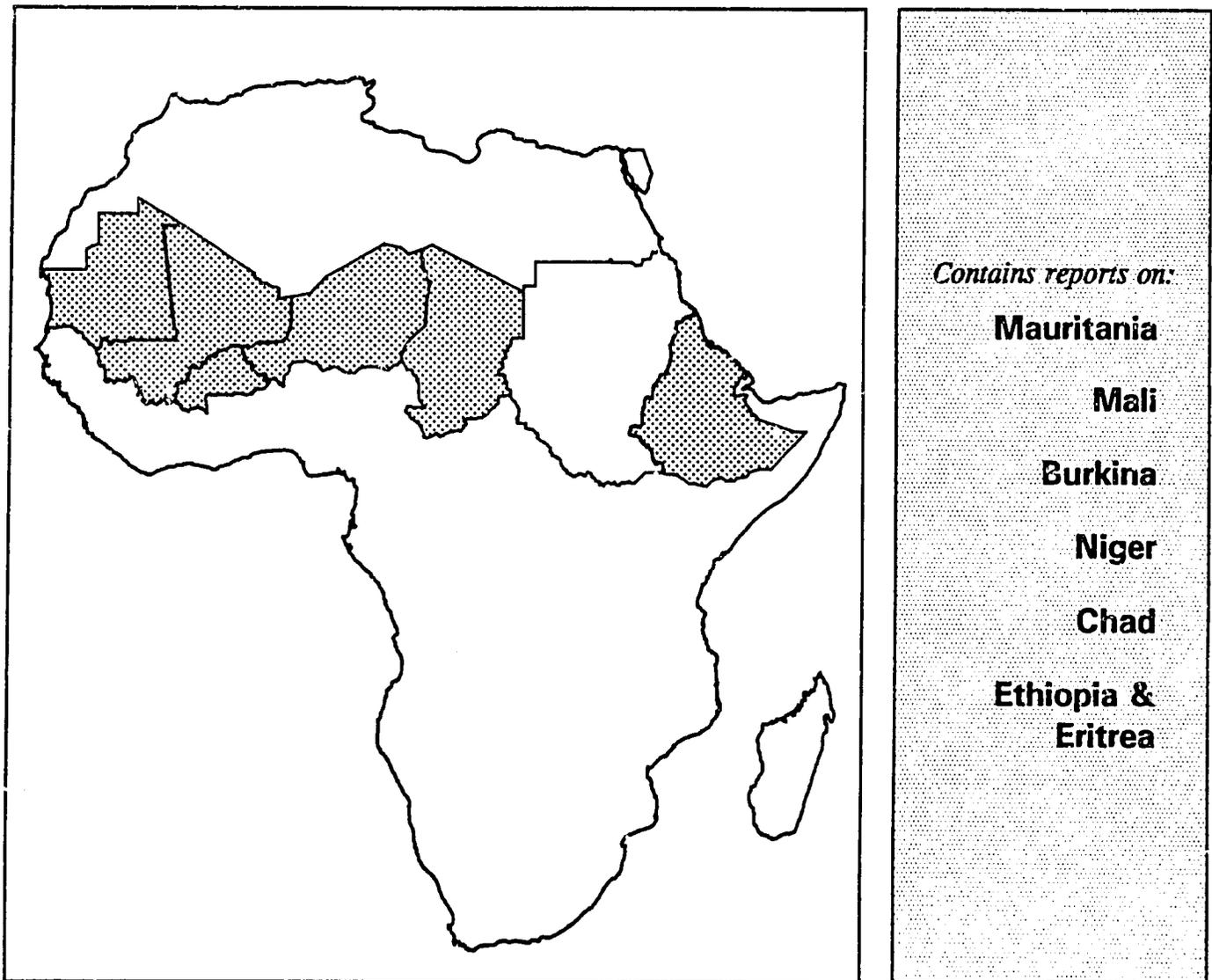


Harvest Assessment



Harvest Assessment

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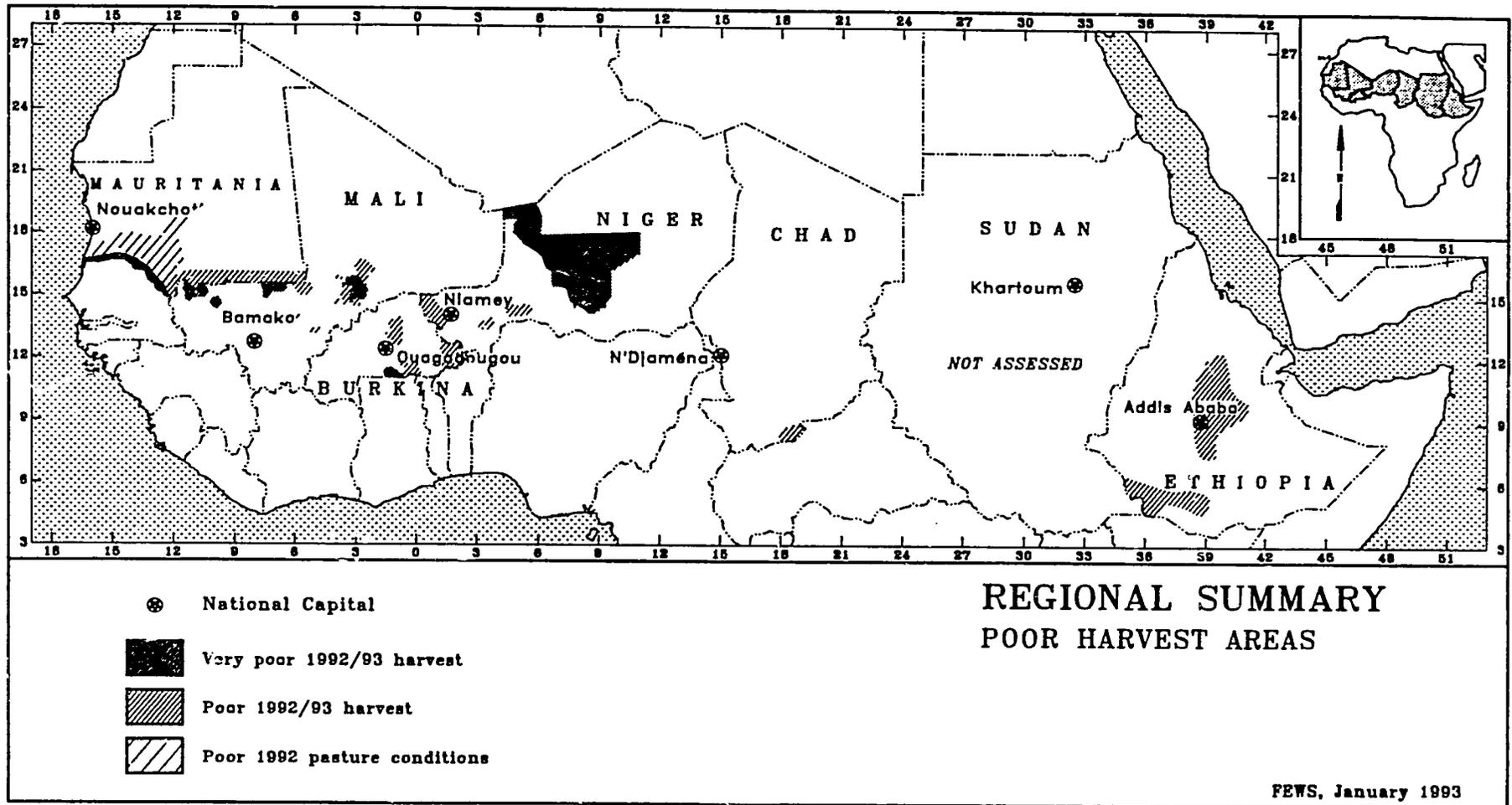
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Map 1: Regional Reference Map



EXECUTIVE SUMMARY

SUMMARY

The 1992/93 cereal harvest produced a surplus in most of the Sahel—above-average production was noted in several countries. Despite this good production year, infrastructural limitations, civil unrest and pockets of poor production, particularly in drought-affected areas, will keep people in need of food aid assistance.

Mauritania

For the third consecutive year, local cereal production has fallen below 100,000 MT, a figure that has represented between 16 and 23 percent of the country's cereal needs in the last few years. The FAO/CILSS evaluation team estimated 1992/93 global production would approximate 72,753 MT net. After including on-hand stock and projected imports, the provisional cereal balance is a deficit of 82,000 MT.

Mali

The 1992/93 harvest is estimated at 2.15 million metric tons (MT), resulting in a national surplus of 227,500 MT. Export demand and infrastructural constraints will result in pockets of need. The Government of the Republic of Mali plans to distribute 5,300 MT to 197,000 people. Northern populations recovering from civil unrest will also experience additional and significant need.

Burkina

National cereal production is above-average for the second consecutive year. No emergency food aid will be required. Localized cereal deficits can be met by the Government of Burkina.

Niger

Severe food shortages may develop in certain areas of Niger despite a generally fair cereal harvest and an expected positive net cereal availability balance for 1992/93. Highly targeted interventions are required to mitigate hardship.

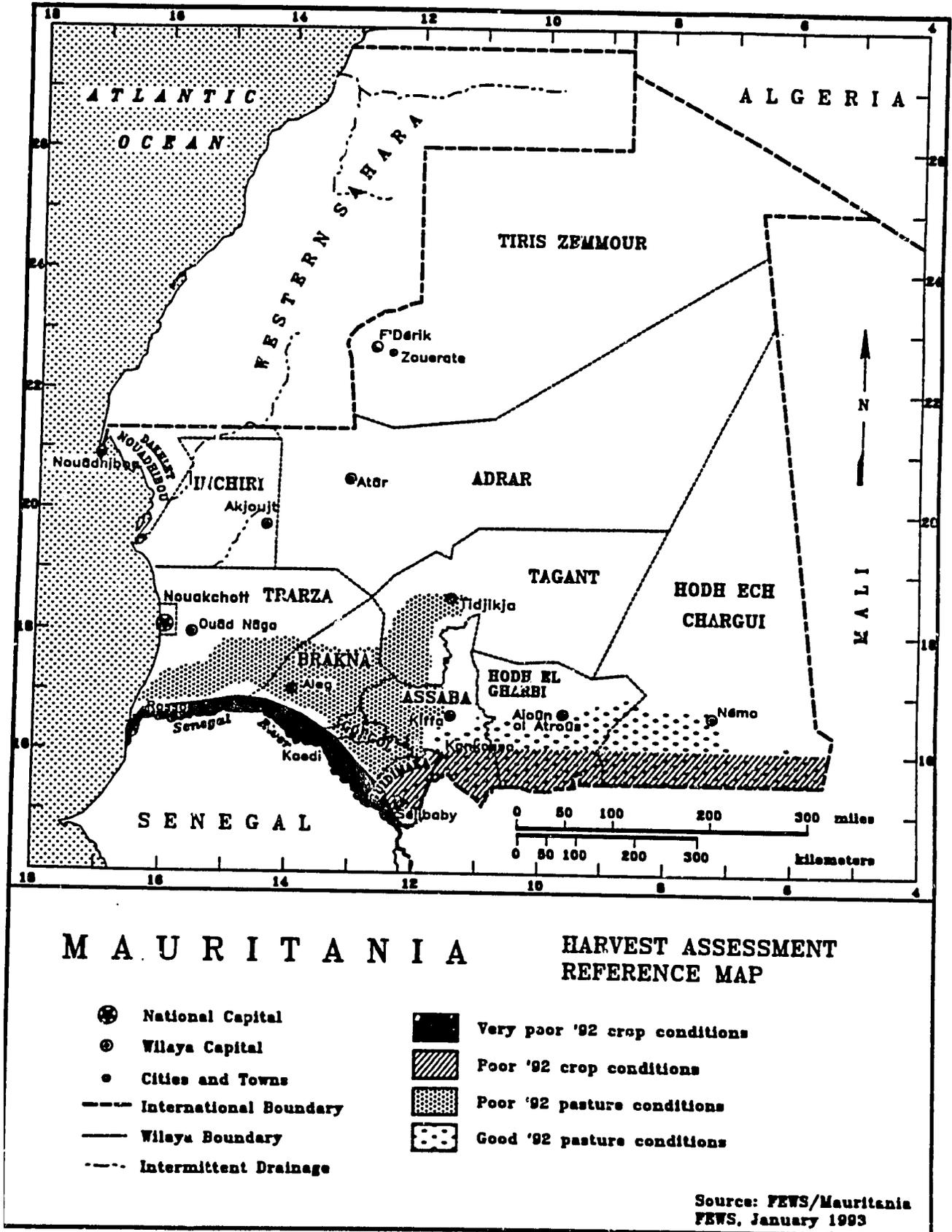
Chad

Chad is expecting another record harvest after a second year of excellent rainfall. Cereal prices are at an all time low in chronically production deficit Kanem Prefecture. Any local cereal shortages will be met through trade and existing stock. No emergency food aid imports will be required.

Ethiopia

In spite of a third consecutive year of good food crop production in Ethiopia, a structural food aid import need of 530,000 MT is forecast. Emergency food aid will be required for an estimated 4.5 million people.

In Eritrea, an excellent harvest has substantially narrowed the structural food. However, the persistent effects of sustained poverty, marginalization and social and economic dislocations will keep many Eritreans at-risk of malnutrition.



Map 2: Mauritania Reference Map

Poor Harvest Threatens Widespread Food Stress

SUMMARY

Harvest prospects range from mediocre to poor in the southeast and poor to catastrophic in most of the Senegal River Valley.¹ Ongoing surveys and anecdotal reports suggest that agro-pastoralists in the southern zone are less vulnerable than they were in 1991/92, but agro-pastoralists in northern and central zones are markedly more vulnerable than average (see Map 2). The 1992/93 cereal deficit was being addressed by donors and the Government of the Islamic Republic of Mauritania's Food Security Commission (GIRM/CSA) as of mid-December.

Mauritania's cereal balance² is estimated at an 81,654 metric tons (MT) deficit. Donors have agreed to request up to 51,000 (MT) of cereals and 5,000 MT of high protein supplements from their home offices.

FACTORS AFFECTING FOOD AVAILABILITY

Harvest Outcome

The 1992/93 harvest is expected to fall even lower than the harvests of 1990/91 and 1991/92. All four of the planting schemes used in Mauritania³ have been adversely affected by the late start and the weak outcome of the 1992 rainy season.

With all *dieri* crops harvested, total production was estimated at 27,911 MT net with the majority being harvested in Hodh el Chargui, Hodh el Gharbi and Guidimaka *wilayas*. The River Valley region produced only nominal rainfed crops this year.

As of mid-December, *walo* crops were still maturing; actual surface-area planted appeared larger than last year in Gorgol

wilaya, but equal to or less than last year in Brakna *wilaya*. Net production is estimated at 10,472 MT.

Bas-fonds crops were at varying stages of maturity; however, insufficient moisture threatened yield. Irrigated crops were also at varying stages of maturity except the rice crops which were maturing.

The joint United Nations Food and Agriculture Organization-Interstate Commission to Combat Drought in the Sahel (FAO/CILSS) assessment in October estimated preliminary gross production of 94,449 MT, leading to a net production at 72,753 MT. This is 10,000 MT less than the FAO/CILSS 1991/92 predictions⁴ (see Table 1).

FEWS has constructed a more detailed table of production statistics to calculate regional food needs and projected cereal deficits. The data are disaggregated by administrative levels and by cropping scheme and will be published in the FEWS *Vulnerability Assessment*.

Pastoral Conditions

The Normalized Difference Vegetation Index (NDVI) showed above-average green-up in the southeastern pastoral zones (see inside backcover for an explanation of NDVI), in contrast, below-average green-up was seen in the southwestern and north-central regions. Pasture conditions should remain acceptable to above-average throughout the two Hodhs, southern Assaba and Guidimaka *wilayas*, for at least the next several months.

Food Stocks

An 81,654 MT cereal deficit is projected for 1992/93, approximately twice the 1991/92 initial cereal deficit (*Post Harvest* report, January 1992). Opening stock for 1992/93 are estimated at 70,250 MT (see Table 2).

¹ With most of the irrigated and river recessional crops several months away from harvest as of mid-December, the assessment of River Valley production is at best preliminary.

² The cereal balance is the sum of domestic production, stock on-hand and commercial and food aid imports less domestic consumption needs.

³ Mauritania planting schemes include rainfed (*dieri*), irrigated, river recessional (*walo*) and lowland agriculture (*bas-fonds*).

⁴ None of the production statistics provided by FAO/CILSS are presented in administrative levels, except for *Dieri* crops. A standard 15 percent loss is applied to the traditional cereal crops and a 40 percent loss to paddy crops to arrive at net production. Irrigated (*parastatal*) figures include both SONADER and M'-Pourie perimeters.

Table 1: FAO/CILSS 1992/93 Mauritania Provisional Agricultural Results

Planting Scheme	Sorghum	Millet	Rice	Maize
Dieri	29,520	3,316	0	0
Bas-Fonds	9,000	0	0	720
Walo	11,200	0	0	1,120
Décrue	3,570	0	0	320
Irrigated				
(Parastatal)	5,570	0	12,738	0
(Of season)	0	0	5,500	0
(Private)	0	0	11,875	0
TOTAL	52,860	3,316	30,113	2,160

Source: FAO/CILSS evaluation team October 1992.

Notes: Production is presented in gross. Figures are metric tons.

Projected Food Aid and Commercial Imports/Exports

Early estimates of Mauritania's cereal deficit are much more alarming than were the estimated projections for 1991/92. The annual cereal balance as projected by the *Comité de Programmation Alimentaire* (CPA) indicates a 1992/93 commercial imports total of 195,000 MT (private sector importing 40,000 MT of wheat, 50,000 MT of rice and 70,000 MT of wheat flour; SONIMEX importing 35,000 MT of rice). Although difficult to quantify, unofficial exportation of wheat and wheat flour continues at 8,000 to 10,000 MT per year. No official cereal exports are expected.

Although the 1992/93 deficit is currently accepted at 81,654 MT, this figure includes 30,000 MT of estimated animal food needs. Donors have agreed to address only human consumption needs, which brings the cereal gap to approximately 51,000 MT.

As of the last CPA meeting, held in October, only the European Community (EC) was able to make a confirmed pledge of 5,000 MT of wheat. Various other donors have expressed willingness to close the deficit by obtaining quantities similar to those shown below.

Donor	Quantity in MT	Status
EC	5,000	confirmed
EC	15,000	requesting
WFP	20,000	requesting
France	4,000	requesting
Germany	5,000	requesting
Total	49,000	

FACTORS AFFECTING FOOD ACCESS

The cumulative effect of shortfalls in production and the prevention of traditional pastoral migration for almost four years has led to a sharp drop in the supply of cereals, especially in the areas bordering Senegal and Mali. The central part of Mauritania, which usually receives cereal from the Senegal River Valley has, in turn, been hit hard (see Map 3). The impact is all the greater because agropastoral conditions have also been poor in recent years. In addition, the recent devaluation of the *ouguiya* (Mauritania's national currency) has increased the price of imported cereals (rice and wheat) to the point that many peasants must double or even triple the number of goats and sheep they must sell to purchase the same amount of cereal as before the devaluation.

Projected Food Consumption Needs

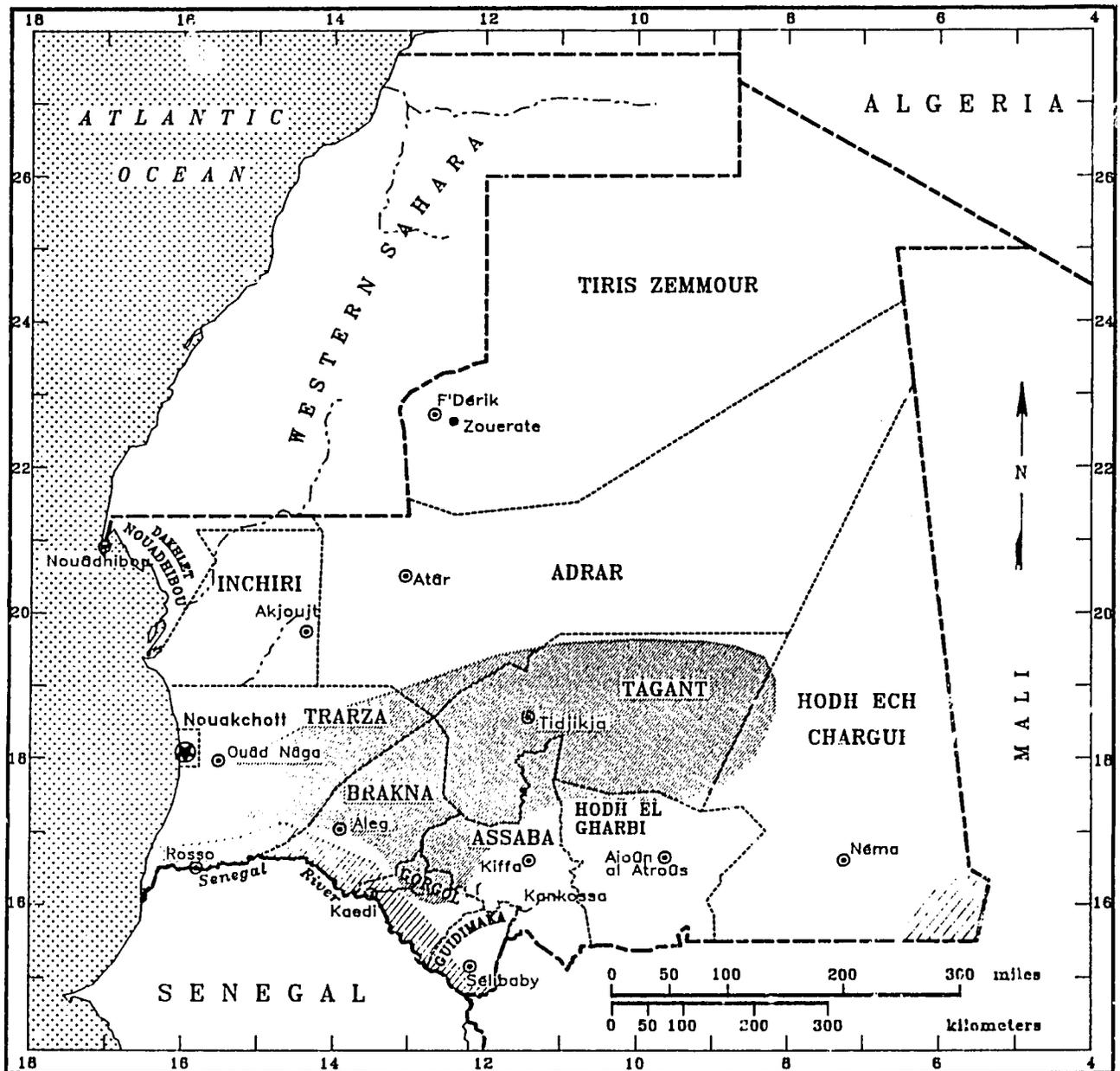
As in the past, for analytical purposes, FEWS has disaggregated this year's global production estimate to the *wilaya* (regional) level by applying several past season production scheme percentages that best compare to this year's conditions.

Table 3 shows the FEWS estimate of Mauritania's cereal consumption requirements by *wilaya*, after 1992/93 net production. Population figures are now being calculated by FEWS using the official results of the 1988 census (obtained in December 1992) as a base, and applying the different growth

Table 2: Mauritania Current Food Stock for 1991/92; 1992/93

Type	1991/92	1992/93
On-farm	5,000 MT	5,000 MT
CSA stock	50,362 MT	7,950 MT
Private		
(commercial)	16,200 MT	49,000 MT
SONIMEX	4,821 MT	8,300 MT
Total	76,383 MT	70,250 MT

Note: SONIMEX is the national import/export company. Private food stocks are quickly disseminated; therefore estimates are not easily obtained. Present estimates are based on quantities stocked at port.



M A U R I T A N I A V U L N E R A B L E P O P U L A T I O N S

- ⊗ National Capital
- ⊙ Wilaya Capital
- Cities and Towns
- International Boundary
- - - Wilaya Boundary
- · - Intermittent Drainage
- Up to 40% of agropastoralists highly vulnerable, 40% of agropastoralists moderately vulnerable
- Up to 1/3 of River Valley population highly vulnerable
- Malian refugees, highly vulnerable

Source: FEWS/Mauritania
FEWS, January 1993

Map 3: Mauritania Vulnerable Populations

rates observed for each *wilaya*. Cereal needs are calculated using the officially accepted consumption figure of 165 kg per person per year. Malian refugee requirements are included in this table.

Economic Data

As Mauritania relies heavily on imported goods, the 42 percent devaluation of the *ouguiya* in October caused prices of most foodstuffs and other supplies to register a steep increase. During December, prices generally began to stabilize while prices in the interior of the country remained high as evidenced by field trips and informal information. Meat prices continued to reflect poor mid-season grazing and population crowding. As of December, prices of some local cereals as well as imports had fallen. However, visible effects of the devaluation can be observed among the urban poor by a rise in the incidence of child malnutrition as reported by the Doulos Community, a United States Government (USG) supported non-governmental organization (NGO) working in the shantytowns of Nouakchott. It is likely that daily wage earners and salaried employees also have become more vulnerable.

UPDATE ON VULNERABILITY

As reported in the *Pre-Harvest Assessment*, the overall number of people facing elevated vulnerability this year is higher than last year. Following 3-4 poor production-years and the resulting economic hardship, a significant portion of the population has fallen below the critical economic and nutritional threshold as evidenced by visible signs of elevated food stress. In many parts of the country, households are routinely skipping the evening meal.

FEWS believes that up to 40 percent of the agro-pastoral and pastoral populations are highly vulnerable. Approximately one-third of the River Valley population is highly vulnerable due to another poor agricultural season. Malian refugees remain highly vulnerable due to the nature of their situation. However, their immediate needs are being addressed by the United Nations High Commission on Refugees (UNHCR) and GIRM authorities. At mid-December, the latest registered number of refugees approximates 35,000. The UNHCR solicited donors' pledges to address food needs until the end of 1992. In addition, a plan to address refugee needs throughout 1993 is currently under development.

CONCLUSIONS

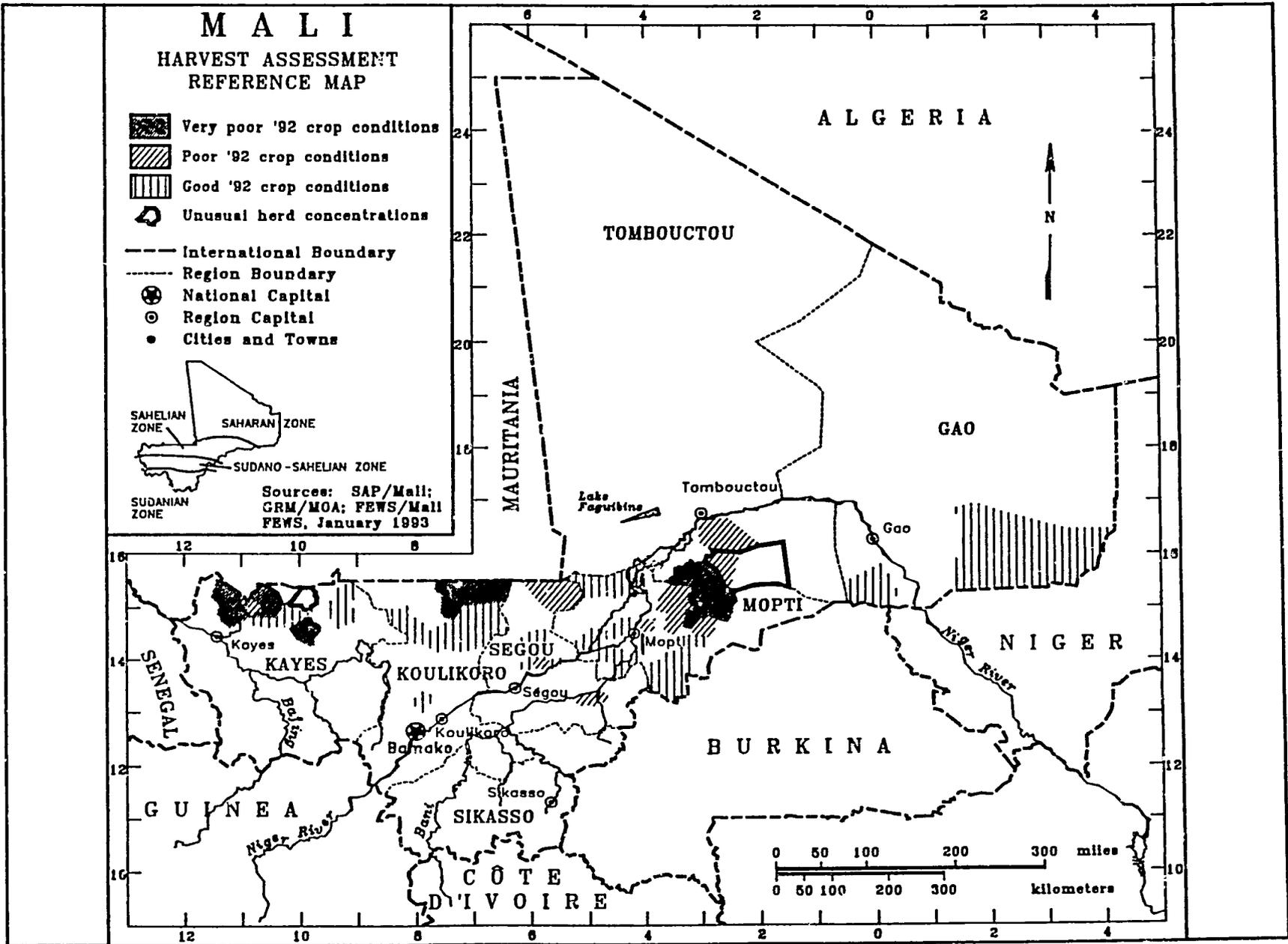
The harvest outlook for 1992/93 is poor for the fourth consecutive year. Although final estimates of production will not be available for several months, preliminary figures (72,753 MT net) provide a baseline for provisional cereal balance estimates. The currently accepted national deficit is 81,654 MT net, which includes 27,250 MT of cereal food aid pledged by donors. Another 51,000 MT is the target set by donors to help address the human consumption needs (5,000 MT towards this target has been announced by the EC and 44,000 MT is currently being requested by different donors). The vulnerable groups identified in the June 1992 *Vulnerability Assessment* remain unchanged. The gravity of the food situation is being addressed without delay. Nonetheless, it remains to be seen whether donor requests of their home offices will be met with positive results in full or in part and/or whether commercial cereal imports will then be able to close the cereal food gap for 1992/93.

Table 3: Mauritania Projected Food Needs for 1992/93 in MT

Wilaya	Population Total 1993	Cereal Needs	Total Production	Total Deficit	Percent Needs Met by Production
Hodh ech Chargui	241,262	39,808	10,212	(29,596)	26
Hodh el Gharbi	174,158	28,736	8,899	(19,837)	31
Assaba	184,517	30,445	2,141	(28,304)	7
Gorgol	199,587	32,932	12,398	(20,534)	38
Brakna	210,085	34,664	6,686	(27,978)	19
Trarza	195,607	32,275	19,544	(12,731)	61
Guidimaka	134,981	22,272	10,254	(12,018)	46
Tagant	61,106	10,082	2,619	(7,463)	26
Total	1,401,303	231,214	72,753	(158,461)	20
Agricultural Wilayas					
Other Wilayas	841,039	138,772	0	(138,772)	0
Total	2,242,342	369,986	72,753	(297,233)	19.5
Malian Refugees	32,000	5,280	0	(5,280)	—
New Total	2,274,342	375,266	72,753	(302,513)	19.3

Sources: Census Bureau (CEDES), FAO/CILSS evaluation results, UNHCR, FEWS Mauritania.

Map 4: Mali Reference Map



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Despite Modest Surplus: Pockets of Need Remain

Report released by USAID/Mali on December 17, 1992

SUMMARY

The 1992/93 crop season has been generally better than average, but not so favorable as that of 1991/92. The 2.15 million metric ton (MT) harvest will result in a 227,500 MT surplus.

Low prices for grain improve the access to cereals of consumers but increase the debt load of producers. Since many producers are consumers during the middle of the year, their position will be difficult. Most hard hit will be small landholders suffering poor harvests. The Government of the Republic of Mali (GRM) plans to distribute 5,300 MT of food aid to 197,000 people in areas of poor harvest.

Northern populations continue to be at-risk. This is due more to the lack of functioning markets, exchange mechanisms and public services than to harvest conditions. Civil authorities and development workers are calling for assistance to meet these needs.

FACTORS AFFECTING FOOD AVAILABILITY

Harvest Outcome

The 1992/93 harvest has been generally better than average, but is significantly lower than that of 1991/92. The rainy season arrived late in the northwest and in localities throughout the Sahelian zone. Rains ended abruptly in late August and early September, thus reducing yields in those areas having late planting dates.

Although river levels and the annual flood were generally satisfactory, both registered an early drop in August. No significant effect on flood recession rice production is expected; recession production of millet, sorghum and maize in *bas fonds* may be hampered.

Poor harvests are most significant in the northeastern part of Kayes Region, central Nara Cercle in Koulikoro Region and dry land areas to the west and north of the Inland Delta of the Niger River. Cereal banks do, however, exist in some of the areas hard hit by poor harvests.

The Government of the Republic of Mali (GRM) released regional estimates for the 1992/93 crop season based on surveys¹ conducted in August and September. Total 1992/93 cereal production is estimated at 2.15 million MT (see Table 4). This is 5.6 percent below estimates for the previous year, but 13.8 percent above the 1985-93 average.

Millet and sorghum production, down two percent from the average, reflects a continuing 7-year downward trend. However, the decrease in production is countered by a steady increase in rice production. Overall, there is an upward trend in total cereal production. This increase is occurring in the more highly capitalized *modern* sector, while the *traditional* sector may be experiencing falling levels of production.

Pastoral Conditions

Pastures entered the 1992 rainy season in mediocre condition. Many dry season ranges were overgrazed due to greater numbers of herds grazing for longer periods as a result of civil insecurity in traditional grazing areas. Most reports indicate that these pastures recovered satisfactorily and transhumance has begun a return to normal. Unusual concentrations are reported in the Southern Gourma Cercle of Tombouctou Region and the north-central Yelimane in Kayes Region.

Severe drought conditions in wet-season pastures in Mauritania will likely result in greater animal herd concentrations in corresponding dry-season destinations for transhumant herds. Further, an early end to the growing season in northern the Mopti Region and throughout the pasture zone of Tombouctou Region may result in poor pasture conditions by the onset of rains in 1993.

Existing Food Stock Information

Food stock is near normal according to GRM reports. The GRM Early Warning System (SAP) reports that household stock is adequate except in western Douentza Cercle of Mopti Region and in northwestern Kayes Region. In Mopti Region, however,

¹ Usually, detailed reports of this survey are available at mid-year; however, no 1991/92 report was released and thus FEWS was unable to disaggregate production below the regional level.

Table 4: GRM Regional Crop Harvest Estimates (MT)

Crop/region	1990/91	1991/92	1992/93	Avg: 85-93
Millet				
Gao	1,204	1,564	1,251	749
Kayes	4,620	2,947	1,854	14,650
Koulikoro	76,964	68,735	55,263	241,360
Mopti	183,882	238,586	190,868	195,151
Ségou	322,102	456,017	434,584	352,824
Sikasso	134,831	104,635	96,474	136,238
Timbouctou	13,404	17,412	13,930	20,091
Total	737,007	889,896	794,224	960,743
Sorghum				
Gao	1,578	2,050	1,685	4,868
Kayes	42,691	98,477	83,971	93,036
Koulikoro	131,398	228,639	196,858	145,453
Mopti	16,081	19,977	16,420	17,700
Ségou	149,084	252,624	240,626	122,355
Sikasso	185,802	132,043	161,556	172,296
Timbouctou	4,799	6,234	5,124	17,778
Total	531,433	740,044	706,240	569,399
Rice				
Gao	10,895	12,949	15,753	19,458
Kayes	531	1,195	8,536	406
Koulikoro	4,242	11,222	22,472	2,537
Mopti	50,377	67,770	81,953	62,927
Ségou	13,437	212,258	219,966	38,751
Sikasso	11,125	5,672	54,102	11,460
Timbouctou	21,387	42,389	51,568	18,232
Total	111,994	353,455	454,350	137,604
Maize				
Gao	—	—	—	—
Kayes	16,011	29,119	18,066	23,616
Koulikoro	31,660	56,629	48,776	31,300
Mopti	826	931	663	633
Ségou	11,475	26,065	15,480	16,207
Sikasso	136,607	144,031	135,822	129,289
Timbouctou	—	—	—	—
Total	196,579	256,775	218,807	200,863
Ponio				
Gao	—	—	—	—
Kayes	24	4,349	—	2,257
Koulikoro	—	2,650	—	1,448
Mopti	3,655	4,516	2,860	3,010
Ségou	12,572	18,270	13,627	10,756
Sikasso	5,517	10,722	10,175	6,434
Timbouctou	—	—	—	—
Total	21,768	40,507	29,836	22,101
Total Production	1,598,781	2,280,677	2,151,889	1,890,710

Sources and Notes: The estimates are based on GRM agricultural survey data. The 1991/92 estimate has not been officially released. The 1992/93 estimate is provisional and may be subject to revision. Kidal Region has no significant agriculture.

village associations hold large quantities of 1991 cereals which they have been unable to market.

In mid-December 1992, the GRM Agricultural Marketing Authority (OPAM) reported a national security stock total of 54,847 MT—95 percent of capacity. Commercial stock in

OPAM warehouses totaled 5,076 MT, which includes 3,831 MT in concessional grain provided by the U.S., France and Belgium.

Malian rice production parastatals have had difficulty marketing their stock. Commercial traders also have had

Table 5: FEWS/Mali Estimated Regional Cereal Balance for 1993

Region	POP. (B3)	REQ. (MT)	GROSS (MT)	NET (MT)	BAL. (MT)
Bamako	785.3	98.8	0.0	0.0	-98.8
Gao	348.3	64.6	15.9	12.7	-51.8
Kayes	1,155.4	197.7	40.9	94.2	-103.5
Kidal	36.9	6.9	0.0	0.0	-6.9
Koulikoro	1,322.7	291.8	313.9	269.5	-22.3
Mopti	1,349.3	304.3	278.6	232.6	-71.7
Ségou	1,457.7	301.9	916.6	741.6	439.6
Sikasso	1,406.2	305.3	460.8	372.3	67.0
Tirabouctou	490.5	108.7	61.4	49.7	-59.0
Total	8,352.2	1,545.2	2,088.0	1,772.6	227.5

Notes. Figures are expressed in the thousand metric tons. Population growth estimates are based on changes in regional populations between 1976 and 1987. Regional cereal requirements are estimated from a national average of 185 kg per person annually as used by USAID/Mali and adjusted based on revealed consumption behavior as reported by the GRM consumption survey. Net production subtracts milling losses from the harvest. Kidal was included in Gao calculations prior to 1992.

difficulty selling at profit their stock of rice imported under tariff concessions during the first part of 1992.

Projected Food Aid and Commercial Imports/Exports

Heavy demand from Mauritania for Malian grain has been reported by cereal traders who say that as much as 2,000 MT of millet and sorghum are being shipped weekly. This has led to speculation that privately held Malian commercial stock of these cereals may be significantly reduced. However, there have been reports that rice from Mauritania has been showing up in local markets along the Malian border. This may be a result of trade by Mauritians in high quality foreign rice for larger quantities of lower quality rice, cheaper coarse grains, or an effort to obtain foreign currency by Mauritanian traders.

Based on the results of the 1992 harvest and estimations of household cereal stock, SAP has recommended the distribution of 5,330 MT of cereal to 197,000 persons in three arrondissements of Kayes Region, five arrondissements of Mopti Region, and one arrondissement of Tombouctou Region. Further recommendations for distributions may be forthcoming following an assessment underway to determine needs in the northern zone of the country.

FACTORS AFFECTING FOOD ACCESS

Projected Food Consumption Needs

Based on GRM production estimates and adjusted USAID consumption rates, Mali should have a surplus of 227,500 MT before imports and exports (see Table 5). Even if production figures are 10 percent below these estimates, Mali should have a 50,000 MT surplus. The pattern of regional deficits is normal.

The deficit is accentuated in Mopti and Kayes regions as a result of poor harvests. Although regional deficits can be covered by national production, infrastructural constraints and civil unrest may interfere with trade. This will result in localized areas requiring assistance to meet food needs, particularly where purchasing power is reduced.

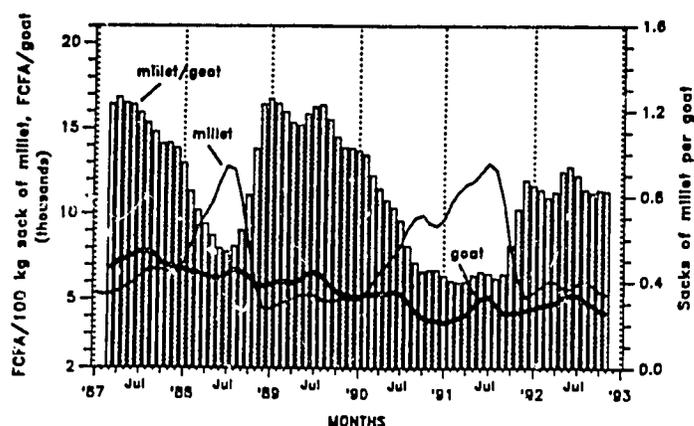
Economic Data

Cereal prices are registering normal seasonal declines throughout the country. The lowered prices have aided access by consumers but exacerbated the debt load of producers. Low farm-gate prices have reduced the ability of households to repay debts and also posed problems for village associations that depend on grain sales to repay marketing and capitalization loans. This situation may impose particular difficulties on producers who are also consumers at mid-year. Some slight, local price increases have been reported in areas of poor crop harvest, but mid-December (the time of this writing) was too early to determine if these increases indicated a trend.

The GRM Livestock and Meat Marketing Board (OMBEVI) reports that animal sales have been higher than in previous years, except in those zones affected by civil unrest. Prices for all livestock remain stable and at relatively normal levels, particularly for cattle.

Low cereal prices also have had a stabilizing affect on purchasing power, as indicated by the exchange value of one goat for 100 kg of millet. Purchasing power has stabilized in spite of a 5-year downward trend in goat prices (see Figure 1). Interestingly, goat prices are higher than the national average in some areas where poor harvests were experienced.

Figure 1: Mali, Goat-Millet Terms of Trade in 28 SAP Markets



Source: SAP/Mali; FEWS/Mali

UPDATE ON VULNERABILITY

Northern populations affected by civil unrest have been of primary concern for the past year. Special efforts have been undertaken to provide food assistance to these groups. The peace accords continue to hold and tensions have generally lessened. Development workers and civil authorities continue to emphasize the need to revitalize local market and exchange mechanisms as well as public health services.

A relatively small number of Malians have returned from Algeria to Kidal Region. There are about 35,000 refugees remaining in Algeria, 35,000 in Mauritania and 8,000 in Burkina Faso. These populations will require immediate assistance upon return. Their needs will extend beyond free food distributions. Medical assistance and economic development efforts also will be necessary.

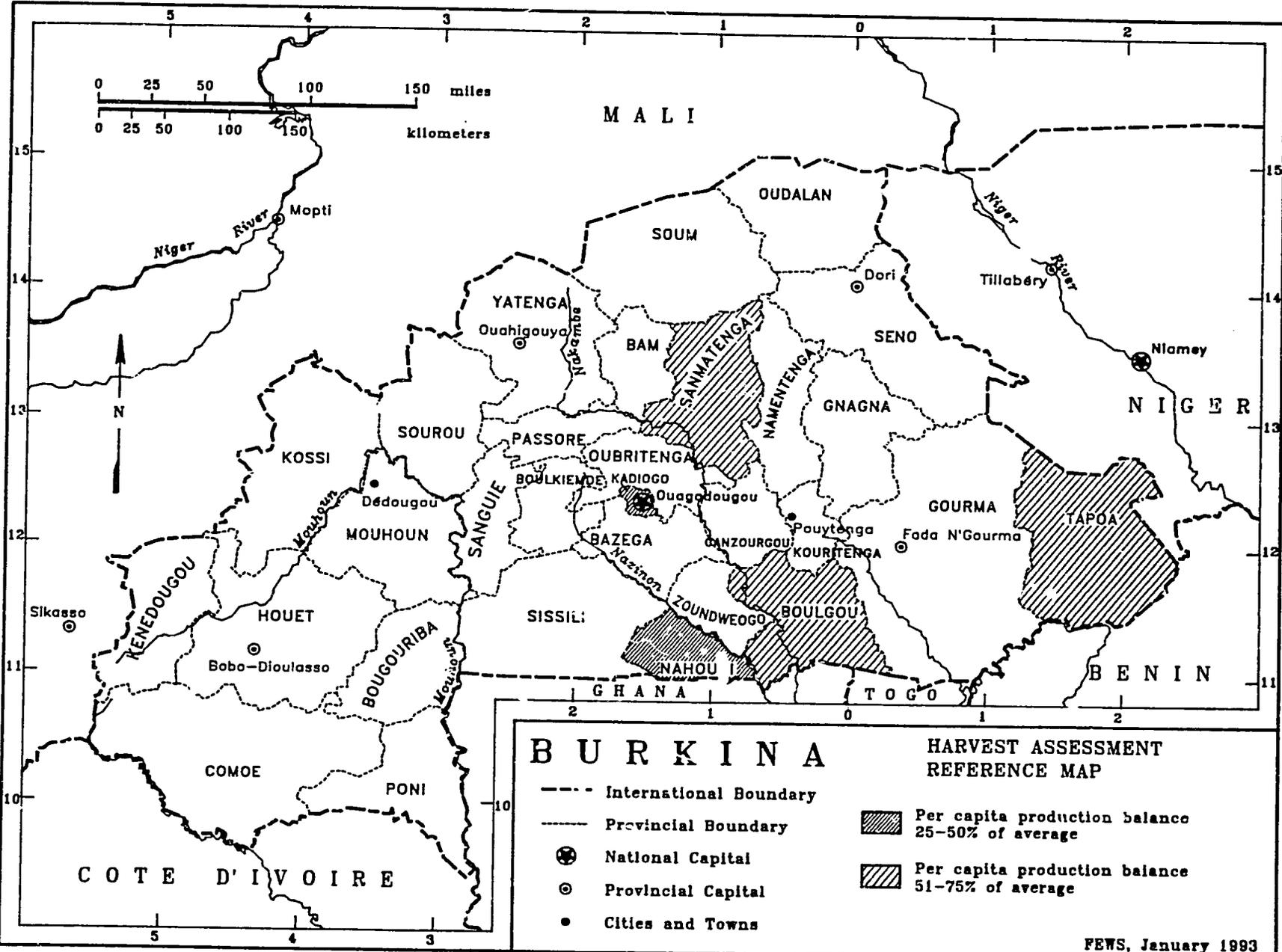
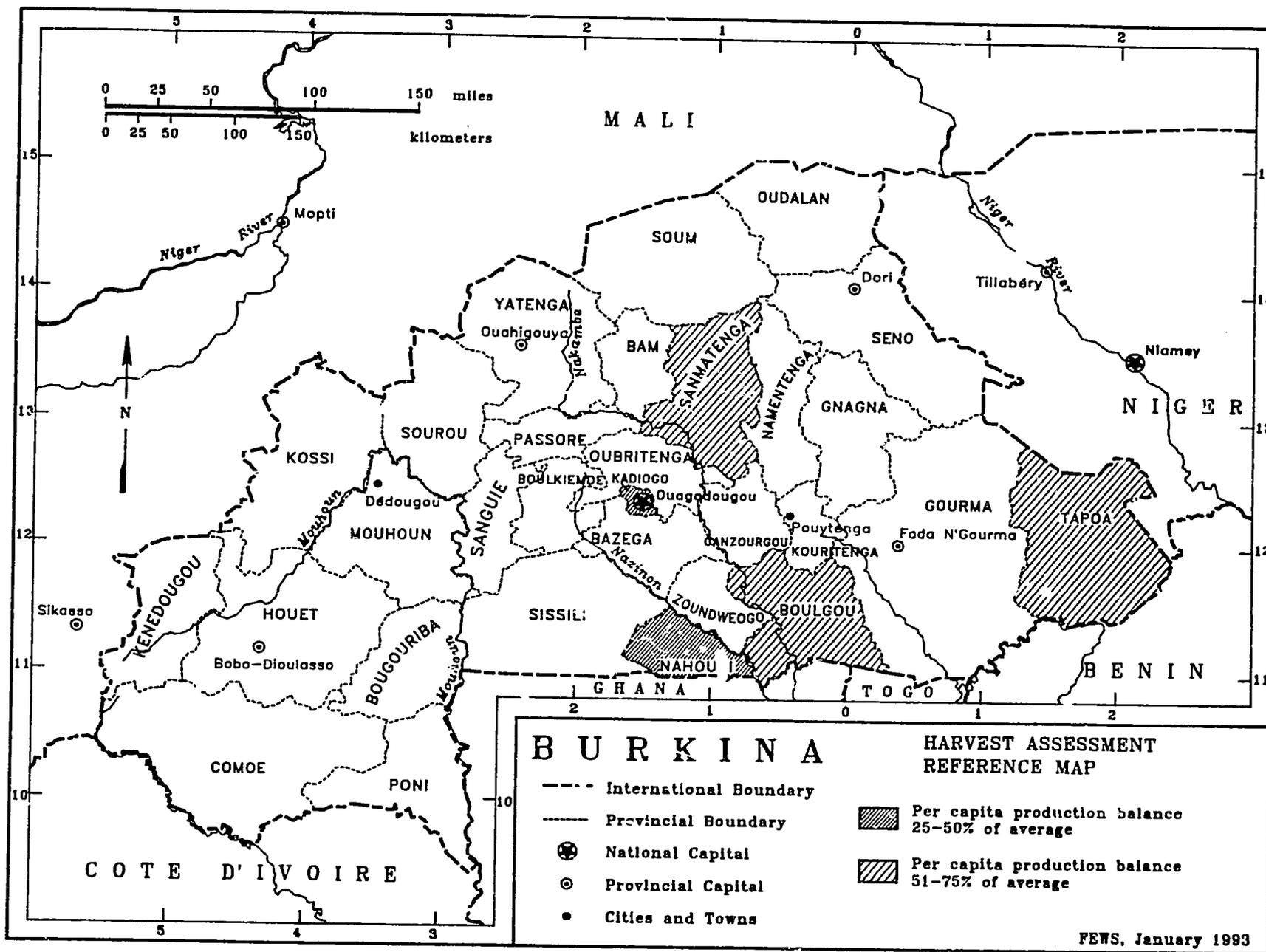
New Groups or Areas of Concern

Poor harvest conditions have made certain groups more vulnerable. Of particular concern are those populations who are solely dependent on small land holdings for crop production in northern Kayes, western Mopti, and southern Timbuctou regions. SAP has recommended distribution of cereals to these populations during the months of May and June 1993.

CONCLUSIONS

The estimated harvest is sufficient to meet national food needs. Where agricultural production contributes the greatest portion of individual income, market conditions may serve to accentuate credit and debt problems for producers who must sell their harvest to meet financial obligations. Reduced purchasing power, along with security and infrastructural problems, may constrain the ability of the national surplus to meet local cereal deficits. No major change in the level of currently vulnerable groups is expected as a result of the 1992/93 harvest. However, smallholder agriculturalists suffering poor harvests will be more vulnerable in mid 1993.

Map 5: Burkina Reference Map



BURKINA

Ample Rainfall Produces Surplus

Report released by USAID/Burkina on December 21, 1992

SUMMARY

Well distributed rainfall throughout most of the country produced a substantial cereal surplus. According to estimates released by the Government of Burkina, (GOB) an anticipated 131,000 MT cereal surplus is projected for the 1992/93 production year. Burkina is, therefore, not expected to require emergency food aid. Despite this favorable harvest, several years of below-average production in localized areas is expected to affect 500,000 smallholder agriculturalists. These smallholders have been depleting household resources for several consecutive years. Of this group, some 100,000 are estimated to be highly and extremely vulnerable.

FACTORS AFFECTING FOOD AVAILABILITY

Harvest Outcome

Cereal production for 1992/93 will be above the 6-year average and no emergency food aid imports will be required. These estimates are preliminary, but are used by the GOB to determine the quantity of food aid to request. The GOB estimates suggest a cereal production surplus (production minus consumption with no other cereal sources considered) of 131,000 metric tons (MT). This 80,000 MT surplus is similar to the FEWS *Pre-Harvest Assessment* estimate which was based on an analysis of NDVI satellite imagery (see inside backcover for an explanation of NDVI). The national cereal balance, which also includes such cereal sources as food aid and commercial imports, shows that Burkina will have a national surplus of almost 290,000 MT (Table 6).

In spite of this national cereal surplus, the GOB will need to address some regional deficits. FEWS expects production per capita to fall short of the 4-year average in Boulkiemde, Gnagna, Nahouri, and Tapoa provinces.

The average cereal production balance for the provinces is presented in column 1 of Table 7. Provinces in which land is more arable, or where alternative sources of income are limited, normally produce a large quantity of cereal per capita. Additionally, food insecurity in Burkina develops only after several years of less than favorable production. Hence, the difference from average per capita production per province may serve as

a rough indicator of where households have had an opportunity to accumulate increased wealth by selling surplus cereal. Columns 2-5 of Table 7 show the differences from average of per capita production for the past four years. Note the deficits in Sanmatenga, Gnagna, Nahouri and Boulgou. FEWS assumes households in these provinces are drawing down on household resources, spending less on health care and community development and, perhaps, eating less.

The Cereal Production Season Recapped

Rains arrived early in southern Burkina, in April, but drought stress in July and August reduced cereal yields. At Gaoua, in the southern province of Poni, rainfall for each of the 10-day periods in July, August and September was below the 30-year average. In contrast, central Burkina rains began in July, much

Table 6: FEWS Estimated National Cereal Balance for Burkina (MT)

Population, June 1993	9,700,000
Annual per capita consumption rate (kg)	190
1992/93 CEREAL CONSUMPTION REQUIREMENTS	
Expected 1992/93 Cereal Consumption	1,843,000
Replenishment of Stock	30,000
(not available for consumption)	
OFNACER	20,000
On-Farm	10,000
Total 1992/93 Cereal Requirement	1,873,000
1992/93 CEREAL SUPPLY	
Provisional Net 1992/93 Production	1,977,620
Available In-Country Stock (OFNACER)	25,000
Programmed Food Aid for 1992/93	24,600
CATHWEL	11,600
World Food Program	5,000
European Economic Community	1,000
AFRICARE	6,000
Save The Children	1,000
Expected 1992/93 Commercial Imports	135,000
Wheat	35,000
Rice	100,000
Total Available Cereal Supply for 1992/93	2,162,220
PROVISIONAL NATIONAL CEREAL BALANCE	289,220

Sources: Population, Institut National de la Statistique et de la Demographic; Consumption rate, CILSS Projet Diagnostique Permanent II; Replenishment of stock, Office Nationale des Cereales; Commercial wheat imports, Grande Moulin de Banfora; Commercial rice imports, Caisse de Perequeration.

Table 7: Cereal Production From 1989-91 and GOB Provisional Estimates for 1992 PPC*

Province	Net PPC		Difference From Average			4-Year Summary	VASZ Poor
	1985-90 Avg	1989	1990	1991	Provis 1992		
Sanmatenga	172	-25	-72	-53	-65	-214	
Gnagna	200	-17	-115	-33	-44	-209	**
Nahouri	114	-66	-69	-5	-57	-197	**
Boulgou	175	60	-136	-44	-68	-188	
Passore	177	-25	-107	24	-12	-119	
Boulkiemde	162	-11	-29	-31	-37	-109	**
Tapoa	202	24	24	-64	-74	-90	**
Comoe	249	-10	-29	26	-48	-61	
Kadiogo	15	28	-11	-9	-9	-1	
Gourma	219	42	-43	15	4	19	
Sanguie	189	22	-73	66	50	66	
Ganzourgou	205	31	-15	35	36	86	
Houet	199	50	-20	30	27	88	
Kouritenga	100	42	-74	84	38	90	**
Bazega	175	-77	-40	111	109	102	**
Oudalan	98	25	26	63	-11	102	
Bam	142	0	-73	100	87	114	
Yatenga	114	7	-47	133	44	137	
Sissili	200	80	4	39	34	157	**
Oubritenga	178	38	-14	69	70	163	**
Namentenga	159	2	23	64	76	164	**
Zoundweogo	171	-35	-41	169	71	164	
Mouhoun	223	29	-29	55	117	172	
Bougouriba	229	-23	10	97	91	175	
Kenedougou	279	31	2	91	66	191	
Sourou	169	25	-66	83	149	191	**
Seno	170	57	-5	100	55	206	
Poni	199	-8	129	60	51	230	
Soum	112	-14	-17	160	118	247	
Kossi	273	52	28	200	187	467	

Source: Direction de Statistiques Agropastorales.

Notes: To capture the differences in the importance of cereal production for each province, FEWS uses the 6-year average cereal balance expressed as per capita cereal production (PPC), shown in column 1. The province-to-province variation in per capita production can be explained in large part by the availability of good, arable land and the opportunity for other sources of income, such as salaries, cotton production, livestock and livestock product sales and remittances from outside of Burkina.

FEWS also considers the cereal production balance after four years to capture the affect of several bad years on food insecurity. Columns 2-5 show the differences from average for the past four years, giving a clear picture of where households have been earning more money than usual on cereal production and where households have been earning less. The "***" mark provinces that are poor and have very few sources of household income.

later than normal. Timely rains during the rest of the season, however, helped reduce the impact of this lateness on cereal crops throughout most of region. Severe drought in Tapoa and Gourma (southeastern Burkina) in July, reduced plant stands and yields.

Early rains provided enough moisture in the northern Sahel provinces for the 85-day millet varieties grown there to reach successful maturity. Rains arrived in late June and continued until mid-September over much of the region. Point rainfall

data from Dori, northern Seno Province, showed some moisture stress in July and an early end to the rains in the first 10-day period of September.

Point data for western Burkina show adequate moisture over most of the growing period. At Dedougou, in the province of Nahouri, rains arrived in June. However, early July rainfall was below normal. From the end of July until the end of September, rains were sufficient for good cereal production.

The Vegetation Index (NDVI)

In general, rainfall amounts were adequate to produce average or above average "greenness" over most of Burkina. Comparisons of maximum NDVI for 1992 with the 6-year average maximum NDVI reached in a season show that northern Burkina was much greener than average in 1992. Above-average greenness often indicates above-average cereal production and above average pasture quality.

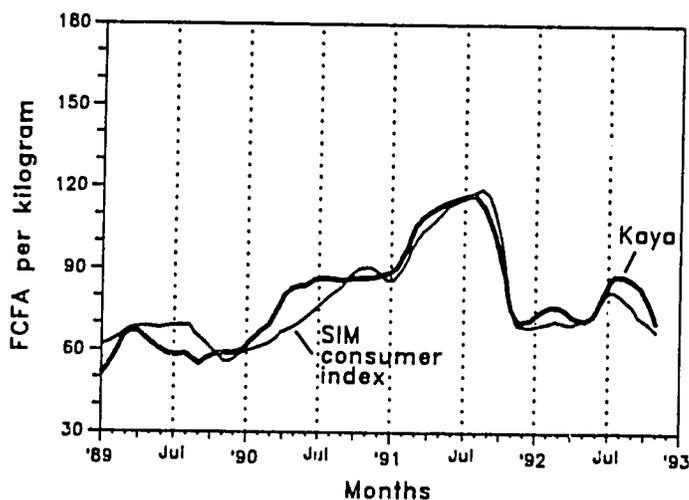
Eastern Tapoa and Nahouri were less green than average, an indication that cereal and pasture production is less than normal. In contrast, the lack of any significant dry periods in northern and western Burkina and the above-average greenness indicate that these areas will have above-average production.

There were incidents of drought stress that probably reduced cereal yields significantly. One of these incidents occurred in early July in the province of Nahouri in southern Burkina and the other occurred in early September in Gourma. Other areas of late season drought, which did not show up well due to missing data, were in southern Mouhoun in August and in eastern Tapoa in early September.

FACTORS AFFECTING FOOD ACCESS

In addition to shortages of money due to poor cereal production, high cereal prices usually follow poor cereal production years. The high prices hurt smallholder agriculturalists who do not produce much and who do not have the means to obtain cereal from markets where prices are lower. An example of

Figure 2: Burkina Nominal Millet Price at Kaya



Source: OFNACER

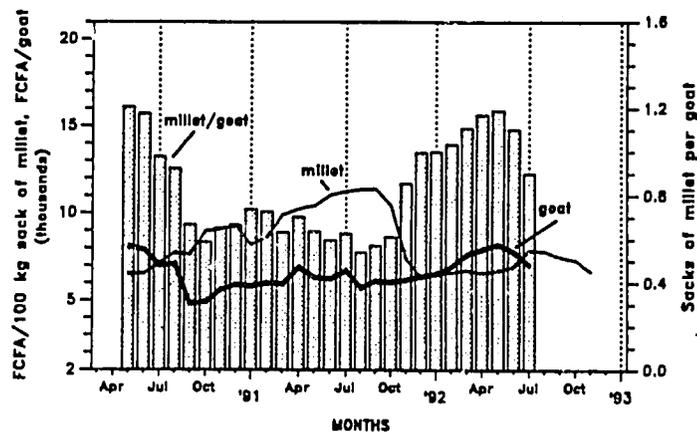
this process can be seen in a cereal deficit zone in Kaya. Figure 1 shows the relationship between millet prices averaged over 18 markets in Burkina (Consumer Index) and the price in Kaya, the largest market in Sanmatenga, a cereal deficit zone for three consecutive years. Note that prices in Kaya were higher than the Burkina Consumer Index in 1990, a poor year, and in 1992.

The livestock market, as indicated by cereals/livestock terms-of-trade, has been healthy, although a downward trend began in June of 1992. The bars of Figure 2 show the evolution of the terms-of-trade between millet and goats averaged over three major markets from 1990 to July of 1992. The values for terms-of-trade, presented on the right-hand axis, show kg of millet purchaseable with the sale of one male Sahelian goat. In poor cereal production years, such as 1990, farmers sell their goats to purchase cereal. This inflates the number of goats on the market and goat prices usually decline. At the same time cereal prices are high, further degrading the household resources of people who must purchase cereal.

UPDATE ON VULNERABILITY

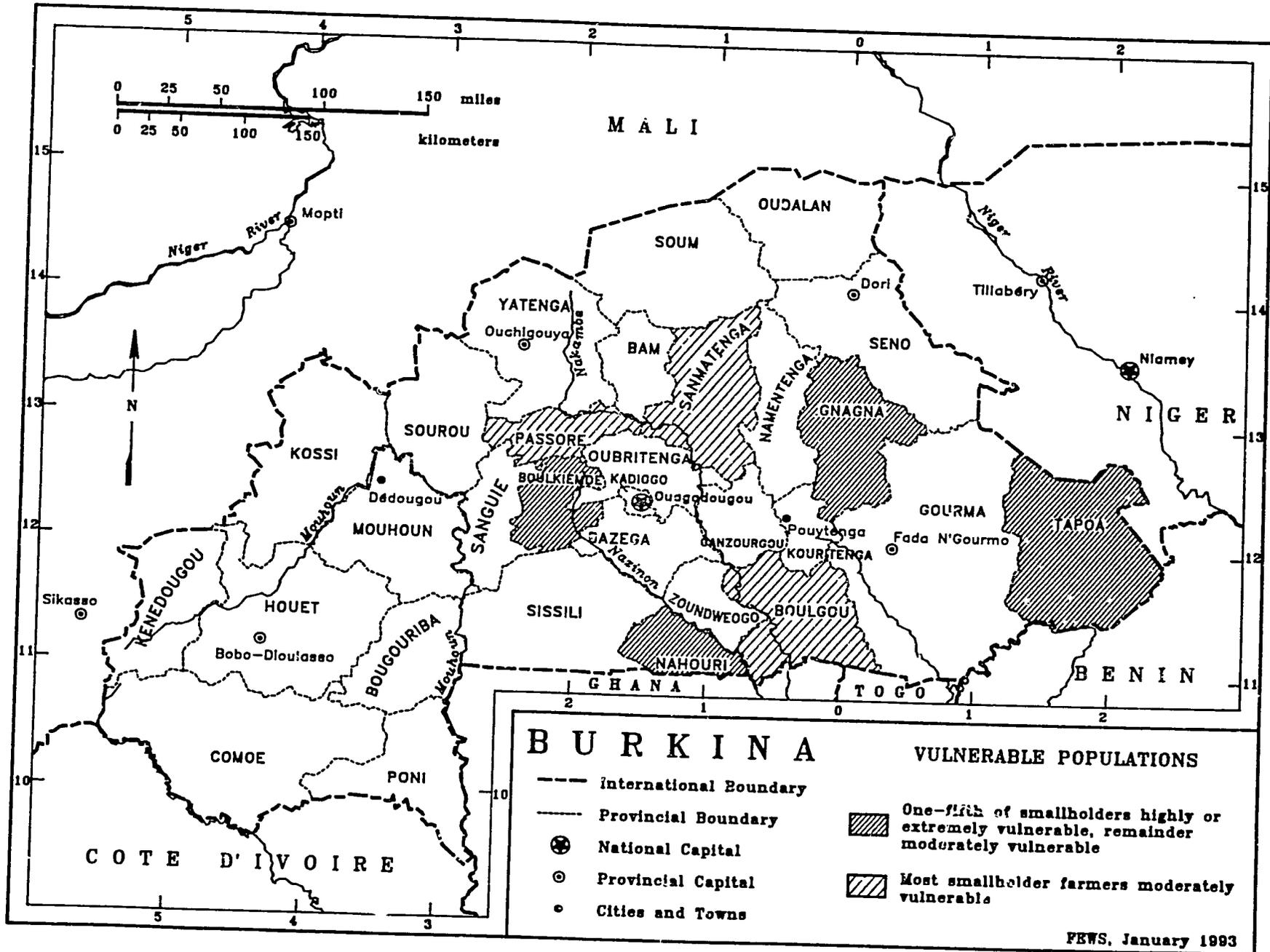
Smallholder agriculturalists, most of whom reside in the provinces of central Burkina, are expected to experience greatest vulnerability to food stress (see map 6). The situation appears to be worse for smallholders in Nahouri, Tapoa, Boulikemde and Gnagna provinces where food insecurity vulnerability is exacerbated by generally low purchasing power as well as previous and current poor harvest outcomes. FEWS/Burkina estimates that 100,000 smallholder agriculturalists in these provinces are highly and extremely vul-

Figure 3: Burkina Terms of Trade Between Goats and Millet



Source: MAE/PSA

Map 6: Burkina Vulnerable Populations



nerability to food insecurity; the remaining 400,000 are moderately vulnerable.

In addition to reduced purchasing power due to poor cereal production, smallholder agriculturalists affected by poor harvests must contend with the inflated cereal prices that usually follow poor cereal production years. These vulnerable people often are unable to access markets that are unaffected by availability-driven price inflation.

Agro-pastoralists

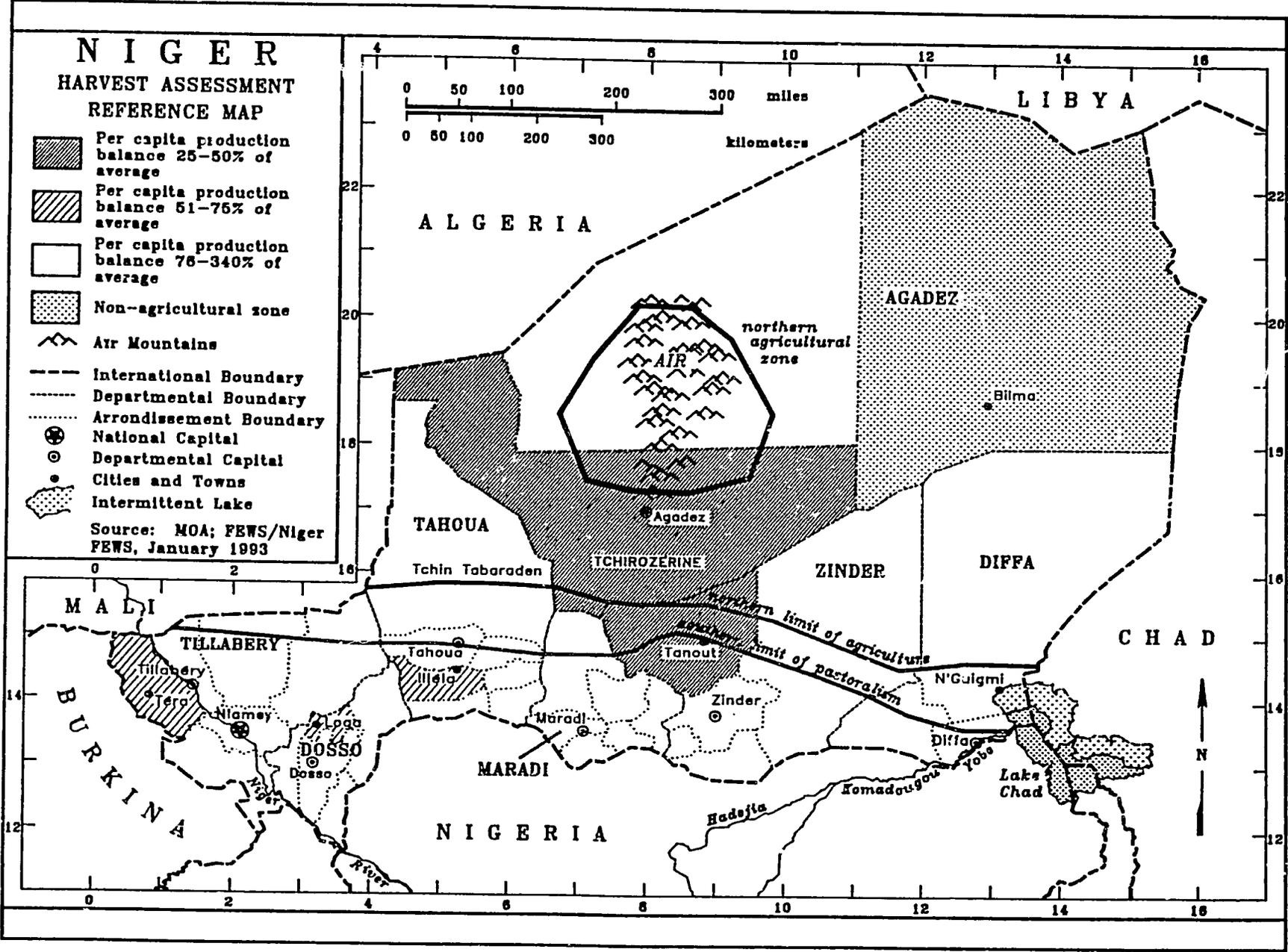
Livestock is a source of savings for a large percentage of Burkina farmers. Pasture quality is the best indicator of the

health of this sector of the economy. In general, pastures over most of the country are in good condition and have been for two years. Agro-pastoralists are, therefore, expected to do well.

CONCLUSIONS

The provisional cereal production estimates from the GOB and FEWS suggest that production will be above the 6-year average for the second consecutive year. Emergency food aid will not be required, although the GOB will need to monitor closely (and perhaps provide some assistance to) 100,000 highly and extremely vulnerable smallholder agriculturalists in several provinces where drought has produced below-average cereal production for several consecutive years.

Map 7: Niger Reference Map



Pockets of Severe Hardship Regions of Plenty

Report released by USAID/Niger on December 24, 1992

SUMMARY

Government of Niger (GON) data suggest a net cereal supply balance of 322,083 metric tons (MT) for the 1992/93 consumption year. Despite this surplus, this update of the FEWS Vulnerability Assessment indicates that approximately 188,000 people are extremely vulnerable and 542,000 are highly vulnerable to short-term food insecurity (see Appendix for FEWS' definition of vulnerability). These people will require relief or mitigation assistance before the 1993 harvest. An additional 524,700 persons are considered moderately vulnerable and will require close monitoring. The GON has requested 133,000 MT of assistance for 2.2 million persons. Donor assistance options have not been fully explored. USAID/Niger is making \$200,000 available for relief and mitigation interventions under the Disaster Preparedness and Mitigation Project.

FACTORS AFFECTING FOOD AVAILABILITY

Harvest Outcome

According to figures from Niger's Ministry of Agriculture and Livestock (MOA), the 1992 cereals harvest was 17 percent above the total 1985-91 average, but significantly below average in key regions. The MOA estimate of 2.17 million MT gross production of millet and sorghum for 1992 compares with 2.01 million MT in 1991 (Table 8). Of seven Niger departments, only Diffa reported 1992 cereal production surpassing 1991 figures. In addition, production of other important rainfed crops, such as cowpeas, onions and peanuts, is reported as far inferior to that of 1991.

Except Agadez, all Niger departments registered overall millet and sorghum production above the 1985-91 average. On average, however, all departments, except Diffa, produced an average 20 percent less cereal this year than in 1991. Arrondissements in each department experienced production levels considerably lower than their respective averages. Cereal production in all arrondissements of Diffa Department was considerably higher than both the average and 1991 levels. Of

the 35 arrondissements in Niger, Tanout (Zinder Department), Illéla (Tahoua Department) and Loga (Dosso Department) experienced the poorest relative production.

Tanout experienced an extremely poor cereal harvest, producing only 19 percent of its 1991 harvest and 31 percent of its average production. Illéla produced 52 percent of its 1991 total and 66 percent of average. Production in Loga was 51 percent of 1991 production, and 70 percent of average. Overall, rainfed crop production was lower than in 1991 in 27 arrondissements and lower than the average in 11 Niger arrondissements.

Pastoral Conditions

The Ministry of Agriculture (MOA) reports that pasture and crop residue production is substantially surplus to estimated needs. Although cumulative 1992 rainfall was generally less than in 1991, a good distribution in space and time led to good biomass production in many areas. There was also a surplus production of agricultural residues in all departments, except Diffa and Agadez. The MOA has projected that if adequate water supplies for livestock remain available and no major grass fires occur, overall forage supplies should be more than sufficient for animals expected to remain in Niger during the 1993 dry season.

In general, there was very little livestock movement towards the far north during 1992. Most herds were camped near the southern limit of the pastoral zone due to concerns about security in the northern pasture areas. If there is no resolution of the conflict in the north, it may be anticipated that herds will remain in the more southern areas throughout most of the 1992/1993 consumption year. This may lead to crowding in areas with good fodder, conflicts with farming populations, over-extending of land carrying capacity and resulting shortages of animal fodder before the 1993 rainy season.

Food Stock

As of October 31, there were approximately 64,100 MT of millet reported in security stock. In addition, 1,412 MT of rice were in stock with the rice parastatal and the national flour mill held 3,121 MT in wheat grains. Donor carry-over stock totaled

Table 8: Estimated 1992/93 Cereal Balance for Niger (MT)

Agricultural Year	11/92-10/93
National Cereal Consumption Rate (KG/CAP/YR)	190/220
Population (1992/93)	8,576,757
Total Requirement	1,835,686
National Cereal Production	
Net Rainfed Millet/Sorghum	1,847,794
Net Irrigated Production	49,509
Net Off-Season Production	13,145
Total Net Production	1,910,448
Production Balance	74,762
Available Stock	
Public Reserve Stock	64,092
Public Working Stock	4,533
Commercial Stock	3,059
On-Farm Stock	54,500
Donor Stock	8,546
Total Stock	134,730
Cereal Exports	0
Domestic Cereal Supply	2,045,178
Cereal Imports	
Commercial Cereal Imports	100,000
Program Food Aid Imports	13,311
Total Cereal Balance	322,803

Sources: FEWS/Niger population projection from recently completed 1988 census using population growth rates from Census Bureau; USAID/Niger consumption requirement (190 kg/year for nomad and urban populations; 220 kg/year for farming populations).

Rainfed cereal production statistics for 1985-92; irrigated production at 1991's level (MOA production statistics); off-season production as 1991's estimate; 1992/93 CILSS/FAO on-farm stock estimate; situation as of September 30, 1992 for commercial stock (Ministry of Economic Promotion Statistics); situation as of end of November 1992 for all other stock; commercial imports at last year's levels (CNUST statistics); WFP statistics on 1992/93 donor pledges of food aid imports.

Notes: All production figures are net of gross by 85 percent; estimated balance equals estimated production minus the consumption requirement. Kilograms per capita equals production divided by population. Percent requirements met equals estimated production divided by cereals requirement. Percent requirements met on average equals the mean of the percent requirements met by each harvest from 1985 to 1991. Irrigated and off-season cereal production includes rice, wheat, sorghum and maize.

The consumption requirement of over 1.8 million MT is calculated by applying the USAID consumption rates to 1993 population projections based on the census of 1988 and arrondissement-level growth rates from the Census Bureau.

Total stock of approximately 113,000 MT include: public reserve stock (security stock); public working stock from the national rice parastatal and the flour mill; commercial stock as reported by the Ministry of Economic Promotion; on-farm stock estimated at last year's level; and donor stock (approximately 8,546 MT of various cereals held by the WFP, German reserve stock project and similar donor activities). Anticipated cereal imports of approximately 113,000 MT reflect commercial cereal imports at last year's estimate level and current food aid pledges from the European Community and WFP. Bilma Arrondissement (Agadez Department) was not included in this assessment because of a lack of available data.

approximately 8,546 MT; on-farm carry-over stock are estimated at 54,500 MT. All reserves are lower than those reported for 1991/92.

Projected Food Aid and Commercial Imports/Exports

On December 12th, the GON made a formal request to donors for 133,000 MT in food assistance for 2,287,097 people in 2,954 cereal deficit villages. The request asked for an immediate 53,000 MT for the most vulnerable populations, and an additional 80,000 MT for those less vulnerable to see them

through the difficult *soudure* or hungry period before the next harvest.

The World Food Program (WFP) reports that expected project food aid for the 1992/93 consumption year includes approximately 1,403 MT from the European Community and 11,908 MT for WFP's regular program. Donors have made no other pledges of project or emergency food aid to date.

The GON estimates commercial cereal imports of approximately 100,000 MT in 1993. The 1992 estimate was also 100,000 MT. Both are mid-way the 1991 and 1989 import estimates of 130,000 MT and less than 67,000 MT, respectively.

Table 9: Niger, 1992/93 Sub-National Production Balance for Rainfed Millet and Sorghum (MT)

Department	Net Production 1992/93	Consumption Requirements	Estimated Balance	Percent Needs Met
Niamey City	12,937	93,678	(80,741)	14
Tillabéry	326,824	341,847	(15,023)	96
Dosso	297,860	265,995	31,865	112
Tahoua	331,433	323,366	8,066	102
Maradi	432,155	359,621	72,534	120
Zinder	405,070	355,600	49,470	114
Diffa	40,802	42,019	(1,217)	97
Agadez	712	53,560	(52,848)	1
Total	1,647,794	1,835,686	12,107	101

Sources: FEWS/Niger population projection from recently completed 1988 census using population growth rates from Census Bureau; USAID/Niger consumption requirement (190 kg/year for nomad and urban populations; 220 kg/year for farming populations).

Rainfed cereal production statistics for 1985-92; irrigated production at 1991's level (MOA production statistics); off-season production as 1991's estimate; 1992/93 CILSS/FAO on-farm stock estimate; situation as of September 30, 1992 for commercial stock (Ministry of Economic Promotion Statistics); situation as of end of November 1992 for all other stock; commercial imports at last year's levels (CNUT statistics); WFP statistics on 1992/93 donor pledges of food aid imports.

Notes: All production figures are net of gross by 85 percent; estimated balance equals estimated production minus the consumption requirement. Kilograms per capita equals production divided by population. Percent requirements met equals estimated production divided by cereals requirement. Percent requirements met on average equals the mean of the percent requirements met by each harvest from 1985 to 1991. Irrigated and off-season cereal production includes rice, wheat, sorghum and maize.

The consumption requirement of over 1.8 million MT is calculated by applying the USAID consumption rates to 1993 population projections based on the census of 1988 and arrondissement-level growth rates from the Census Bureau.

Total stock of approximately 113,000 MT include: public reserve stock (security stock); public working stock from the national rice parastatal and the flour mill; commercial stock as reported by the Ministry of Economic Promotion; on-farm stock estimated at last year's level; and donor stock (approximately 8,546 MT of various cereals held by the WFP, German reserve stock project and similar donor activities). Anticipated cereal imports of approximately 113,000 MT reflect commercial cereal imports at last year's estimated level and current food aid pledges from the European Community and WFP. Bilma Arrondissement (Agadez Department) was not included in this assessment because of a lack of available data.

National Cereal Balance

Niger's overall 1992/93 cereal balance (shown in Table 8) is a surplus of 322,800 MT. The production balance¹ itself is a surplus 75,000 MT.

Globally, the 1992 cereal production figures differ only slightly from the FEWS pre-harvest projections presented in the September *Pre-Harvest Assessment*, but there are major differences in these figures at the department and arrondissement levels. The figures show much higher production in Diffa, Agadez and Tahoua departments (83, 33 and 20 percent, respectively), and much lower production in Tillabéry and Dosso departments (27 and 14 percent, respectively) than forecasted in the *Pre-Harvest Assessment*.

¹ The production balance is domestic cereal production minus consumption needs.

FACTORS AFFECTING FOOD ACCESS

Projected Food Consumption Needs

With just over 100 percent of the 1992/93 national consumption requirement likely to be met by this year's rainfed production, the National Cereal Production and Consumption Balance (shown in Table 8) reveals a slight national rainfed production surplus of 12,000 MT.² However, significant regional and local shortages exist throughout the country. These shortages are illustrated by the fact that none of Niger's seven departments produced surpluses in all arrondissements. Country-wide, and as illustrated in Table 9, only Maradi, Dosso and Zinder departments produced significant overall surpluses. At a more

² The rainfed production balance is calculated using two variables: estimated rainfed millet and sorghum production and projected cereal consumption requirements. Rainfed millet and sorghum production comprises 95 percent of total cereal production in Niger and 70 to 80 percent of total food intake. The cereal consumption requirement is determined by applying the USAID/Niger cereal consumption rate to projected population for 1993.

local level, the 1992 cereal production is not expected to meet consumption requirements in 13 of 35 Niger arrondissements.

The greatest deficit production occurred in Ouallam, Loga, Illéla and Tanout arrondissements, where 78, 69, 57 and 52 percent of consumption needs, respectively, are expected to be met. Production in Téra, Tillabéry, Keita, Mayahi and Magaria arrondissements also failed to meet expected consumption needs. Of the above arrondissements, only Ouallam and Tillabéry are slightly deficit on average; all other arrondissements listed are normally surplus.

All arrondissements in Diffa Department (Mainé Soroa, Diffa and N'Guigmi) are normally deficit; however, production this year is expected to nearly meet consumption requirements. As expected, production in largely pastoral Arlit and Tchirozérine arrondissements was insignificant relative to expected cereal consumption needs. As in the past, both will be dependent on cereal supplies from areas in the southern agricultural zones of the country.

Economic Overview

Cereal Market

Data from the national Cereal Price Market Information System (SIM) indicate that millet prices fell steadily throughout most of the country from September through the end of November, but prices in Agadez Department remained at high levels. During this period, there were price declines of 33, 22, 22, 18, 14, 12 and 9 percent in Diffa, Dosso, Tillabéry, Tahoua, Maradi Zinder and Agadez departments, respectively. Even so, the price of a kilogram of millet in Agadez Department in November was over 80 French West African francs (FCFA), while in the rest of the country the average price was under 60 FCFA (see Figure 4).

Prices were higher in November in Agadez, Zinder and Tillabéri departments (22, 6 and 8 percent, respectively) compared with millet prices in November, 1991. Prices in November, 1992, were generally lower than the 1987-91 average for November, however, in Agadez prices were 16 percent higher. Higher prices in Agadez are due to increased transportation costs resulting from the security situation and exacerbated by extremely poor 1992 cereal production in Tanout Arrondissement, usually Agadez' main supplier of cereals.

Livestock Market

Data from departmental livestock services for September through November 1992 indicate that animal prices were generally too unsettled during that period to observe a clear trend. Despite short upswings and relative downturns, the overall result for the period seems to be that animal prices in most areas are near the same levels now as in September.

Since August in most of the country, generally stable animal prices in combination with falling millet prices have resulted in markedly improved herder terms-of-trade (defined as kilograms of millet obtainable per unit adult male goat.) In Agadez, however, the high cereal prices have resulted in unfavorable terms-of-trade for herders.

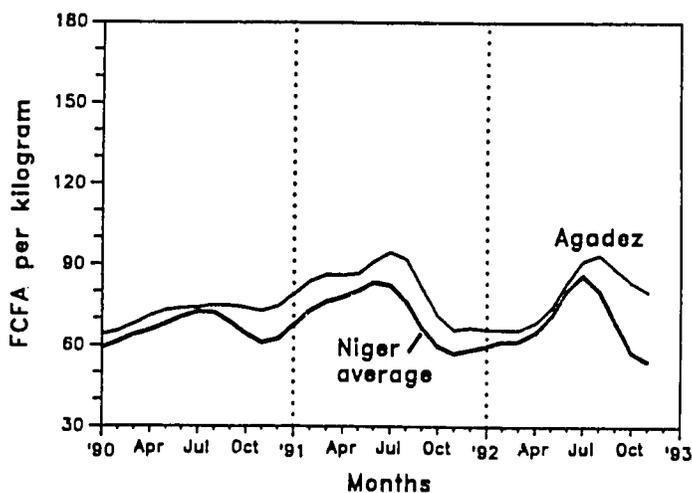
Other Economic Data

Although final production figures are not available, reports from the MOA and the field indicate that cowpea production is substantially below 1991's record levels. Cowpea prices in producing areas were at an average 88 CFA per kilogram in November, up from 78 CFA in November, 1991, and can be expected to rise substantially in the next few months. Continuation of high prices for cowpeas, a major cash crop in the trade with Nigeria and excellent terms-of-trade for millet should ensure good food purchasing power for successful 1992 cowpea producers.

In the Arlit area, the near 50 percent decline in uranium production and uranium's already low price on world commodity markets have led to massive worker layoffs. These factors will produce increased vulnerability to food insecurity for major segments of the area's population.

Reports from Agadez indicate that most alternative income-generating activities have ceased. It appears that only a few shopkeepers have money. These shopkeepers are lending to the general population at high interest rates.

Figure 4: Niger, 1990-92 Millet Prices, Agadez vs. the National Average



Source: GON/OPVN/SIM; FEWS/Niger

Table 10: Location, Numbers and Vulnerability Levels of Most At-risk Populations in Niger

Arrondissement/Department	Vulnerability Level	Number of People Affected	Percentage of Total Populations	SAP Vulnerability Rating
Tanout	Extremely	188,000	87	28
Magaria (Zinder)	Moderately	188,000	47	16
Tchirozérine	Highly	93,000	100	18
Arlit	Highly	107,000	100	17
Agadez City (Agadez)	Highly	58,000	100	22
Tillabéri	Highly	74,000	44	21
Ouallam	Highly	101,000	47	27
Filingue	Moderately	151,000	46	18
Téra (Tillabéri)	Moderately	3,700	1	21
Loga (Dosso)	Highly	31,000	29	27
Illéla	Highly	78,000	39	15
Tahoua (Tahoua)	Moderately	108,000	49	15
Mayahi (Maradi)	Moderately	10,000	4	14
Diffa	Moderately	60,000	84	19
N'Guigmi (Diffa)	Moderately	4,000	15	17
Totals	Extremely	188,000	2	
	Highly	542,000	6	
	Moderately	524,700	6	
	Aggregate	1,254,700	15	15

Source: FEWS/Niger and SAP/Niger.

Security Situation Affecting Food Access

Civil unrest in northern areas of the country continues to have a substantial impact on normal migrations of populations and animals and on the normal flow of cereal stock from southern areas of the country. The situation has prompted the National Cereal Marketing Board (OPVN) to transport cereal stock to the region via military convoy, exacerbating high food staple prices. Private traders of cereals may soon find it necessary to take similar precautions.

Animal migrations to northern pastures also have declined. Reports indicate that even normally sedentary populations are migrating southward due to the security situation. The USAID Mission is continuing to monitor the situation.

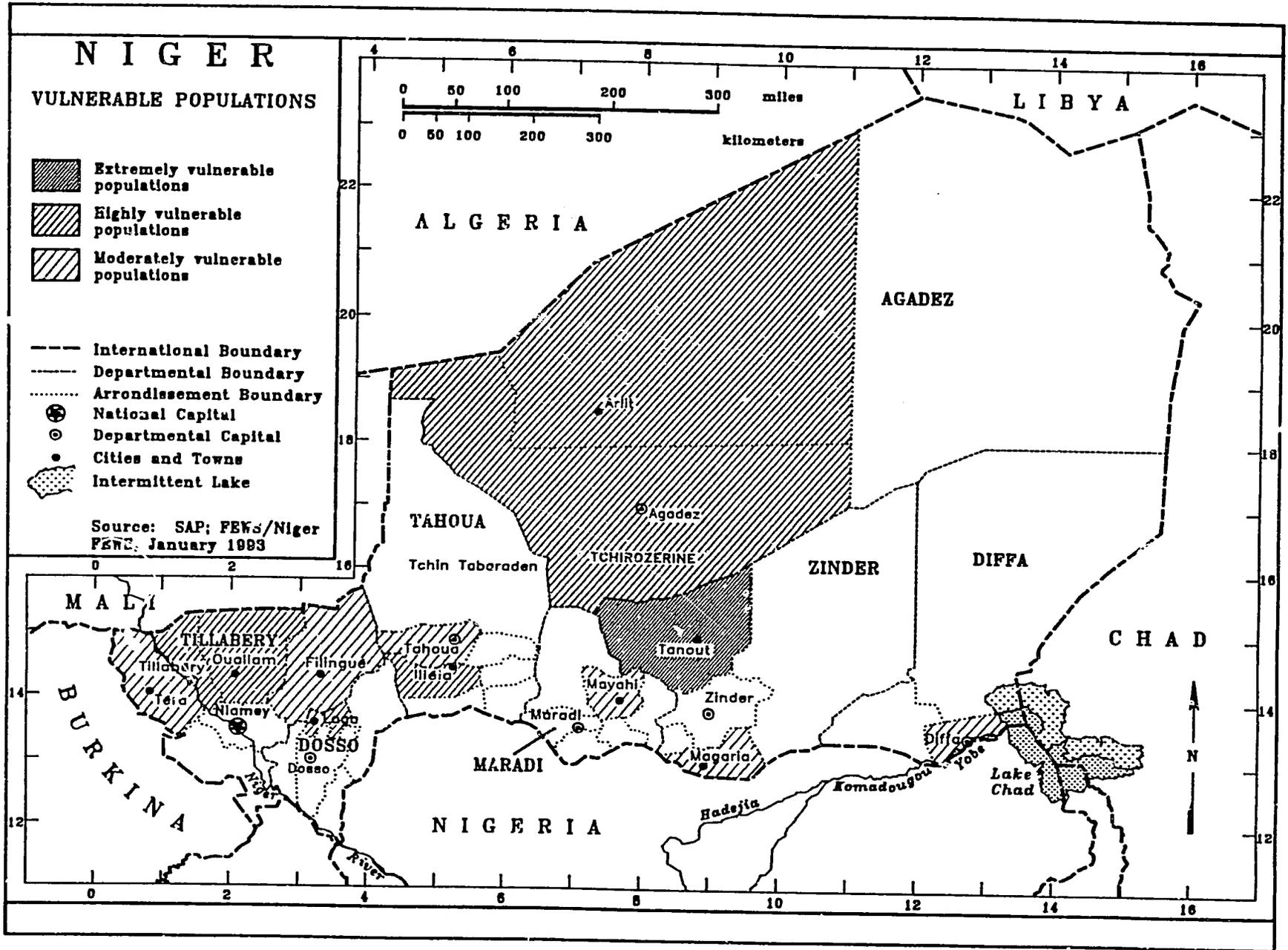
UPDATE ON VULNERABILITY

Farmers and Agro-pastoralists

Zinder Department: Up to 188,000 (Table 10) people in Tanout Arrondissement, which usually produces twice its consumption needs, are rated extremely vulnerable to food insecurity. Farmers and agro-pastoralists in the arrondissement suffered a devastating harvest—31 percent of average. Cereal producing areas in the department, such as Bakin Birji, normally provide much of the cereal supply to Agadez Department. Cereal prices in the arrondissement are relatively high and field reports indicate buying power is low. Some populations are reported moving south into Magaria Arrondissement. The National Early Warning System (SAP) gave Tanout its highest vulnerability rating for the country.³

Map 8: Niger Vulnerable Populations

Niger Harvest Assessment



Agadez Department: Approximately 80,000 people in Tchirozérine and Arlit arrondissements continue to be rated as at least highly vulnerable. Agro-pastoralists in western Agadez Department are generally sedentarized herders who in an exceptionally good year meet no more than 10 percent of their consumption requirements from cereal production. Their remaining requirement must be met through cereal purchased with income from other types of production, particularly livestock sales. Unfortunately, high cereal prices and low livestock terms-of-trade continue. Civil insecurity complicates vulnerability in the area by limiting access to food stocks and crippling alternative income generation. The SAP rated Tchirozérine and Arlit very high in its vulnerability ratings.

Tillabéry Department: Approximately 175,000 farmers and agro-pastoralists in Tillabéry and Ouallam arrondissements are rated as highly vulnerable. Overall, cereal production in the department is deficit this year. For example, Ouallam and Tillabéry arrondissements will meet only an estimated 78 and 83 percent of consumption requirements, respectively. Both arrondissements also received very high vulnerability ratings from the SAP.

Dosso Department: Approximately 31,000 farmers and agro-pastoralists in Loga Arrondissement are rated as highly vulnerable. Cereal production in Loga was only 70 percent of average and will meet less than 70 percent of consumption requirements. Loga is 23 percent surplus on average in cereal production and, therefore, is unaccustomed to grain shortages. Loga also received a very high vulnerability rating from the SAP.

Tahoua Department: Approximately 78,000 farmers and agro-pastoralists in Illéla Arrondissement are rated as highly vulnerable. Cereal producers in Illéla Arrondissement suffered a poor cereal harvest this year (66 percent of average). Production will only meet about half of consumption needs; Illéla is normally self-sufficient in cereal production. In addition, the SAP gave Illéla a relatively high vulnerability rating.

Elsewhere: Due to a good cereal harvest and sufficient supplies of animal fodder, all other farming and agro-pastoral populations rated in the September/October *Pre-Harvest Assessment* as highly vulnerable are now rated as no more than slightly vulnerable to food insecurity. The same is true for the remaining populations that had been designated moderately vulnerable.

Nomadic Herders

Agadez Department: Up to 120,000 herders in Agadez Department are rated as highly vulnerable. Low herder terms-of-trade due to high cereal prices, unsettled animal prices, poor access to cereal supplies and civil insecurity in the region are continuing to elevate vulnerability levels.

Elsewhere: Markedly improved terms-of-trade and sufficient water and animal fodder for herders in other areas of Niger have resulted in improved (slight) vulnerability levels for herders. However, this situation may change in the next few months as crowding and competition for resources become more prevalent.

Urban Populations

Agadez Department: Up to 58,000 residents of Agadez are rated as at least highly vulnerable. Most commercial enterprises in the region have closed due to civil conflict. There is an attendant loss of income to workers. Cash reserves are low as evidenced by increased borrowing. Cereal prices are high and stock may be severely reduced. Cereal transportation costs are also high. Nearly all needed cereal supplies must be transported from southern zones.

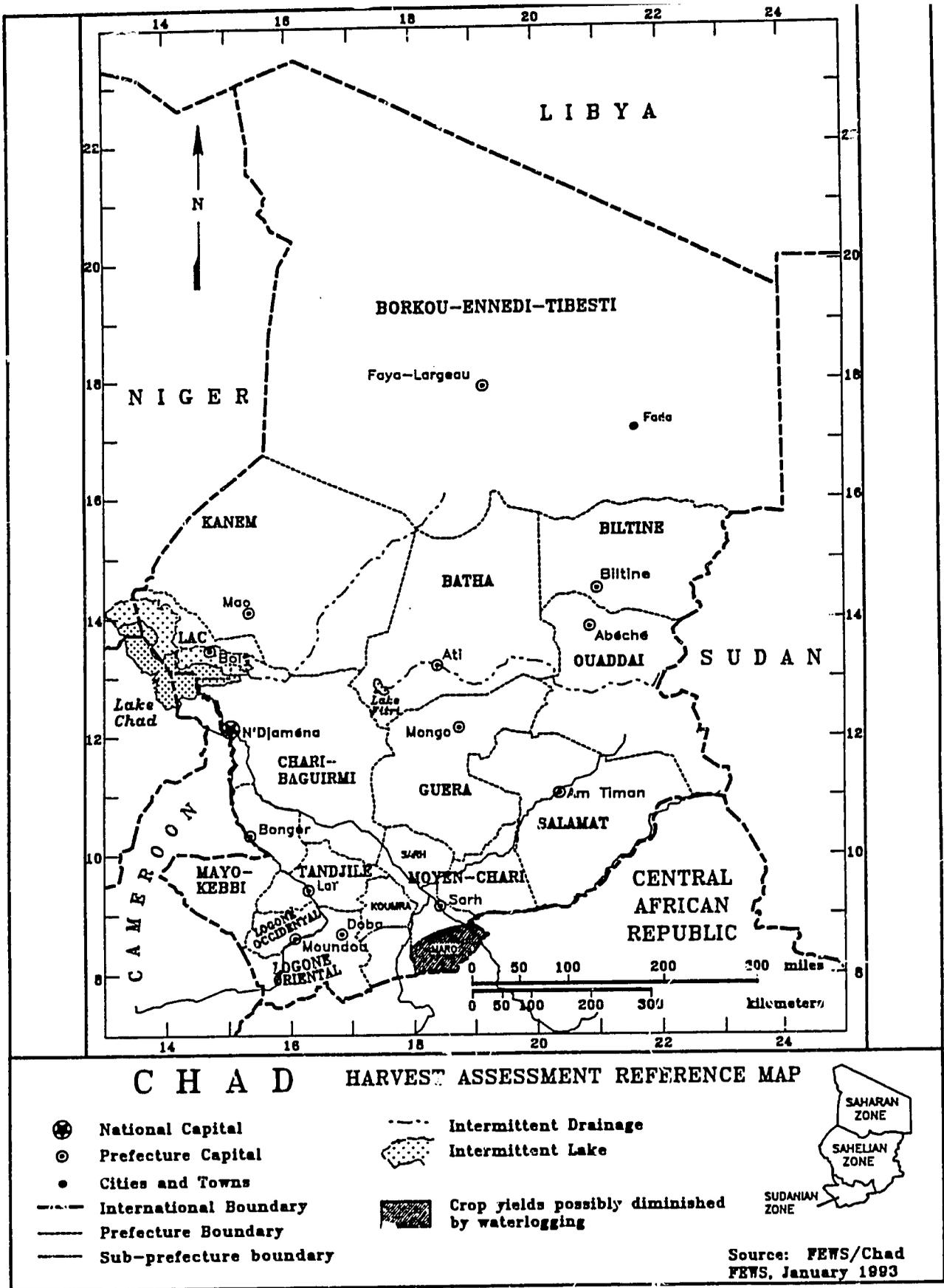
CONCLUSIONS

Generally, food security conditions should be satisfactory through the 1992/93 consumption year. However, due to a combination of poor harvest and weak purchasing power, emergency relief and mitigation assistance will be required in several arrondissements in northern and southern Niger.

Provision of assistance to extremely and highly vulnerable arrondissements will depend on donors' abilities to mobilize commodities for importation or funds for local purchases of cereal or other mitigation interventions. Assistance to the north will, in addition, require establishment of a procedure for the appropriate delivery in the face of conflict and security problems.

Options for donor assistance to the extremely and highly vulnerable arrondissements are under review. Firm decisions have not been made, except for the provision of \$200,000 by USAID/Niger.

³ The SAP ratings were completed in mid-November at a workshop in Maradi (see USAID Cable Niamey 929759 for details). The SAP vulnerability ratings were from 0 to 39, potentially and are based on qualitative rankings of 6 indicators: agro-pastoral situation, cereal production, market prices, nutritional status, socioeconomic factors and coping capacity.



Map 9: Chad Reference Map

Good Harvest Offset Few Local Shortages

Report released by USAID/Chad on December 23, 1992

SUMMARY

The Government of Chad (GOC) Division of Agricultural Statistics (DSA) has estimated another record harvest following a good 1992 rainy season and excellent growing conditions throughout most of the country. Total rainfall for the 1992 season approached or exceeded the 30-year normal (1961-90) in most of the country, except Kanem Prefecture where total rainfall reached 80% of the 30-year normal. Nevertheless, rainfed crops planted in the wadis of Kanem were successful which resulted in the first significant harvest since 1988.

*Cereal prices have been declining throughout the country since July 1992. In Kanem Prefecture, millet prices fell to their lowest since the European-funded *Système d'Alerte Précoce* (SAP) project began collecting market data in 1986, an indication of the degree of increased grain availability. In the Sahelian zone, the combination of low cereal prices and slightly increasing livestock prices should result in improved terms-of-trade for the country's pastoralists.*

FACTORS AFFECTING FOOD AVAILABILITY

Harvest Outcome

In November 1992, the GOC Division of Agricultural Statistics (DSA) published a preliminary gross national cereal production estimate of 915,000 metric tons (MT) for the 1992/93 agricultural season (Table 11), which is the highest production level recorded since agricultural data collection resumed in 1983 (Table 12). This is also the second consecutive year of estimated record harvest. Nonetheless, some isolated problem areas exist due to uneven spatial rainfall distribution typical of the Sahelian zone.

Pastoral Conditions

The outlook for dry season fodder appears good. Pastoral conditions remain satisfactory in the Sahelian zone. During the rainy season, significant pasture green-up occurred in northern Kanem, northern Batha and southern Ennedi. Biomass development reached its maximum in mid-September, fully one month later than the 10-year average.

Food Stock

The SAP project reports indicate that private grain stock in the Sahelian zone is satisfactory. Public sector food stocks totaled 20,000 MT as of November 30, of which approximately 15,000 MT is national food security reserves or residual emergency food aid grants that could be drawn upon for local production shortfalls.

Projected Food Aid

Given the excellent harvest, the GOC has not made an appeal for food aid imports. This does not preclude the prospect of localized problem areas. Any feeding requirements that may arise will be subject to careful scrutiny from the GOC/donor Food Aid Action Committee and, if verified, will be supplied from existing in-country resources. The GOC has requested that the donor community assist in replenishing its strategically-placed national security stock. USAID is currently funding the procurement of 2,000 MT maize from the Lake Chad Region for this purpose.

FACTORS AFFECTING FOOD ACCESS

Projected Food Consumption Needs

In the absence of reliable demographic data, food consumption needs estimated from questionable population figures produce less useful results. Production balance tables do allow intra-year comparison, however, and provide a frame of reference with any given year. Table 11 provides cereal production data disaggregated by prefecture and compared with consumption needs. Table 12 provides national production and consumption data since 1983/94. These tables show that the current estimate of 915,000 MT gross production represents a record harvest. Table 12 also shows that the current harvest estimate results in the highest percentage of consumption needs met by local production since the 1985/86 season.

Market Conditions

Cereal prices continue to decline after reaching their highest levels in July; the decline in millet prices from their July peak closely follows the trend in 1988 and 1991 when grain prices

Table 11: Chad, 1992/93 Cereal Production Balance

Zone / Prefecture	Area Planted (HA)	Production Gross (MT)	Production Net (MT)	Population April 1993	Cereal Consumption (MT)	Percent met by Production
Saharan Zone						
B.E.T.	0	0	0	114,526	16,148	0.0
Sub-Total Saharan	0	0	0	114,526	16,148	0.0
Sahelian Zone						
Batha	98,000	37,100	31,535	289,970	40,886	77.1
Biltine	49,900	12,965	11,020	184,061	25,953	42.5
Chari-Baguirmi	209,650	179,900	152,915	1,250,634	176,339	86.7
Guéra	89,800	42,200	35,870	264,014	37,226	96.4
Kanem	41,900	7,390	6,197	345,585	48,727	12.7
Lac	93,020	67,580	57,443	265,395	37,421	153.5
Ouaddaï	141,700	62,960	53,516	442,762	62,429	85.7
Salamat	61,900	51,690	43,937	144,713	20,405	215.3
Sub-Total Sahelian	785,870	461,685	392,432	3,187,134	449,386	87.3
Sudanian Zone						
Logone Occidental	78,410	54,570	46,385	368,949	52,022	89.2
Logone Oriental	115,900	88,520	75,242	341,887	48,206	156.1
Mayo Kebbi	134,670	119,040	101,184	709,397	100,025	101.2
Moyen Chari	148,300	108,070	91,860	676,414	95,374	96.3
Tandjilé	113,150	82,870	70,440	344,145	48,524	145.2
Sub-Total Sudanian	590,430	453,070	385,110	2,440,792	344,152	111.9
Total	1,376,300	914,755	777,542	5,742,452	809,686	96.0

Sources: Production—GOC/DSA, GOC/ONDR/MOA; Population—GOC/BSPE/MOH, GOC/MSPAS.
 Notes: Net Production = 85% Gross Production; Consumption Rate = 141 kg/year/person.

fell after the good harvests of those years. In addition, the current price level is among the lowest in five years. Figure 5 shows average millet prices for the Sahelian zone, the Sudanian zone, and the four major urban centers. The per kilogram millet price fell from approximately 80 FCFA in July to 50 FCFA in November. Figure 6 shows the seasonal fluctuation of millet prices since 1988.

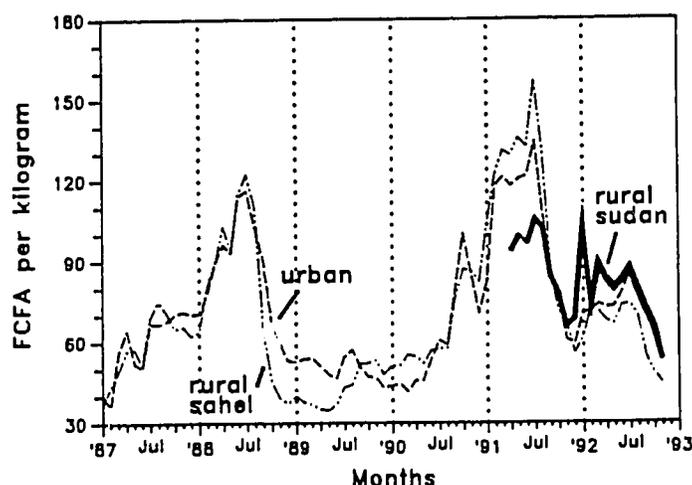
Figure 7 shows terms-of-trade between sheep and millet in Kanem Prefecture. The price of millet dropped from 14,500 FCFA per sack in July to 5,000 FCFA per sack in November. The current millet price is the lowest observed in Kanem since the SAP project began data collection in 1986. With a slightly increasing sheep price, terms-of-trade for pastoralists in Kanem are recovering rapidly from almost 0.25 bags of millet per sheep in March/April 1992 to one bag per sheep in November. This augurs well for Kanem pastoralists, who last experienced comparable terms-of-trade following the bumper 1988 harvest.

UPDATE ON VULNERABILITY

Two major areas of increased vulnerability were identified in May 1992—Kanem Prefecture and the southeastern prefec-

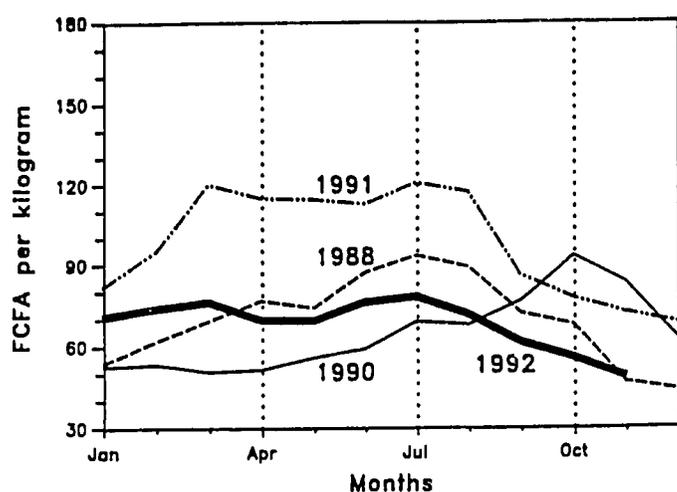
tures. Since then, both regions experienced a significant increase in food security. For the first time in four years, successful rainfed crops were harvested in Kanem Prefecture

Figure 5: Chad, Millet Prices by Zone, 1987-92



Sources: GOC/ONC, GOC/SIM, SAP/Chad, USAID/Chad,

Figure 6: Chad, Seasonal Millet Prices, 1988-92

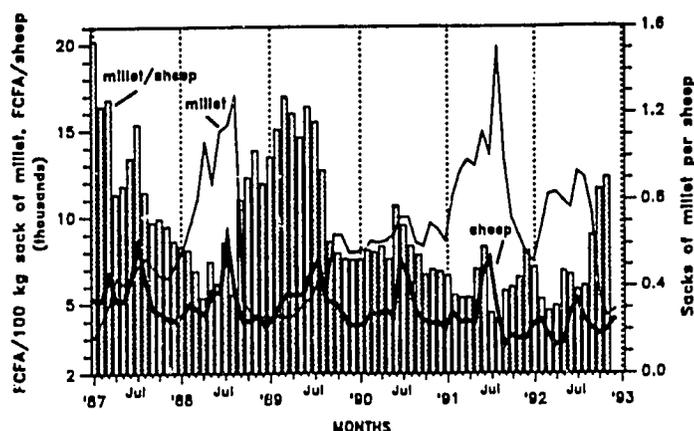


Sources: GOC/ONC; SAP/Chad; GOC/SIM; FEWS/Chad

wadis. Furthermore, a structural survey conducted by the SAP project indicates that the inhabitants of Kanem purchase the majority of their foodstuffs in the market. The low cereal prices in Kanem (Figure 7) also reflect good harvest in areas supplying its market, northern Chari Baguirmi and the Lake region. With some local production, increased market supply and low prices, vulnerability levels of the population of Kanem continue to decline. Furthermore, a structural survey conducted by the SAP project indicates that the inhabitants of Kanem purchase the majority of their foods in the market.

The southeastern prefectures of Logone Oriental, Logone Occidental and Tandjilé were also identified as vulnerable in May 1992. These areas experienced cereal crop damage by late

Figure 7: Chad, Terms of Trade Between Sheep and Millet in Kanem Prefecture, 1987-92



Sources: GOC/ONC; SAP/Chad; GOC/SIM; FEWS/Chad

heavy rains in 1991. This year, however, rainfed crops successfully completed their growing cycle. Cereal prices have declined in this region, but remain slightly higher than in surrounding prefectures, probably due to the lack of leftover stock from last year's harvest and the need to keep some of this year's grain for the reconstitution of private stocks. Nevertheless, cereal prices are expected to continue their decline in the next few months. All factors considered, the inhabitants of this area are at their baseline level of slight famine vulnerability.

Maro Sub-prefecture in Moyen Chari is a new area which may require closer examination before the start of the next rainy season. Heavy rains in August produced a period of flooding. Also, during the third dekad of October 1992, Maro received

Table 12: Chad , Historic Cereal Production Balance

Agricultural Season	Production Gross (MT)	Production Net (MT)	Population, Start of Lean Season	Cereal Consumption (MT)	Percent met by Production
1983/84	425,400	361,590	4,679,686	659,836	54.8
1984/85	345,000	293,250	4,787,318	675,012	43.4
1985/86	804,000	683,400	4,897,427	690,537	99.0
1986/87	635,000	539,750	5,010,067	706,420	76.4
1987/88	549,000	466,650	5,125,299	722,667	64.6
1988/89	808,000	686,800	5,243,181	739,289	92.9
1989/90	616,000	523,600	5,363,774	756,292	69.2
1990/91	602,000	511,700	5,487,141	773,687	66.1
1991/92	812,000	690,200	5,613,345	791,482	87.2
1992/93	914,755	777,542	5,742,452	809,686	96.0
Average:	651,116	553,448		732,491	75.0

Sources: Production—GOC/DSA, GOC/ONDR/MOA; Population—GOC/BSPE/MOH, GOC/MSPAS.

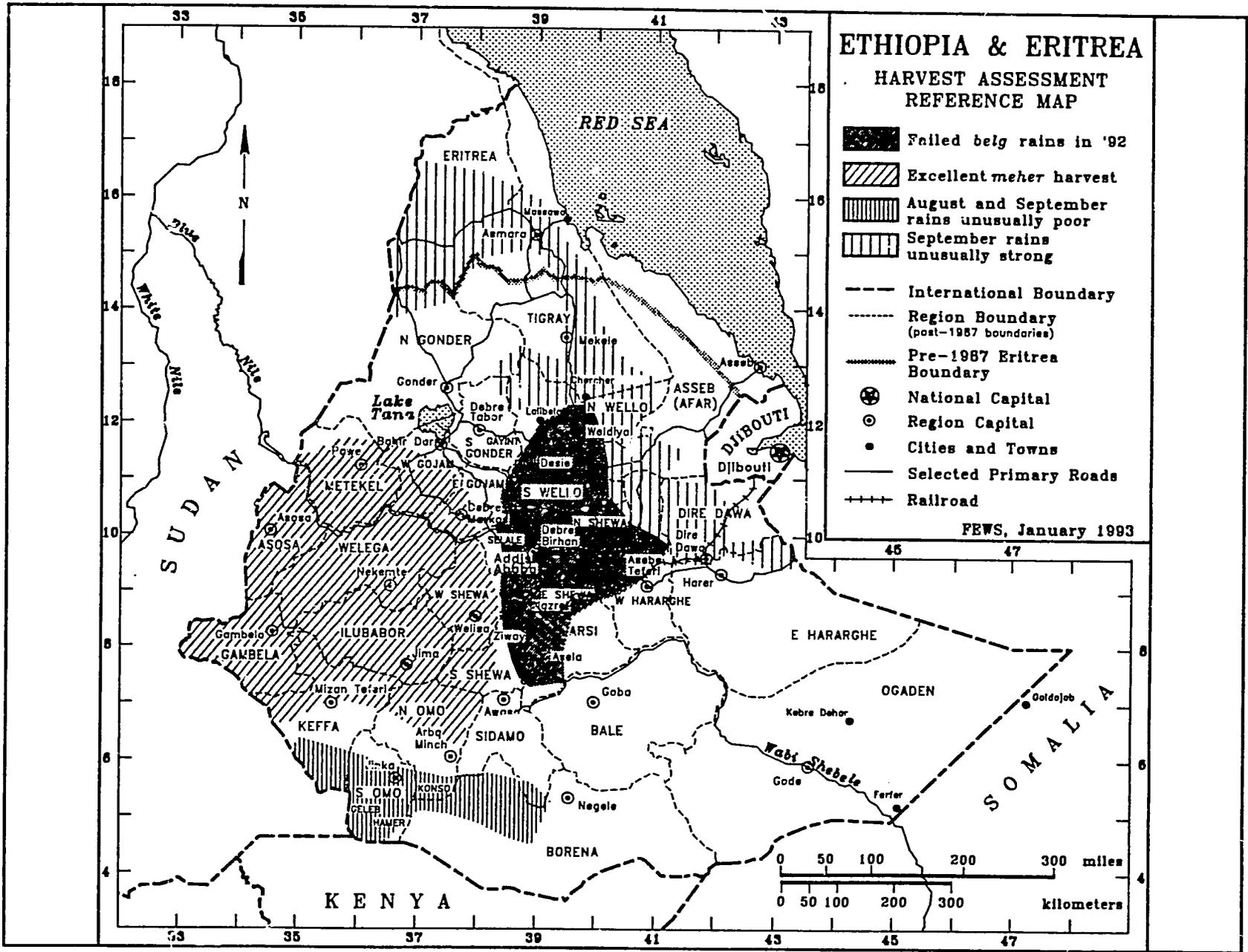
Notes: Net Production = 85% Gross Production; Consumption Rate = 141 kg/year/person.

67 mm of rainfall. All other regions in southern Chad recorded less than 20 mm for the same period. This late and heavy rain may have diminished the yield of long cycle crops, which were then near maturation. Cereal prices in neighboring Sarh and Koumra sub-prefectures continue to decline, indicating general satisfactory conditions in the region. Commercial trade within the region and from the Central African Republic will likely cover any needs that may arise.

CONCLUSIONS

Crop conditions were good to excellent during the 1992/93 season. Pastoral conditions were similarly good. Crop pest damage was insignificant when compared to recent years. The GOC has predicted another record harvest. Market information agrees with this assessment. No emergency food aid imports will be required. No major areas of deficit are expected. Any local shortages will be met through normal commercial import or local stocks.

Map 10: Ethiopia & Eritrea Reference Map



ETHIOPIA & ERITREA

Increased Production Many Vulnerable

Comments on Ethiopia released by USAID/Addis on January 27, 1993; comments on Eritrea released by USAID/Asmara on February 4, 1993

SUMMARY

In spite of a third consecutive year of good food crop production in Ethiopia, the United Nations Food and Agriculture Organization/World Food Program (FAO/WFP) forecasts a structural food aid import need of 530,000 metric tons (MT) of cereals and an emergency food aid need of 340,000 MT. These emergency requirements do not include the food needs of refugees and returnees.

The provisional food balance estimate for 1992/93 suggests the structural food availability gap has narrowed to less than five percent of aggregate demand. However, emergency needs still exist for vulnerable groups, estimated at 4.5 million people. These people remain extremely or highly vulnerable to food insecurity as the residual effects of years of drought and prolonged civil war persist.

In Eritrea, a dramatic turn-around in the food situation is anticipated by the donor community and the Provisional Government of Eritrea. Existing and expected food stock are seen as adequate for Eritrea's needs. Food stock presently in Eritrea and yet undelivered 1992 assistance stock provide Eritrea with a 1993 surplus of 42,000 metric tons (MT).

As of February 8, 1993, a Famine Early Warning System (FEWS) Field Representative was assigned to Ethiopia. The following are edited USAID/Addis and USAID/Asmara comments on the recently reported FAO/WFP Ethiopia and Eritrea Crop and Food Supply Assessments.

FACTORS AFFECTING FOOD AVAILABILITY

Harvest Outcome

The 1992/93 agricultural year can be viewed as excellent in Ethiopia, with a record level of cereal and pulses production expected (see Table 13). However, poor *belg* rains reduced the acreage of land sown with long-cycle crops in *belg* producing regions. Although replacement crops of short-cycle variety produced well, lower yields are expected. Despite the failure of the *belg* in many areas and a dry spell in June along the central

spine of the country, a rapid recovery and prolonged rains for the *meher* season led to increased production overall. The 1992/93 production increase is estimated as nine percent higher than production for 1991/92.

Regionally, there was a major production increase in Bale as well as sizable increases in Gojam and Shewa; although a substantial decrease is forecast for Hararghe due to poor rains and insecurity in Eastern Hararghe.

Tigray experienced excellent growing conditions in the traditionally surplus western region of Shire. Drought seriously affected production in eastern regions of Tigray, however. Total production is estimated at over 490,000 MT, an increase from last year's production of 310,000 MT.

Reports from western Ethiopia were of good conditions; NDVI indicated an early start to the season there. Yet there was concern in November over the effect of late rains on crops still standing. However, these ceased by mid-November.

Pastoral Conditions

Most pastoral areas of southern Hararghe, western Ogaden, Borena and the Afar area experienced a poor *belg* rainfall season. In the eastern Ogaden, satellite imagery suggests that vegetative conditions were closer to normal from mid-August. Excessive rainfall produced anomalous high vegetation levels in a crescent of pastoral areas running from Chercher up through the Afar area and over into Eritrea. NDVI (see inside backcover for the definition of NDVI) imagery showed high vegetation levels which diminished by the end of October. Those high levels suggested grass growth which, even as standing hay, will be beneficial for future grazing. Relief aid distributions have been undertaken in the Chercher and Afar areas. It is hoped that this late flush of vegetation will assist in alleviating the need for further distributions, although other forms of market support may be required.

As of mid-January, NDVI imagery showed widespread deterioration of pasture conditions in Eastern Hararghe. The area of primary concern is east of the Wabi Shebelle and south of the Hararghe highlands.

Table 13: Ethiopia Production of Cereals and Pulses (MT 000)

Region	1987/88	1988/89	1989/90	1990/91	1991/92	1992/1993
Arsi	653	620	649	708	621	725
Bale	94	115	132	128	128	172
Gamo-Gofa/Sidamo	384	341	398	391	344	348
Gojam	928	713	774	940	959	1043
Gondar	396	364	319	360	365	354
Hararghe	358	502	381	400	333	293
Ilubabor/Keffa	598	431	615	655	590	618
Shewa	1502	1675	1671	1943	1898	2041
Tigray	132	300	190	220	310	490
Welega	420	279	362	400	444	458
Wollo	301	484	361	350	390	407
Sub-total	5766	5824	5852	6495	6382	6949
Settlements	123	133	86	117	60	49
State farms	288	251	270	228	146	150
Total meher	6177	6208	6208	6840	6588	7148
Following <i>helg</i>	533	572	490	491	471	540
Total production	6710	6780	6698	7331	7059	7688
Less non-food uses	1007	1017	1005	1100	1059	1153
Net production	5703	5763	5693	6231	6000	6535
Add cereal equiv.						
Enset and roots	570	570	570	600	620	640
Milk	249	261	273	285	300	310
Meat	185	190	195	200	200	200
TOTAL	6707	6784	6731	7316	7120	7685

Notes: Regions have been grouped according to old, pre-1987 administrative boundaries for comparative purposes (see Map 10). Figures for 1987-90 are CSA official statistics.

Statistics for 1991/92 are CSA statistics; regional break-down as amended by FAO; MOA estimates, adjusted by FAO, provisional-1992/93.

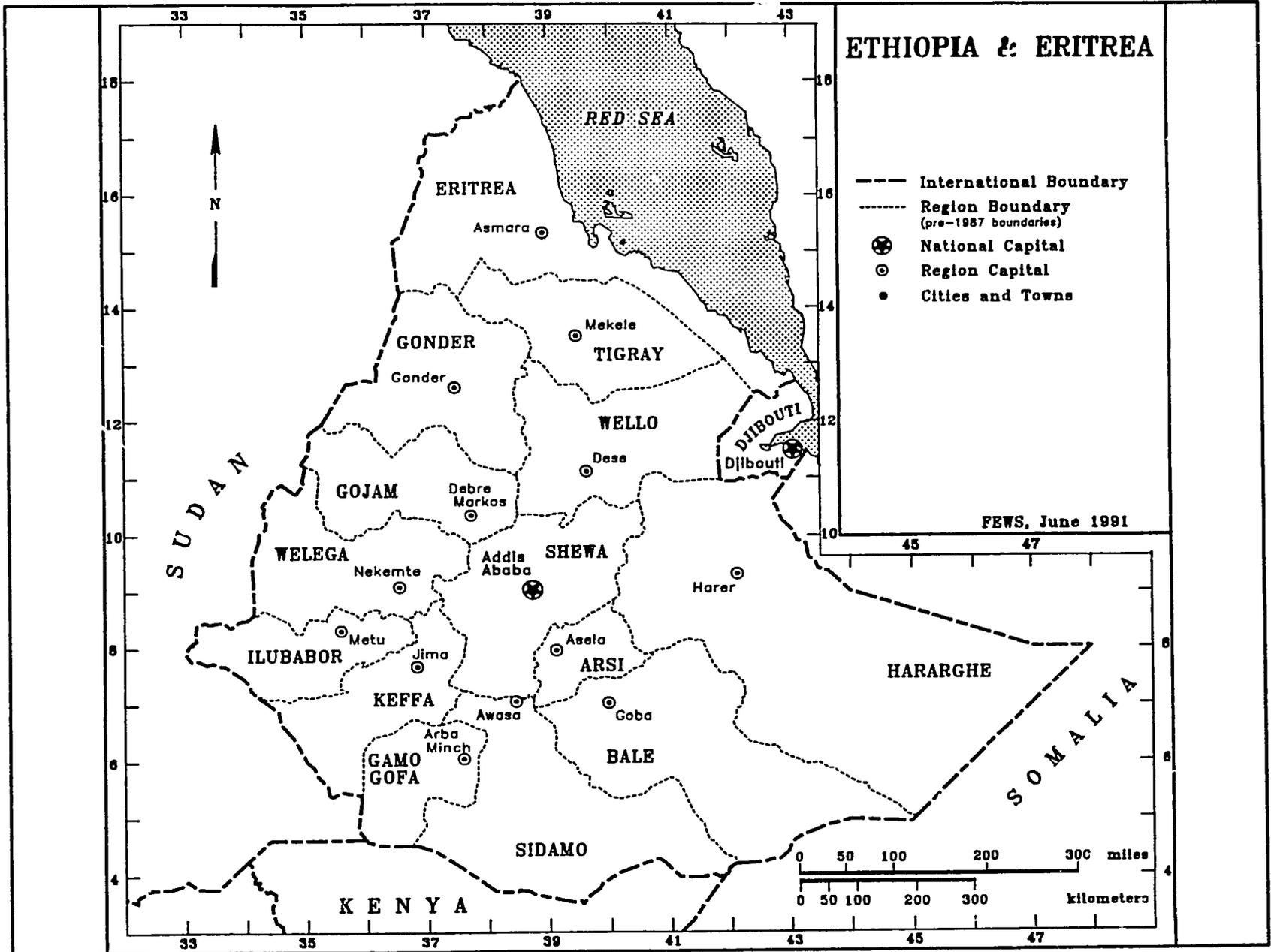
All figures are expressed in thousand MT.

Food Stock

FAO estimates that there are nearly 240,000 MT of carry-over food aid stock currently in-country. For the end of 1993, FAO projected a food aid stock level of 100,000 MT, hence 140,000 MT of this amount should be available to meet food needs in 1993. These estimates rely partially on the premise that a carry-over of 100,000 MT is needed as reserve. WFP estimates that an additional 110,000 MT in 1992 emergency food aid pledges are expected to arrive in the first quarter of 1993. Reliable estimates of private stock are not available.

USAID/Addis believes that production estimates in some areas of the country are underestimated, specifically for Hararghe and Gondar. In Hararghe, for example, the FAO/WFP team relied heavily on CARE's monitoring program to produce its report. CARE monitors 22 rural markets and is in the process of completing its crop assessment survey. The final results of the crop assessment survey are currently unavailable. USAID/Addis anticipates that the assessment data, along with the market monitoring information, should provide a continuous update of the agricultural situation and food availability in Hararghe.

Map 11: Ethiopia & Eritrea, Pre-1987 Administrative Units



FACTORS AFFECTING FOOD ACCESS

Projected Food Consumption Needs

In addition to the structural food supply deficit, WFP cites emergency food aid needs which continue to exist due to drought and continuing civil conflict. The WFP needs estimate relies heavily upon numbers prepared by the Relief and Rehabilitation Commission (RRC). WFP estimates emergency food aid needs for farmers and pastoralists (affected by drought), displaced persons and ex-soldiers and families.

The RRC has identified 4.985 million people who will require varying levels of emergency food assistance (see Table 14). Of these, 2.76 million are classified as drought-affected and 2.23 million are classified as suffering from man-made problems. The latter include returnees, internally displaced persons and ex-soldiers and their families who are registered with the RRC as needy.

The total food required to meet the needs of these groups is estimated by RRC as 737,993 MT. RRC estimates a carry-over stock of 250,000 MT, which leaves an additional requirements

balance of 487,993 MT. The difference between the RRC net requirement and that of the WFP is attributable to RRC's inclusion of returnees in its estimate. Total consumption needs for Ethiopia are estimated at 8,355,000 MT.

MISSION COMMENTS ON WFP AND RRC ESTIMATES FOR ETHIOPIA

Drought affected: WFP and RRC did not adequately discriminate among different drought affected populations regarding food needs. This is particularly the case for Tigray, which is reported as requiring the single largest amount of assistance, nearly one third of the total tonnage requested. Admittedly, rains were poor in eastern Tigray; however, it is also recognized that peace and rejuvenated economic activity have expanded the options available to farmers in this traditionally deficit grain producing area.

Ogaden/Returnees: Estimating the needs of drought victims, refugees and returnees in this region continues to be problematic. As events unfold in Somalia, the situation in the Ogaden may worsen or dramatically improve. A November 1992 survey of needs in the region by the UN Emergency

Table 14: 1993 Preliminary Emergency Food Requirements as Estimated by FAO/WFP Mission

Region	Affected by Natural Factors	Internally Displaced	Ex-soldiers Dependents	Total
Addis Ababa	0.0	7.0	23.7	30.7
Afar (Asscb)	5.6	0.0	0.0	15.6
Arsi	0.0	18.6	0.0	18.6
Asosa	0.0	1.1	0.5	1.6
Bale	10.2	0.5	4.7	15.4
Borena	25.4	14.9	2.8	43.1
Dire Dawa	4.6	9.6	3.3	17.5
Gambela	0.0	2.9	0.5	3.4
Gojam	0.0	0.1	1.1	1.1
Gondar	32.0	1.1	6.1	39.2
E. Hararghe	29.6	10.2	5.6	45.4
W. Hararghe	10.5	2.4	1.3	14.3
Ilubabor	1.7	0.0	0.8	2.5
Keffa	0.0	0.0	2.7	2.7
Metekel	0.0	3.1	2.6	5.6
Ogaden	33.8	7.6	0.0	41.5
Omo (N&S)	14.7	0.0	1.7	16.4
Sidamo	0.0	5.4	4.0	9.4
Shewa	0.0	5.6	5.5	11.1
Tigray	126.9	24.7	7.2	158.8
Welega	2.9	0.1	4.0	6.9
Wello	12.9	34.9	14.0	1.8
TOTAL	320.8	149.7	91.9	562.0

Calculation of Food Requirements

Food needs have been calculated on the following basis: i) Basic daily ration at 450 g cereal plus 20 g edible oil. ii) Affected populations (all categories) in Borena, Ogaden and Eastern Hararghe require 12 months assistance. iii) Affected populations in Gojam, Ilubabor, Welega and Keffa require assistance for six months. iv) Affected populations in all other regions require nine months assistance. v) Supplementary food ration of 150 g *saffa*/CSB is required for some 15 percent of all targeted beneficiaries for 12 months, with the exception of ex-soldiers and their dependants.

Preparedness and Prevention Unit in cooperation with Non-Governmental Organization (NGOs) and the RRC found that markets are continuing to function and people are coping. However, native Ogadenis, who are hosting clansmen—both refugees and returnees from Somalia—are susceptible to tremendous food stress. Needs in the southern Ogaden are particularly serious, although recent reporting indicates that significant numbers of Somalis are crossing back into Somalia now that security and relief assistance are available. The situation could reverse should security worsen and relief assistance be interrupted.

Afar (Asseb): These people are recovering from a period of low grain availability and very high grain prices. The area has received significant relief assistance over the last several months, but the situation is still very uncertain. The Save the Children Fund/United States and other groups are monitoring the situation.

Desettlers from the re-settlement sites: The needs of this group figure prominently in the RRC's needs estimate. However, the Save the Children Fund/United Kingdom helicopter survey and other information indicate that many desettlers are returning to family-held lands or have been allocated land by local authorities. Very few were found to be without access to land. These people are, however, returning to areas of high population densities and low agricultural productivity.

Eritrea expellees: Many of these people have more access to productive assets than the Transitional Government of Ethiopia concedes. This is evidenced by the large number who are renting accommodations in Desé and elsewhere.

Soldiers and dependents: The number of demobilized soldiers and their dependents who will require assistance is not clear from information provided by the RRC and other sources. USAID/Addis believes, however, that more have actually reintegrated than RRC data reflect. The Mission also questions whether all of the 840,000 demobilized soldiers registered with the RRC and their dependents identified as needy still require full rations for the full year as figures suggest.

Refugees and Returnees

The WFP emergency food aid requirements do not factor in the needs of either refugees or returnees. While accurate numbers in these groups are difficult to ascertain, their needs cannot be excluded from a food needs calculation. Some current working estimates of refugees/returnees by region are: 100,000 Tigrayans expected to return from Sudan; 20,000 southern Sudanese currently in Gambela, (UNHCR is using a planning figure of 100,000 southern Sudanese refugees in Ethiopia); 30-40,000 Ethiopians in Kenya as a result of fighting in the Borena/Sidamo area for whom UNHCR has begun repatriation efforts; and an estimated 50,000 new refugees from Somalia in the Ogaden. These figures do not include the estimated 500-

600,000 refugees and returnees being served in Eastern Hararghe and the Ogaden.

According to WFP/Addis, total refugee food needs for Ethiopia for 1993 are estimated at 350,000 MT, of which 100,000 MT can be met from 1992 carry-over. The balance of the 250,000 MT is covered by donor pledges already in hand (Mission understands WFP is including 10,000 MT of wheat and 3,000 MT of CSB requested of the United States Government under PRO 4856). WFP would prefer an additional 20,000 MT as a contingency and has informally approached USAID/Addis on this matter.

The food needs and food pipeline for the UN's cross-mandate operations in the East are very difficult to assess. The need for 350,000 MT to meet refugee/returnee needs appears high. The UN's logistics plan for the Hararghe, Ogaden and Borena programs anticipates delivering only 12,000 MT a month for all three programs over the next 12 months. If those plans are realized, only 144,000 MT would be required for the year.

MISSION COMMENTS ON ERITREA

In light of the favorable 1993 harvest, USAID/Asmara proposes to substantially reduce the volume of emergency food aid provided to Eritrea. The total food aid tonnage for the 1993 emergency relief program is proposed at 5-7,000 MT and will consist mostly of supplemental food commodities such as edible oils and pulses. The Mission also anticipates a possible later request for 15,000 MT of food aid in late 1993 or early 1994.

CONCLUSIONS

Overall, Ethiopia has experienced an excellent production year. This should provide the Transitional Government of Ethiopia with the opportunity to begin addressing the underlying causes of food insecurity in the country. However, sizable groups—now more easily identified—continue to be at immediate risk of deprivation and malnutrition. Assistance to these groups will be required, albeit at a reduced level from previous years.

Despite the recent dramatic turn-around in Eritrea's food situation, USAID/Asmara does not believe that the current situation should mark the end of Eritrea's status as food insecure. USAID/Asmara believes that it is unlikely that this year's excellent rains will be repeated in the coming year or that the large flow of donor relief will continue.

Furthermore, profound poverty and marginalization resulting from years of civil unrest, drought and economic and social dislocations will continue to affect the vulnerability status of most Eritreans. The Mission plans to continue its support of

responsive relief programs for populations in need while reorienting its assistance to ensure that food aid assistance

program emphasize food-for-work and market interventions where possible.

Appendix: FEWS Matrix of Vulnerability

Level of Vulnerability	Conditions of Vulnerability	Typical Coping Strategies and/or Behaviors	Interventions to Consider
SLIGHTLY VULNERABLE	<p>Maintaining or Accumulating Assets</p> <p style="text-align: center;">and</p> <p>Maintaining Preferred Production Strategy</p>	<p>Assets/resources/wealth: either accumulating additional assets/resources/wealth or only minimal net change (normal "belt-tightening" or seasonal variations in) assets, resources or wealth over a season/year. i.e., coping to minimize risk.</p> <p>Production Strategy: any changes in production strategy are largely volitional for perceived gain, and not stress-related.</p>	Developmental Programs
MODERATELY VULNERABLE	<p>Drawing-down Assets</p> <p style="text-align: center;">and</p> <p>Maintaining Preferred Production Strategy</p>	<p>Assets/resources/wealth: coping measures include drawing down or liquidating less important assets, husbanding resources, minimizing rate of expenditure of wealth, unseasonal "belt-tightening" (e.g., drawing down food stores, reducing amount of food consumed, sale of goats or sheep).</p> <p>Production Strategy: only minor stress-related change in overall production/income strategy (e.g., minor changes in cropping/planting practices, modest gathering of wild food, inter-household transfers and loans, etc.).</p>	Mitigation and/or Development: Asset Support (release food price stabilization stocks, sell animal fodder at "social prices", community grain bank etc.)
HIGHLY VULNERABLE	<p>Depleting Assets</p> <p style="text-align: center;">and</p> <p>Disrupting Preferred Production Strategy</p>	<p>Assets/resources/wealth: liquidating the more important investment, but not yet "production," assets (e.g., sale of cattle, sale of bicycle, sale of possessions such as jewelry).</p> <p>Production Strategy: coping measures being used have a significantly costly or disruptive character to the usual/preferred household and individual lifestyles, to the environment, etc (e.g., time-consuming wage labor, selling firewood, farming marginal land, labor migration of young adults, borrowing from merchants at high interest rates).</p>	Mitigation and/or Relief: Income and Asset Support (Food-for-Work, Cash-for Work, etc.)
EXTREMELY VULNERABLE or AT-RISK	<p>Liquidating Means of Production</p> <p style="text-align: center;">and</p> <p>Abandoning Preferred Production Strategy</p>	<p>Assets/resources/wealth: liquidating "production" resources (e.g., sale of planting seed, hoes, oxen, land, prime breeding animals, whole herds).</p> <p>Production Strategy: Seeking non-traditional sources of income, employment, or production that preclude continuing with preferred/usual ones (e.g., migration of whole families).</p>	Relief and/or Mitigation: Nutrition, Income and Asset Support (food relief, seed packs, etc.)
FAMINE	Destitute	Coping Strategies Exhausted: no significant assets, resources, or wealth; no income/production.	Emergency Relief (food, shelter, medicine)

Key Terms

At Risk - FEWS Reports employ the term "at risk" to describe populations either currently, or in the near future, expected to have insufficient food, or resources to acquire food, to avert a nutritional crisis (i.e., progressive deterioration in health or nutritional condition below the status quo). "At risk" populations require specific intervention to avoid a life-threatening situation. Food needs estimates are sometimes included in FEWS reports. Famines are the culmination of a slow-onsetting process, which can be extremely complex. The food needs of specific "at risk" populations depends upon the point in this process when the problem is identified and the extent of its cumulative impact on the individuals concerned. The amount of food assistance required, from either internal or external sources, depends upon many considerations.

Vulnerability - FEWS Reports use the term "vulnerability" to indicate relative susceptibility to food insecurity of groups of people or areas. In FEWS usage, vulnerability is always characterized by its degree: slight, moderate, high, or extreme. Extreme vulnerability is synonymous with "at risk." Vulnerability is a dynamic concept that incorporates both chronic and current conditions. Chronic vulnerability involves long-term conditions that predispose a particular group or region to food insecurity. Current vulnerability highlights short-term changes in food security status and their implications. Vulnerability analysis involves three levels of concern: food availability, food access, and food utilization. These levels are linked by a common analytical framework that interprets all relevant information for its food security impact on the diversified income generating possibilities of different groups of households.

ITCZ - The Intertropical Convergence Zone (ITCZ) is equivalent to a meteorological equator; a region of general upward air motion and relatively low surface pressure bounded to the north and south by the northeast and southeast Trade Winds, respectively. The upward motion in the ITCZ forms the rising branch of the meridional Hadley Circulation. The ITCZ moves north and south following the apparent movement of the sun. It is at its most northerly position in the summer months. The position of the ITCZ normally defines the northern limits of possible precipitation in the Sahel; rainfall generally occurs 100 to 300 kilometers south of the ITCZ, with local convective activity organized by westward moving "Easterly Waves."

NDVI - Normalized Difference Vegetation Index (NDVI) images are created at the laboratory of the National Aeronautic and Space Administration (NASA) Global Inventory Modeling and Monitoring System (GIMMS). The images are derived from Global Area Coverage (GAC) imagery (of approximately seven kilometers resolution) received from the Advanced Very High Resolution Radiometer (AVHRR) sensors on board the National Oceanic and Atmospheric Administration (NOAA) Polar Orbiting series of satellites. The polar orbiter satellites remotely sense the entire Earth and its atmosphere once each day and once each night, collecting data in five spectral bands. Bands 1 and 2 sense reflected red and infrared wavelengths respectively, and the remaining three bands sense emitted radiation in three different spectral bands. The NDVI images are created by calculating " $(\text{infrared} - \text{red}) / (\text{infrared} + \text{red})$ " for each pixel from the daytime satellite passes. Since chlorophyll reflects more in the infrared band than in the red band, higher NDVI values indicate the presence of more chlorophyll and, by inference, more live vegetation. A composite of daily NDVI images is created for each 10-day period, using the highest NDVI value for each pixel during that period. This technique minimizes the effects of clouds and other forms of atmospheric interference that tend to reduce NDVI values. NDVI is often referred to as a measure of "greenness" or "vegetative vigor." The NDVI images are used to monitor the response of vegetation to weather conditions.

METEOSAT - METEOSAT-based Rainfall Estimates. FEWS uses estimates of current rainfall based on cold cloud duration as measured by thermal infra-red radiometers on the METEOSAT satellite. The estimates are calculated every 10 days by the Department of Meteorology at the University of Reading in the U.K. Cold cloud duration correlates well with thunderstorm generated rainfall and, thus, is suitable for use in the semi-arid Sahel. The method works best on level terrain; hilly areas may produce local enhancements or rain-shadow areas that are not detected. In level areas the method has an accuracy of "rain/no rain" of at least 85% (based on a comparison with ground data). At a dekadal (ten-day) scale, 80% of rainfall amounts under 60 millimeters (mm) are accurate to plus or minus 10 mm, while rainfall over 60 mm is accurate to plus or minus 20 mm. This accuracy is acceptable for use in the FEWS-monitored region given that the method provides near-real-time coverage for a large area at a resolution of less than 10 kilometers.