



**Niger 1997/98  
Current Vulnerability Assessment  
February 1998**

**Famine Early Warning System Project  
U.S. Agency for International Development**

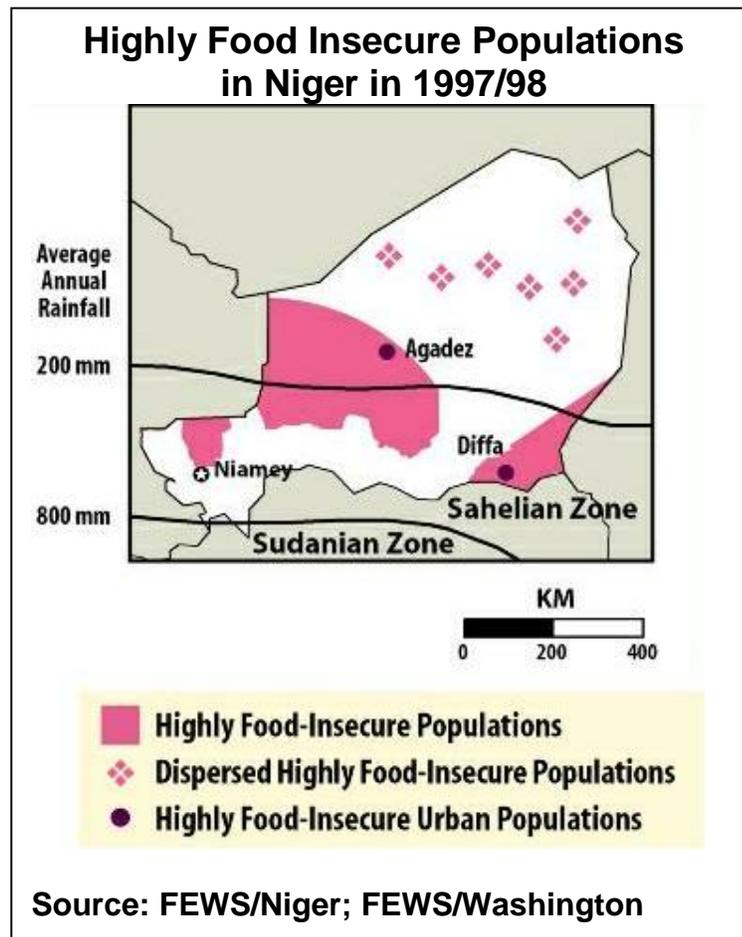
## Niger 1997/98 Current Vulnerability Assessment

Poor local harvests, high cereal prices, and depletion of assets over a number of years have left over 600,000 people highly food insecure in Niger

### Summary

Despite above-average cereal production at the national level, the Departments of Diffa and Tillabéry produced significantly below-average harvests for the third consecutive year. Cereal prices are unusually high for Niger as a whole and even higher for these Departments. Pasture conditions and water availability are also poor, and livestock-to-millet terms of trade are very low. Consequently, 328,000 farmers, agropastoralists, and pastoralists are highly food insecure and another 590,000 are moderately insecure in Diffa and Tillabéry Departments. Similar conditions in the Arrondissements of Tanout in Zinder Department and Tchintabaraden in Tahoua Department have left approximately 150,000 farmers, agropastoralists, and pastoralists highly food insecure. In the predominantly pastoral department of Agadez, civil insecurity is

interfering with commercial transport of cereals and other goods and has completely halted tourism, an important source of income. In addition, many development projects, which targeted recently sedentarized herders, have closed down. Consequently, approximately 142,000 agropastoralists, 26,000 urban residents, and 33,000 pastoralists are highly food insecure in the Department of Agadez.



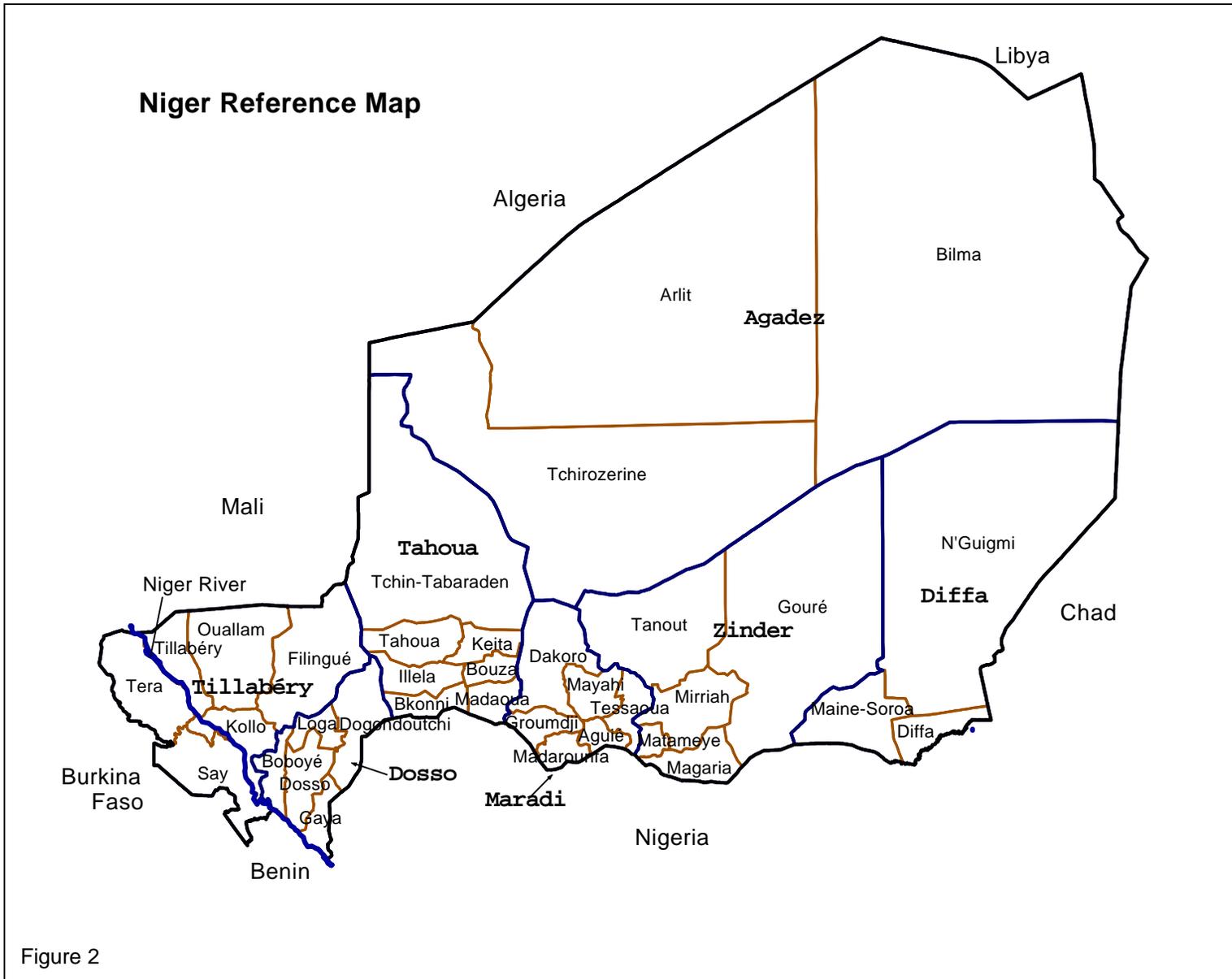


Figure 2

## I. INTRODUCTION

This Current Vulnerability Assessment (CVA) presents an analysis of the impact of recent events on populations' current food security status. Food security is a measure of whether an individual, household, community, or any population group has access to sufficient safe and nutritious foods that meet dietary needs and food preferences for an active life. There are two important aspects of food security: food availability and food access.

1. **Food availability** is defined as the amount of food which is, and will be, physically present in the country during the current consumption year<sup>1</sup>.
2. **Food access** refers to a household's ability to acquire that "available" food, either through its own (on-farm) production and stocks, market transactions (cash or in-kind) or transfers (private or government) for the current consumption year.

This CVA categorizes populations as food secure or food insecure. **Food-secure** populations can meet their food needs in the current year without altering normal income activities or depleting savings. For the purpose of response planning, food insecure populations are distinguished according to their degree of food insecurity:

- **Extremely food-insecure** populations have depleted their asset base to such a degree that without immediate outside assistance, they will face famine. Appropriate interventions include emergency food distributions and long-term rehabilitation programs.
- **Highly food-insecure** populations cannot meet their food needs during the current year without reducing consumption or drawing down assets to such a degree that they compromise their future food security. Appropriate interventions include nutritional support for vulnerable groups, food for work, income and asset support, and market interventions.
- **Moderately food-insecure** populations can meet their food needs in the current year, but only by drawing down savings or relying heavily on secondary income activities. Should market access or income from secondary activities be compromised, these populations might become highly food insecure in the current year. No interventions are necessary, but positioning of cereals would facilitate market interventions if conditions deteriorate.

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<sup>1</sup> For most agricultural populations, the current consumption period refers to the period between the current harvest and the next harvest, which is usually, but not necessarily, a full year.

This report is organized to first address food availability and then food access. Section II presents an analysis of food availability at the national and subnational levels. At the national level, the focus is on evaluating current levels of production, stocks, and net imports, comparing them to average levels and calculating the national food balance. This is the first step in understanding whether there will be enough food available to meet the consumption needs of the entire population in the current year. This is followed by an evaluation of changes in production at the subnational level and the possible implications these changes will have on food flows and local availability.

Section III presents an analysis of food access at the socioeconomic group level, going beyond the issue of food availability to a determination of how the current harvest and other factors have affected the various socioeconomic groups' ability to acquire sufficient food to meet their current food needs.

FEWS considers the following factors in making this determination:

- Harvest outcomes over the past 3 seasons
- Degree of dependence of each group on agricultural production for meeting food needs
- Levels and diversity of other income sources
- Market availability and prices of cereals<sup>2</sup>
- Coping strategies

Section IV summarizes the actions that are being taken or need to be taken to respond to any food emergencies.

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<sup>2</sup> This takes into account the degree of integration of specific areas into the national market. Geographic isolation and status of transport infrastructure are key factors considered.

## II. Food Availability

### A. National Availability

#### 1. Production

Estimated 1997/98<sup>3</sup> net cereal production in Niger is 1.9 million MT, 5 percent above the 5-year average (1992/93-1996/97)<sup>4</sup>. The national production deficit<sup>5</sup> is 151,000 MT, nearly double the average production deficit. This paradox of above-average production and a larger-than-average production deficit indicates that growth in agricultural production is not keeping pace with population growth. At the subnational level, production was well below average in 3 of Niger's 7 Departments.

#### 2. Stocks

As of November 1997, estimated opening stocks for the 1997/98 consumption year included 2,700 MT of stocks held by commercial traders and donors and 4,500 MT of cereals in the national food security stock. The level of the national security stock is much lower than the target level of 40,000 MT. The European Union has pledged 15,000 MT toward replenishing the national security stock. The security stocks are not necessarily available for emergency interventions; cereals can only be removed if the Government or a donor pledges an equivalent replacement amount.

#### 3. Imports/Exports

The Government projects commercial cereal imports for 1997/98 at approximately 240,000 MT: 60,000 MT of rice, 12,500 MT of wheat, and 170,000 MT of millet, sorghum, and maize. This level is double the five-year average and is based on data obtained by the Market Information System (SIM) from sanitary control posts at the border from November 1996 through October 1997. However, in contrast to the Government's projection, a study conducted jointly by the SIM and the University of Ahmadou Bello in Nigeria estimated that since the 1994 devaluation of the FCFA, annual cereal flows between Nigeria and Niger are roughly 80,000 MT to 100,000 MT. This is down from estimated annual flows of 150,000 MT to 200,000 MT between the mid-1970's and the mid-1980's because of the FCFA devaluation and skyrocketing price inflation in Nigeria. With the good harvest outcome in Mali, traders have been importing significant quantities of millet from Mali. But it is unlikely that flows from Mali or Benin, another important source of supply, could amount to 70,000 MT, which is the

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<sup>3</sup> The rainy season typically runs from May to September; harvest usually occurs from August to December. For the purposes of this analysis, the 1997/98 agricultural season is referred to as this season, or this year. The 1996/97 agricultural season is referred to as last season or last year.

<sup>4</sup> Averages for all production comparisons refer to the average for 1992/93 through 1996/97, unless otherwise noted.

<sup>5</sup> A production deficit is defined as when domestic consumption needs exceed domestic production.

difference between Government projection of 170,000 MT of millet, sorghum, and maize and the SIM-University of Ahamadou Bello estimate of flows from Nigeria.

Food aid pledges as of November 1 amounted to 8,700 MT.

#### 4. Cereal Balance

Using the production, stock, and net import figures described above, the national cereal balance for 1997/98 is -23,000 MT (table 1). This cereal balance should be interpreted with caution because of uncertainties (noted above) about the projected commercial import levels of 240,000 MT.

Table 1 : Preliminary Cereal Balance for 1997/98<sup>6</sup>

|   | Rice            | Wheat           | Traditional Cereals <sup>7</sup> | Total Cereals    |
|---|-----------------|-----------------|----------------------------------|------------------|
| <b>Population (April 1998)</b>                      |                 |                 |                                  | <b>9,539,000</b> |
| <b>1. Available Cereal</b>                          | <b>43,700</b>   | <b>5,400</b>    | <b>1,853,000</b>                 | <b>1,903,100</b> |
| <b>Production</b>                                   |                 |                 |                                  |                  |
| Gross Production                                    | 67,100          | 6,300           | 2,172,900                        | 2,246,300        |
| Net Production <sup>8</sup>                         | 43,600          | 5,300           | 1,847,000                        | 1,895,900        |
| <b>Initial Stocks</b>                               |                 |                 |                                  |                  |
| Farmer Stocks                                       | 0               | 0               | 0                                | 0                |
| Other Stocks  | 100             | 100             | 7,000                            | 7,200            |
| <b>2. Consumption Needs</b>                         | <b>97,000</b>   | <b>28,500</b>   | <b>2,048,927</b>                 | <b>2,174,427</b> |
| <b>Human Consumption<sup>9</sup></b>                | 96,100          | 23,500          | 2,041,327                        | 2,160,927        |
| <b>Ending Stocks</b>                                | 900             | 5,000           | 7,600                            | 13,500           |
| Farmer Stocks                                       | 0               | 0               | 0                                | 0                |
| Other Stocks  | 900             | 5,000           | 7,600                            | 13,500           |
| <b>3. Gross Surplus or Deficit</b>                  | <b>(53,300)</b> | <b>(23,100)</b> | <b>(196,146)</b>                 | <b>(271,327)</b> |
| <b>4. Import/Export</b>                             | <b>60,000</b>   | <b>12,500</b>   | <b>176,200</b>                   | <b>248,700</b>   |
| Projected Commercial Imports                        | 60,000          | 10,000          | 170,000                          | 240,000          |
| Projected Food Aid                                  | 0               | 2,500           | 6,200                            | 8,700            |
| Projected Exports                                   | 0               | 0               | 0                                | 0                |
| <b>5. Net Surplus (+) or Deficit (-)</b>            | <b>6,700</b>    | <b>(10,600)</b> | <b>(19,946)</b>                  | <b>(22,627)</b>  |
| <b>6. Per Capita Availability<sup>10</sup> (kg)</b> | <b>10.9</b>     | <b>1.9</b>      | <b>212.8</b>                     | <b>225.6</b>     |

Source for production data: Ministry of Rural Development, Hydrology, and Environment; October 1997

<sup>6</sup> All units are MT unless otherwise noted.

<sup>7</sup> Includes millet, sorghum, maize

<sup>8</sup> Net production is obtained by multiplying gross production by the following coefficients: 0.65 for rice and 0.85 for all other cereals.

<sup>9</sup> FEWS/USAID uses an annual consumption rate of 190 kgs per person for nomadic and urban groups and 220 kgs per person for farmers. This amounts to a weighted average figure of 214 kg per person. Cereal-specific consumption figures are 10.08 kg/person for rice, 2.46 kg/person for wheat, and 201.46 kg/person for other cereals. The GON uses annual consumption rates of 200 kg per person for nomadic and urban groups and 250 kg per person for farmers. See Appendix 1 for the Cereal Balance using GON consumption figures.

<sup>10</sup> Per capita availability includes net production, initial stocks, and net imports.

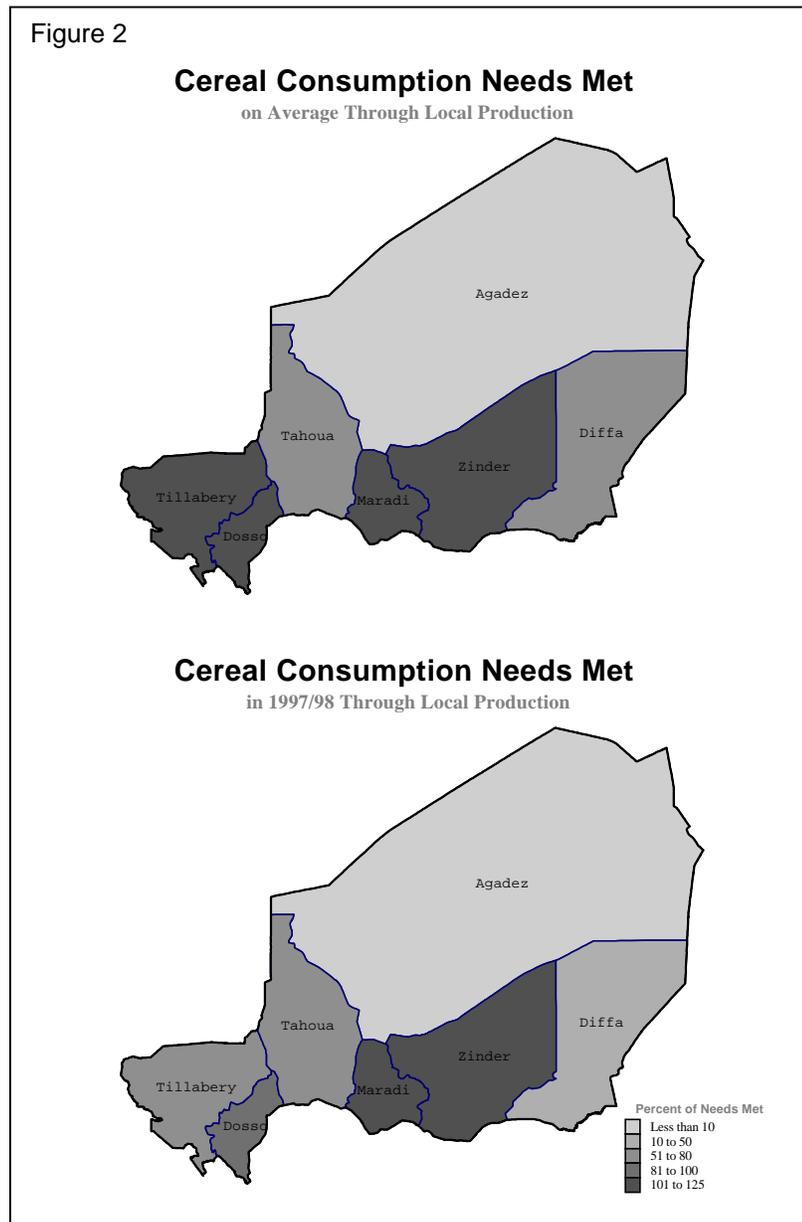
## B. Subnational Cereal Production and Flows

The traditional surplus departments in Niger are Dosso and Maradi and the southern parts of Tahoua, Tillabéry, and Zinder Departments (figure 2). After harvest, traders and cooperatives collect cereals from these Departments to supply deficit zones. In addition, Nigeria, Benin, and Mali are important sources of cereal supply.

Normal cereal flows usually bridge the gap between local production and local demand. However, large reductions in supply in surplus zones, significantly larger-than-average deficits in deficit zones, or unusually high cereal prices can disrupt this balance, as can civil insecurity, which limits cereal flows.

National cereal production for 1997/98 is 5 percent higher than average. The increase came largely from Zinder Department, whose production was 23 percent higher than average, yielding a 67,000 MT surplus compared to an average surplus of 9,000 MT (table 2). Maradi and Tahoua Departments also

had above average production, yielding a larger-than-average surplus in Maradi and a smaller-than-average deficit in Tahoua. In contrast, Dosso, Tillabéry, and Diffa Departments produced 10, 22, and 30 percent below average, respectively. Dosso and Tillabéry Departments, which on average produce surpluses, were left with deficits of 35,000 MT and 82,000 MT, respectively. The size of the



deficit in Diffa Department was almost double its average level. The larger than average surpluses in Maradi and Zinder Departments will contribute to filling production deficits, but greatly reduced production in Diffa Department and parts of Tillabéry and Tahoua Departments, combined with high cereal prices and limited purchasing power in those Departments may limit cereal flows. In Agadez Departments and parts of Diffa, Tahoua, and Tillabéry Departments, civil insecurity is interfering with cereal flows. The impact of localized harvest shortfalls and reduced cereal flow for each socioeconomic group is examined in section III.

Table 2: Departmental Cereal Production and Cereal Needs<sup>11</sup>

| Department | Pop 1998  | Cereal Needs 1998 (MT) | Net Cereal Production |          |                        | Needs Met |     |                        | Cereal Production Balance <sup>12</sup> |          |
|------------|-----------|------------------------|-----------------------|----------|------------------------|-----------|-----|------------------------|---|----------|
|            |           |                        | 1997/98 (MT)          | Avg (MT) | 1997/98 vs Avg (% Dif) | 1997 (%)  | Avg | 1997/98 vs Avg (% Dif) | 1997 (MT)                               | Avg (MT) |
| Agadez     | 309,545   | 62,062                 | 2,882                 | 1,078    | 167                    | 5         | 2   | 146                    | -59,180                                 | -55,732  |
| Diffa      | 208,866   | 44,025                 | 19,519                | 27,856   | -30                    | 44        | 68  | -35                    | -24,505                                 | -13,208  |
| Dosso      | 1,372,021 | 298,266                | 263,590               | 291,777  | -10                    | 88        | 106 | -17                    | -34,676                                 | 17,092   |
| Maradi     | 1,863,738 | 402,210                | 454,824               | 416,073  | 9                      | 113       | 112 | 1                      | 52,614                                  | 45,516   |
| Tahoua     | 2,326,107 | 489,332                | 374,341               | 336,094  | 11                     | 77        | 74  | 3                      | -114,991                                | -115,121 |
| Tillabéry  | 1,620,758 | 350,163                | 268,157               | 345,790  | -22                    | 77        | 107 | -28                    | -82,006                                 | 21,359   |
| Zinder     | 1,838,018 | 395,488                | 462,043               | 374,187  | 23                     | 117       | 103 | 14                     | 66,555                                  | 8,993    |
| Irr Prod   |           |                        | 45,237                |          |                        |           |     |                        | 45,237                                  |          |

Source: Ministry of Rural Development, Hydrology, and Environment

### III. Food Access

This current analysis of vulnerability suggests that approximately 680,000 Nigeriens are highly food insecure and another 606,000 are moderately food insecure in 1997/98 (table 3).

<sup>11</sup> Net Production by Department included rainfed millet, sorghum, maize, and rice. Irrigated production for 1997 includes irrigated rice, millet, and sorghum. This entry was included because Ministry of Rural Development, Hydrology, and Environment did not include the Department breakdown of these crops. Wheat was not included in the analysis for lack of historic data. Net wheat production for 1997 was 5,347 MT (3 percent of total production). See cereal balance (table 1) for cereal-specific gross to net conversion factors and consumption rates.

<sup>12</sup> 'Cereal balance' in this table refers to the difference between local consumption needs and local production. It does not take into account stocks, imports, or exports.

Table 3: Food Insecure Populations in Niger in 1997/98<sup>13</sup>

| Department/<br>Arrondissement | Farmers and Agropastoralists |            | Pastoralists |            | Total   |            |
|-------------------------------|------------------------------|------------|--------------|------------|---------|------------|
|                               | Highly                       | Moderately | Highly       | Moderately | Highly  | Moderately |
| <b>Tillabéry</b>              | 152,000                      | 514,000    | 4,000        | 26,000     | 156,000 | 540,000    |
| Ouallam                       | 152,000                      |            | 4,000        |            | 156,000 |            |
| Filingué                      |                              | 265,000    |              | 9,000      |         | 274,000    |
| Say                           |                              | 32,000     |              | 2,000      |         | 34,000     |
| Téra                          |                              | 217,000    |              | 15,000     |         | 232,000    |
| <b>Tahoua</b>                 | 63,000                       |            | 22,000       |            | 85,000  |            |
| Tchintabaraden<br>Abalak      | 63,000                       |            | 22,000       |            | 85,000  |            |
| <b>Zinder</b>                 | 57,000                       | 51,000     | 9,000        | 15,000     | 66,000  | 66,000     |
| Tanout                        | 57,000                       |            | 9,000        |            | 66,000  |            |
| Gouré                         |                              | 51,000     |              | 15,000     |         | 66,000     |
| <b>Diffa</b>                  | 157,000                      |            | 15,000       |            | 172,000 |            |
| Maïné Soroa                   | 83,000                       |            | 4,000        |            | 87,000  |            |
| Diffa                         | 50,000                       |            | 3,000        |            | 53,000  |            |
| N'Guigmi                      | 17,000                       |            | 8,000        |            | 25,000  |            |
| Diffa City                    | 7,000                        |            |              |            | 7,000   |            |
| <b>Agadez</b>                 | 168,000                      |            | 33,400       |            | 201,400 |            |
| Tchirozerine                  | 78,000                       |            | 22,000       |            | 100,000 |            |
| Arlit                         | 58,000                       |            | 11,000       |            | 69,000  |            |
| Bilma                         | 6,000                        |            | 100          |            | 6,100   |            |
| Agadez City                   | 26,000                       |            | 300          |            | 26,300  |            |
| <b>Total</b>                  | 597,000                      | 565,000    | 83,400       | 41,000     | 680,400 | 606,000    |

Source: FEWS/Niger; Ministry of Rural Development, Hydrology, and Environment; National Early Warning System

## A. Rural Populations

### 1. Farmers and Agropastoralists

Farmers and agropastoralists comprise 80 percent of the total population in Niger. They are localized in the southern half of Niger, where annual rainfall levels vary between 400 mm and 800 mm (figure 1). Their primary income is derived from cereal production, with important secondary contributions from livestock, cowpeas, remittances from family members, market gardening, charcoal and firewood production, and artisanal activities, such as mat and jewelry making. Their ability to meet food needs is highly correlated with local harvest levels, cereal prices, and cowpea-to-cereal and livestock-to-cereal terms of trade.

<sup>13</sup> For arrondissements found to have food insecure populations, the number of food insecure farmers and agropastoralists is taken from the **Ministry of Rural Development, Hydrology, and Environment** deficit village list. Modifications in the numbers were made based on qualitative information. Since the deficit village list does not include pastoralists, FEWS uses a figure of 50 percent of the pastoral population of the arrondissement.

This year, cereal production was highly variable across Niger. In Maradi and Tahoua Departments and in southern Zinder Department, which are generally surplus zones, cereal and cowpea production were above average and most farmers are food secure in 1998. While percentage of needs met through cereal production at the arrondissement level was above average in Gouré and only 7 percent below average in Tanout (northern Zinder Department), production outcomes and pasture conditions were uneven within these arrondissements. In the north, where populations rely heavily on livestock production for their cereal purchases, field reports and NDVI analysis show that pasture and water conditions are poor. Qualitative assessments indicate that cereal production was below average. Following particularly poor harvests during the two previous seasons, the poorest households have sold off livestock, leaving them with reduced resources to purchase cereals in 1998. While livestock-to-millet terms of trade have improved since August 1997, they were still at their lowest level of the decade in 1997. The populations of Gouré will compensate for lost production and poor livestock-to-cereal terms of trade by intensifying off-season gardening activities. They are considered moderately food insecure. In Tanout, people lack alternative sources of income to compensate for losses and are considered highly food insecure.

In Dosso Department, which on average produces 106 percent of its cereal needs (Appendix 2), cereal production was below average in all arrondissements in 1997/98, covering only 88 percent of cereal needs. The percentage of cereal needs met in Dogondoutchi and Dosso Arrondissements was 28 and 24 percent below average. However, given their diversity of income sources and good harvests in the two preceding years, farmers in this Department are food secure in 1998.

Tillabéry and Diffa Departments experienced very poor harvests, with preliminary estimates of 1997/98 cereal production in all arrondissements in these Departments well below average, except in Ouallam Arrondissement (Tillabéry Department). Field reports from NGO representatives and field visits and NDVI analysis (figure 3) by FEWS

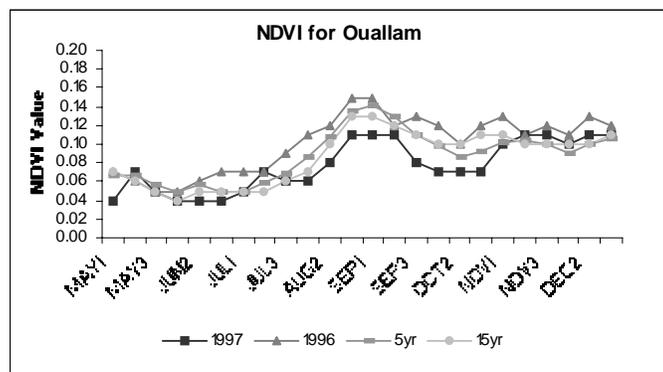


Figure 3  
Source: FEWS, NOAA

indicate that the preliminary production estimate for Ouallam could be too high. For most farmers in these Departments, this is the third consecutive poor cereal harvest. Pasture conditions are also poor. With 1997 cereal prices in Ouallam the highest of the decade, goat-to-millet terms of trade were at the lowest levels

since 1992 (figure 4), which followed one of the worst agricultural and pastoral seasons of the decade.

While preliminary estimates of cowpea production, an important cash crop in Tillabéry Department, indicate above-average production, cowpea-to-cereal terms of trade in 1997 were at the lowest levels since 1992.

However, the populations of Filingué, Say, and Téra are only moderately food insecure because they have remittance income from migrants in Niamey and coastal West Africa and access to food and income from off-season gardening and irrigated production. In addition, market cereal supply is being bolstered by cereals from Mali and Maradi and Zinder Departments. Because of more limited alternative income activities, the population of Ouallam Arrondissement is highly food insecure.

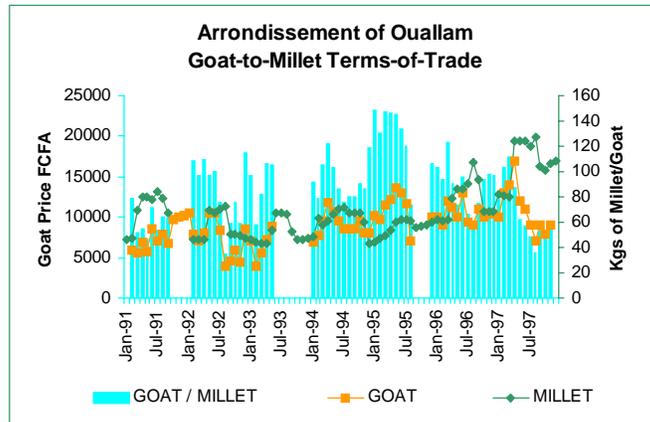


Figure 4  
Source: Niger Market Information System; MRDHE

In Diffa Department, farmers' alternative income sources are more limited than in Tillabéry Department. In addition to cereal production being 30 percent below average at the Department level, pasture and water availability are extremely poor, and goat-to-millet terms of trade are the lowest of this decade (figure 5).

Cowpea production was half last year's level. The major cash crop, green peppers, was severely damaged by pests, reducing an important secondary-income source. Even wild

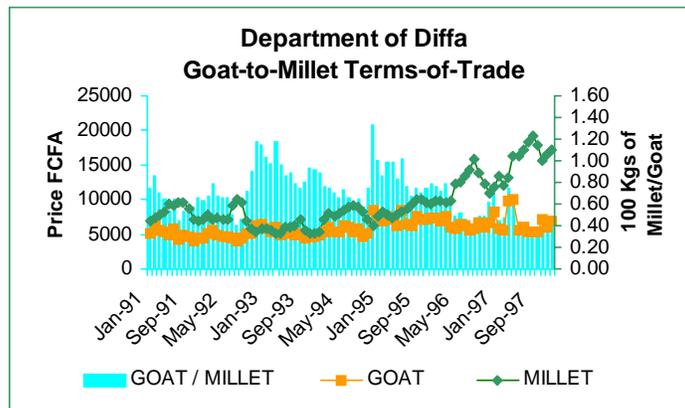


Figure 5  
Source: Niger Market Information System; MRDHE

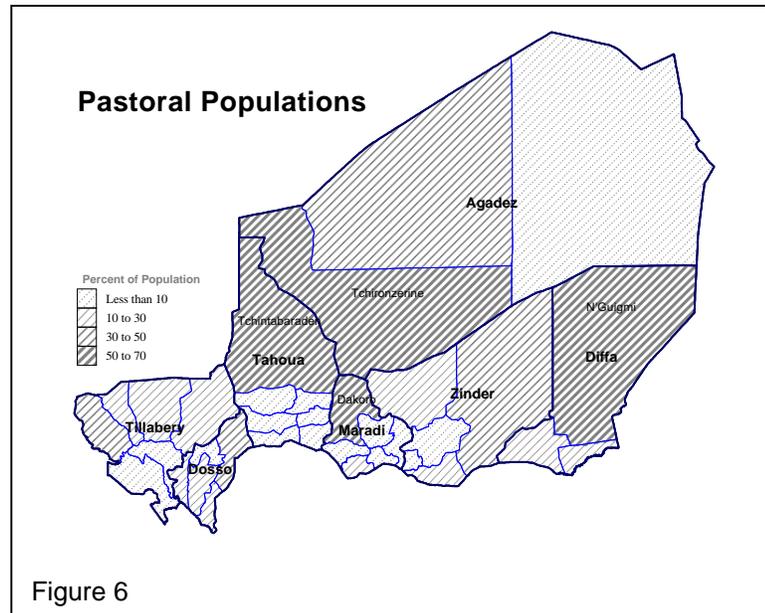
foods, which contribute significantly to consumption in times of poor harvests, are scarce this year because of poor rainfall. The populations of Diffa Department are highly food insecure in 1998.

In Agadez Department, while agricultural production is limited, there is a small group of sedentarized herders whose main income sources derive from a combination of small-scale irrigated crop production and livestock production. Because cereal production meets only a fraction of consumption needs, these

farmers rely heavily on cereal purchases. This year, however, civil insecurity is disrupting cereal flows, leaving these farmers highly food insecure.

## 2. Pastoralists

Pastoralists account for 3.8 percent of total population in Niger. They reside in all departments but represent over 50 percent of the population of Tchirozerine Arrondissement (Agadez), Dakoro Arrondissement (Maradi), Tchintabaraden and Abalak Arrondissements (Tahoua), and N'Guigmi Arrondissement (Diffa) (figure 6). Pastoralists' main income sources derive from livestock and dairy product sales. While dependent on rainfall for pasture and water for their livestock, pastoralists' mobility makes them much less vulnerable to variations in rainfall than farmers. They depend on the market for cereal purchases and their purchasing power fluctuates with changes in terms of trade between livestock and cereals.



Arrondissement (Diffa) (figure 6). Pastoralists' main income sources derive from livestock and dairy product sales. While dependent on rainfall for pasture and water for their livestock, pastoralists' mobility makes them much less vulnerable to variations in rainfall than farmers. They depend on the market for cereal purchases and their purchasing power fluctuates with changes in terms of trade between livestock and cereals.

This year the MRDHE reports that only the Departments of Agadez, Dosso, Maradi, and Zinder have adequate fodder production for normal herd concentrations. Pasture conditions in Diffa Department are particularly poor. Reports from the field indicate that the ponds in many pastoral areas were not filled to their usual level due to rainfall deficit. In the Department of Tillabéry almost none of the pumps are functioning and many wells are filled with sand. Thus even in some areas where pasture is adequate, there is insufficient water. In Agadez, Diffa, Tahoua, and Tillabéry Departments, civil insecurity has disrupted cereal flow and hindered herd movements. With livestock-to-cereal terms of trade their lowest in the decade, pastoralists will have difficulty meeting their food needs in 1998. In Ouallam (Tillabéry Department), Tchintabaraden and Abalak (Tahoua), Tanout (Zinder Department), and all the Arrondissements of Diffa and Agadez, pastoralists are highly food insecure. In Filingué, Say, and Téra (Tillabéry Department) and Gouré (Zinder Department), pastoralists are moderately food insecure.

## B. Urban Populations

Urban populations represent 16 percent of Niger's total population. Their access to cereals is closely linked to cereal prices. Stagnant wages and salaries, arrears in the payment of civil servants' salaries, high unemployment, and high cereal prices have made food access difficult, but most urban residents will be able to meet their food needs in 1998. In Agadez and Diffa Departments, civil insecurity and particularly poor cereal production have compounded the already difficult situation, and approximately 33,000 urban residents in these two cities are highly food insecure.

## IV. CONCLUSION

Despite average cereal production at the national level, many areas of Niger will experience food shortages due to poor harvests, limited alternative sources of income, and unusually high cereal prices. The populations that FEWS has identified as highly food insecure require outside assistance to prevent them from depleting productive assets. The food security status of the populations identified as moderately food insecure could deteriorate if market access conditions degrade. In this case, those populations would also require outside assistance before the next harvest (October-December 1998).

Because the Government lacks the financial resources to intervene, assistance to highly food insecure populations will depend on donors' ability to mobilize funds for mitigation activities, such as food-for-work or cash-for-work and seed assistance for the next agricultural season.

## Appendix 1: Cereal Balance Using Government Consumption Figures

While FEWS/USAID uses an annual consumption rate of 190 kgs per person for nomadic and urban groups, and 220 kgs per person for sedentary farmers, the GON uses consumption rates of 200 kg per person for nomadic and urban groups, and 250 kg per person for sedentary farmers, or a weighted average consumption figure of 227.46 kg per person. Using GON consumption rates yields a cereal deficit of 150,000 metric tons, compared to the 23,000 MT figure derived using FEWS/USAID consumption figures.

Table 4 : Preliminary Cereal Balance 1997/98 using Government of Niger Consumption Figures

|  | Rice            | Wheat           | Traditional Cereals | Total            |
|--|-----------------|-----------------|---------------------|------------------|
| <b>Population Until April 1998</b>             |                 |                 |                     | <b>9,539,000</b> |
| <b>1. Available Cereal</b>                     | <b>43,747</b>   | <b>5,468</b>    | <b>1,853,918</b>    | <b>1,903,134</b> |
| <b>Production</b>                              |                 |                 |                     |                  |
| Gross Production                               | 67,100          | 6,300           | 2,172,900           | 2,246,300        |
| Net Production <sup>14</sup>                   | 43,600          | 5,300           | 1,847,000           | 1,895,900        |
| <b>Initial Stocks</b>                          |                 |                 |                     | 7,200            |
| Farmer Stocks                                  | 0               | 0               | 0                   | 0                |
| Other Stocks                                   | 100             | 100             | 7,000               | 7,200            |
| <b>2. Consumption Needs</b>                    | <b>97,000</b>   | <b>28,500</b>   | <b>2,177,700</b>    | <b>2,303,200</b> |
| <b>Human Consumption<sup>15</sup></b>          | 96,100          | 23,500          | 2,170,000           | 2,289,700        |
| <b>Ending Stocks</b>                           | 900             | 5,000           | 7,600               | 13,500           |
| Farmer Stocks                                  | 0               | 0               | 0                   | 0                |
| Other Stocks                                   | 900             | 5,000           | 7,600               | 13,500           |
| <b>3. Surplus (+) /Deficit (-) Gross</b>       | <b>(53,500)</b> | <b>(23,100)</b> | <b>(323,700)</b>    | <b>(400,100)</b> |
| <b>4. Import/Export</b>                        | <b>60,000</b>   | <b>12,500</b>   | <b>176,200</b>      | <b>248,700</b>   |
| Anticipated Commercial Imports                 | 60,000          | 10,000          | 170,000             | 240,000          |
| Anticipated Food Aid                           | 0               | 2,500           | 6,200               | 8,700            |
| Anticipated Exports                            | 0               | 0               | 0                   | 0                |
| <b>5. Surplus (+) /Deficit (-) Net</b>         | <b>6,700</b>    | <b>(10,600)</b> | <b>(147,500)</b>    | <b>(151,400)</b> |
| <b>6. Per Capita Availability<sup>16</sup></b> | <b>10.9</b>     | <b>1.9</b>      | <b>212.8</b>        | <b>225.6</b>     |

Source: Ministry of Rural Development, Hydrology, and Environment  
November 1997

<sup>14</sup> Net production is obtained by multiplying gross production by the following coefficients: 0.65 for rice and 0.85 for all other cereals.

<sup>15</sup> The GON uses annual consumption rates of 200 kg per person for nomadic and urban groups and 250 kg per person for farmers. Cereal-specific consumption figures are 10.08 kg/person for rice, 2.46 kg/person for wheat, 227.46 kg/person for other cereals.

<sup>16</sup> Per capita availability includes net production, initial stocks, and net imports.

## Appendix 2: Recent Harvest Outcomes<sup>17</sup>

| DEPARTMENT/<br>ARRONDISSEMENT | Share of Needs Met through<br>Production (%) |         |         |         | Needs Met Relative to Average<br>(% Difference) |         |         |
|-------------------------------|--|---------|---------|---------|---|---------|---------|
|                               | Average                                      | 1995/96 | 1996/97 | 1997/98 | 1995/96   | 1995/97 | 1997/98 |
| AGADEZ                        |  |         |         |         |   |         |         |
| ARLIT                         | 0  | 0       | 0       | 0       | 0   | 0       | 0       |
| BILMA                         | 0  | 0       | 0       | 0       | 0   | 0       | 0       |
| TCHIROZERINE                  | 2  | 2       | 4       | 1       | -3  | 43      | -41     |
| DIFFA                         |  |         |         |         |   |         |         |
| DIFFA                         | 79   | 57      | 54      | 43      | -28   | -32     | -45     |
| MAINESOROA                    | 81   | 49      | 110     | 61      | -40   | 36      | -25     |
| NGUIGMI                       | 57   | 21      | 23      | 9       | -63   | -59     | -85     |
| DOSSO                         |  |         |         |         |   |         |         |
| BOBOYE                        | 111  | 73      | 91      | 102     | -34   | -17     | -8      |
| DOGONDOUTCHI                  | 119  | 108     | 122     | 86      | -10   | 3       | -28     |
| DOSSO                         | 91   | 92      | 84      | 69      | 1   | -8      | -24     |
| GAYA                          | 111  | 153     | 112     | 104     | 38  | 0       | -7      |
| LOGA                          | 102  | 99      | 99      | 99      | -2  | -3      | -3      |
| MARADI                        |  |         |         |         |   |         |         |
| AGUIE                         | 134  | 135     | 100     | 117     | 1   | -25     | -12     |
| DAKORO                        | 120  | 121     | 191     | 114     | 1   | 60      | -5      |
| GROUMDJI                      | 142  | 165     | 80      | 119     | 17  | -43     | -16     |
| MADAROUNFA                    | 97   | 157     | 71      | 139     | 62  | -27     | 43      |
| MAYAHI                        | 101  | 113     | 93      | 116     | 11  | -8      | 15      |
| TESSAOUA                      | 134  | 107     | 106     | 127     | -20   | -21     | -5      |
| TAHOUA                        |  |         |         |         |   |         |         |
| BIRNI N'KONNI                 | 113  | 113     | 178     | 166     | 0   | 57      | 46      |
| BOUZA                         | 89   | 112     | 122     | 73      | 25  | 36      | -19     |
| ILLELA                        | 91   | 91      | 173     | 87      | 0   | 91      | -4      |
| KEITA                         | 85   | 100     | 97      | 74      | 17  | 14      | -13     |
| MADAOUA                       | 104  | 132     | 143     | 135     | 28  | 38      | 30      |
| TAHOUA                        | 102  | 108     | 65      | 132     | 5   | -37     | 30      |
| TCHINTABARADEN                | 35   | 33      | 58      | 32      | -4  | 66      | -8      |
| TILLABERY                     |  |         |         |         |   |         |         |
| FILINGUE                      | 102  | 101     | 73      | 64      | -1  | -28     | -37     |
| KOLLO                         | 99   | 74      | 99      | 73      | -25   | 0       | -26     |
| OUALLAM                       | 75   | 58      | 59      | 74      | -22   | -21     | 0       |
| SAY                           | 164  | 143     | 115     | 78      | -13   | -30     | -52     |
| TERA                          | 102  | 70      | 81      | 68      | -32   | -21     | -33     |
| TILLABERY                     | 74   | 41      | 83      | 71      | -45   | 12      | -4      |
| ZINDER                        |  |         |         |         |   |         |         |
| GOURE                         | 7  | 4       | 3       | 4       | -46   | -64     | -48     |
| GOURE                         | 137  | 71      | 99      | 157     | -48   | -27     | 15      |
| MAGARIA                       | 98   | 118     | 71      | 119     | 21  | -27     | 21      |
| MATAMEYE                      | 119  | 78      | 135     | 125     | -34   | 13      | 5       |
| MIRRIAH                       | 112  | 95      | 150     | 122     | -15   | 34      | 9       |
| TANOUT                        | 132  | 89      | 45      | 122     | -32   | -65     | -7      |

Source: Ministry of Rural Development, Hydrology, and Environment

<sup>17</sup> The 1990/91-1994/95 average is used rather than the 1992/93-1996/97 average to enable comparison of 1995/96, 1996/97, 1997/98 to the same 5-yr average.