Niger 1999/2000
Current Vulnerability Assessment

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Famine Early Warning System Project

U.S. Agency for International Development

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List of Abbreviations

CVA	current vulnerability analysis
FEWS	Famine Early Warning System (USAID project)
GON	Government of Niger
MDR	Ministry of Rural Development - *Ministère du Développement Rural*
MRA	Ministry of Animal Resources - *Ministère des Ressources Animales*
MT	metric tons
SAP	(Nigerien National) Early Warning System – Système d'Alerte Précoce
SIMB	(Nigerien National) Livestock Market Information System – *Système d'Information sur le Marché du Bétail*
SIMC	(Nigerien National) Cereal Market Information System – *Système d'Information sur le Marché Céréalier*
USAID	United States Agency for International Development
OPVN	(Nigerien National) Cereals Board - Office des Produits Vivriers du Niger

Executive Summary

This current vulnerability assessment (CVA) considers the ability of populations to meet their food needs between November 1, 1999 and October 31, 2000.

The 1999 rainfed agricultural season started late, on average by about two weeks. However, higher-than-average rainfall, well-distributed in time and space over the course of August and September, resulted in a harvest bettered only by that of the 1998/99 record harvest. The Ministry of Rural Development's (MDR) final estimate of gross production of millet, sorghum, rice and wheat for the 1999/2000 agricultural season of 2,871,134 MT is 4 percent lower than the record harvest of 1998/99 and 25 percent higher than the 1994/95 – 1998/99 average[1]. The MDR has also released a final estimate of cowpea production – the major cash crop – of over 400,000 MT. The production is 46 percent lower than 1998/99 and 6 percent higher than average.

In all seven departments, the sum of the production of range grasses and of agricultural by-products exceeds that needed to support herds of livestock until the next rainy season (May 2000). Well-filled seasonal ponds allow maximum use of available pasture; animal health has been good. The Niger River is at a similar high level to last year, allowing good off-season gardening along its banks. Throughout the country, well-filled seasonal ponds provide good prospects for irrigated and recessional cultivation. The major constraint to off-season agricultural and horticultural production is that those who normally perform it have less need of the revenue it produces due to favorable rainy-season production.

Using the government's figures for consumption per capita, domestic cereal availability from production and stocks falls short of covering requirements by about 43,000 MT. With planned net imports of 195,000 MT and pledges of food-aid imports of approximately 14,000 MT, the cereal balance presents a surplus of 166,000 MT at the national level. For only the second time in the last decade, Niger has experienced a positive cereal balance for two consecutive years.

Pastoralists across Niger will benefit from the excellent pasture and water conditions and from relatively high livestock-to-cereal terms of trade. They will not only be able to meet their food needs but should be able to build herd sizes. Pastoralists are considered food secure.

This year's excellent cereal harvest, an above-average cowpea harvest and favorable conditions for off-season gardening and irrigated and recessional cultivation have left most farmers and agropastoralists food secure. However, farmers and agropastoralists in the *Arrondissements* of Arlit and Tchirozerine (Agadez Department), Abalak and Tchintabaraden (Tahoua Department), Ouallam and Tillabéry (Tillabéry Department), and N'Guigimi (Diffa Department)

[1] All production averages are calculated based on the most recent 5-year period - 1994/95-1998/99.

are moderately food insecure (see FEWS Categories of Food Insecurity box and figure 1). In all of these *Arrondissements*, this year's cereal production was below average and income from cowpeas and livestock offtake is not sufficient to provide adequate food access. Despite favorable bio-physical conditions for off-season production, high costs of inputs, including fuel for irrigation pumps, are limiting production. In Agadez and Diffa Departments, civil insecurity raises food and transportation costs and limits economic activity. Average households will only be able to meet their food needs through intensification of secondary income activities that will cause hardships in the months ahead but will not compromise future food security.

Niger's urban populations have been facing a steady decline in their welfare since at least the 1990s. Civil servants have not received their salaries for months and have accumulated over 12 months of salary arrears over the past couple of years. In Niamey, where civil servant salaries indirectly support up to half the city's population of 600,000, the impact of unpaid salaries is felt throughout the economy of the capital city. Residents of the other major urban centers, Maradi and Zinder (each with over 100,000 inhabitants) and Tahoua and Agadez (each with over 50,000 inhabitants), rely less heavily on government salaries, but have suffered similar declines in urban welfare because of the steady decline in the Nigerien economy (see preface). Although 2 successive good rainfed harvests have lowered food prices, many urban households have had to draw on assets and intensify coping activities to make ends meet. The poorest urban households are considered moderately food insecure.

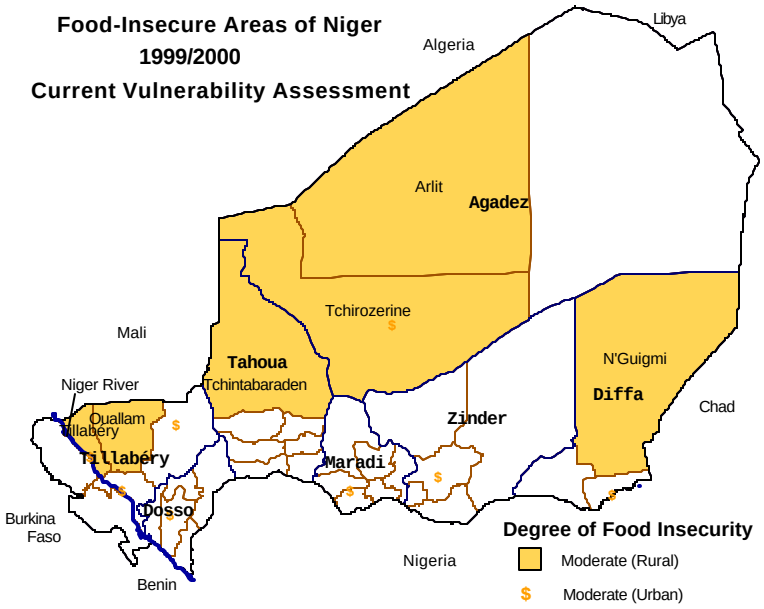
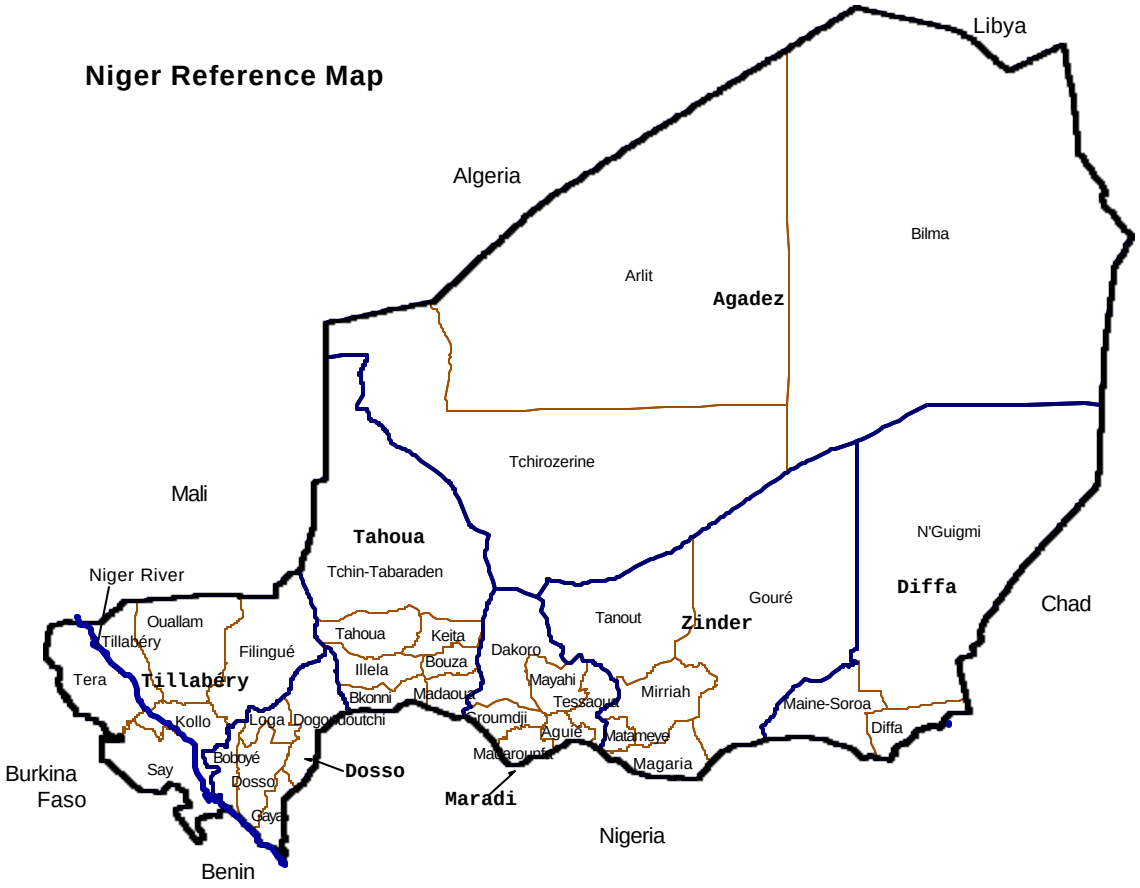


Figure 1
Source: FEWS

By definition, moderately food insecure populations do not need emergency food assistance. But food-for-work programs to rehabilitate wells, plant trees and attenuate desertification will help rural populations that have exhausted their resources over the last few years from further depletion. The recent improvement in relations between Niger and major donors following the democratic elections in

November 1999 are already bringing a steady flow in development assistance and budgetary support. The Government has promised to pay civil servant salary arrears, which should bring relief for urban populations.

Figure 2. NIGER Reference Map

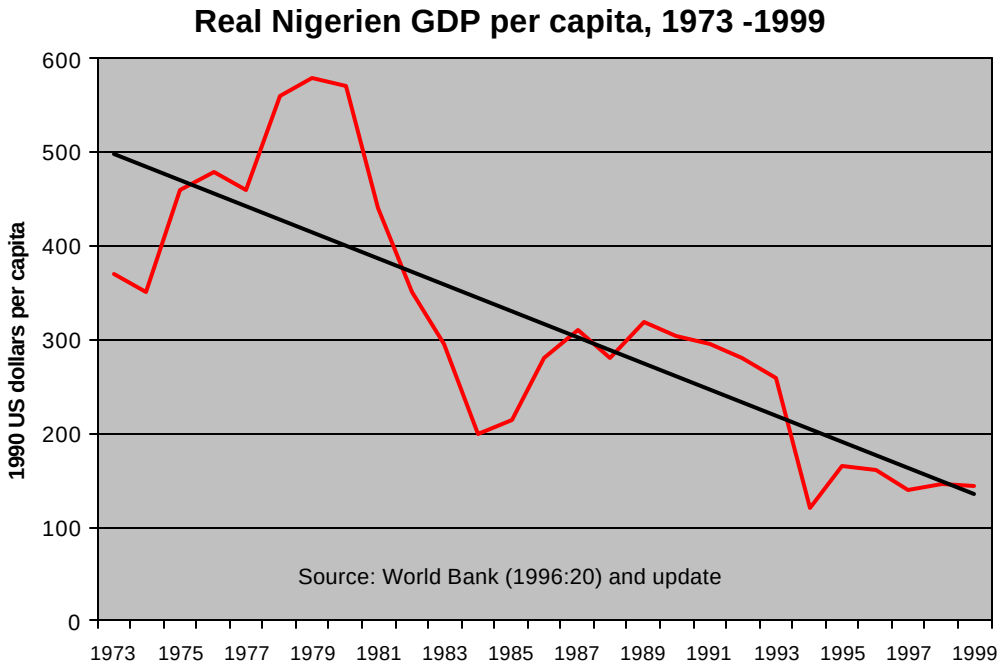


Source: FEWS

PREFACE

In one sense, Nigerien economic activity almost doubled from 1988 to 1998: the gross domestic product (GDP) rose from 660 billion to 1.21 trillion CFA francs. However, the 1994 depreciation halved the value of the CFA franc in dollar terms and, in the interim, the Nigerien population grew from 7.2 to 10.0 million inhabitants. Thus, in real dollar terms, economic activity per person has shrunk from $280 to $150, continuing a trend that had started a decade earlier, as the country's uranium boom began to founder (graph 1).[2]

Graph 1



As average GDP/capita has fallen, so the chances that a Nigerien will be food insecure have risen. Indeed, because of a skewed income distribution, in 1999 more than half the population subsisted at annual GDP/capita levels below the mean of $144.

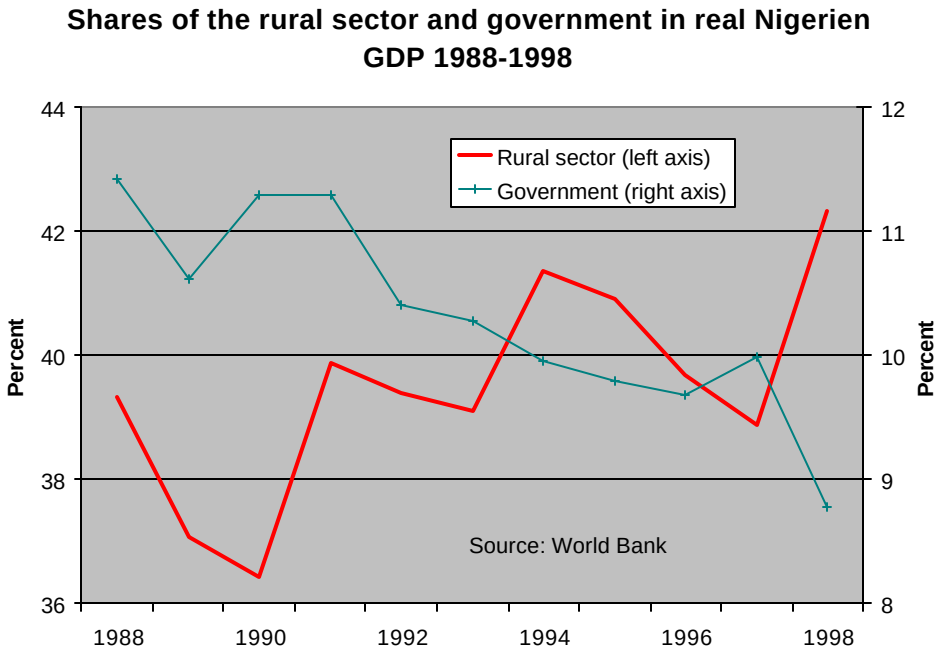
The contracting economy has become more rural, less formal and less influenced by government. Graph 2 shows that the rural sector grew from 36 to 42 percent of the economy from 1990 to 1998, while the share of government fell from 11 to 9 percent over the same period. In addition, World Bank statistics

[2] The devastating droughts of 1968-74 and 1983-85 contributed significantly for low values over those periods. The relatively high values from 1986 - 1993 occur mostly due to a CFA franc overvalued relative to the dollar (and other currencies). The residual trend is one of a decline from the uranium boom of the 1970s to the increasingly agrarian economy of the 1990s.

show that the share of the formal sector in the economy fell from 30 to 26 percent of the economy from 1988 to 1998. (World Bank Mission, Niamey)

A less formal economy means a less accessible tax base. Since 1998, government activity has faltered further because of the absence of several aid donors. As one symptom of this phenomenon, civil servants have not received up to half their monthly salaries. As a result, the large extended families that depend on civil-servant breadwinners have suffered reduced access to food. This has particularly affected urban food security because civil servants are mostly urban-based.

Graph 2



However, above-average precipitation in 1998 and 1999 produced two successive years of good rainfed harvests of cereals and cash crops, on the one hand, and of pasture and crop residues for livestock, on the other. The short-term result has been a lowered concern about rural food security and a heightened interest in the food security of the urban poor.

However, in the long run, Niger suffers from grave structural problems in its rural sector. Since the 1968-74 drought, this country situated on the southern edge of the Sahara has become a net importer of food (mainly millet) in most years. With annual population growth of 3 percent, its small and fragile agricultural zone is under continually increasing stress. Little agricultural intensification takes place; most farmers cultivate as their grandfathers did, only with less fallow land. Most expansion takes place on marginal lands where agriculture competes with

livestock for land that receives low and erratic rainfall, and thus poor production. Unsurprisingly, yields have fallen. World Bank research (1988) shows that Niger has the highest level of population per unit of potential food energy produced by domestic agriculture ("agroclimatic population density") in Africa. In contrast, Nigeria and Mali have levels almost one order of magnitude lower. The inability of the land to feed the people leads to an annual dry-season outmigration on an unknown scale by farmers and pastoralists, numbering in the tens, possibly hundreds, of thousands. Many never return.

I. Introduction

This Current Vulnerability Assessment (CVA) focuses on current or transitory food insecurity (see Key Terms box) for both Niger as a whole and for specific populations within the country.

For the current consumption period (November 1, 1999 to October 30, 2000), it:

- evaluates whether there will be enough food available at the national level to meet the consumption needs of the entire population;
- identifies *Arrondissement*s where the 'average' household is likely to be food insecure;
- describes the extent to which households in these *Arrondissement*s are food insecure using FEWS categories of food insecurity (see FEWS Categories of Food Insecurity box);
- evaluates the impact of potential shocks to food security in the current consumption period;
- provides a basis for determining where concerted monitoring and possible interventions (including emergency food aid) may be needed; and
- summarizes the actions that are being taken or need to be taken to respond to any food emergencies.

Key Terms

Food Security is a condition in which a population has physical, social and economic access to sufficient safe and nutritious food over a given period to meet dietary needs and preferences for an active life. A food-secure population can meet its consumption needs during the given consumption period by using strategies that do not compromise future food security.

> **Food Availability** is a measure of the food that is, and will be, physically available in the relevant vicinity of a population during the given consumption period through a combination of domestic production, stocks, trade and transfers.
>
> **Food Access** is a measure of the population's ability to acquire available food during the given consumption period through a combination of its own production and stocks, market transactions or transfers.
>
> **Food Utilization** is a measure of whether a population will be able to derive sufficient nutrition during the given consumption period from available and accessible food to meet its dietary needs.

Food Insecurity is the inverse of food security: a condition in which a population does not have access to sufficient safe and nutritious food over a given period to meet dietary needs and preferences for an active life. Possible causes are insufficient food availability, insufficient food access and inadequate food utilization.

> **Current (or transitory) food insecurity** occurs when a population suffers a temporary decline in consumption. Current food insecurity can result from instability in food production, food prices, household incomes, or health conditions.
>
> **Chronic (or long-term) food insecurity** occurs when a population has continuously inadequate consumption. Chronic food insecurity arises from conditions of poor food production, limited incomes, and poor health.
>
> (Adapted from World Bank, 1986)

II. National Food Security

A. Domestic Food Availability

There are two main components of domestic food availability: national food production and food stocks.

1. Production

The 1999 rainfed agricultural season started late, on average by about two weeks. However, higher-than-average rainfall, well-distributed in time and space over the course of August and September, resulted in a harvest bettered only by that of the 1998/99 record harvest. The Ministry of Rural Development's (MDR) final estimate of gross production of millet, sorghum, rice and wheat for the 1999/2000 agricultural season of 2,871,134 MT is 4 percent lower than the record harvest of 1998/99 and 25 percent higher than the 1994/95 – 1998/99 average[3]. The MDR has also released a final estimate of cowpea production – the major cash crop – of over 400,000 MT. The production is 46 percent lower than 1998/99 and 6 percent higher than average.

Table 1. Comparison of 1999/2000 final gross production estimates with final estimates for 1998/99 and the 1994/95 - 1998/99 average

Consumption Year	Millet/Sorghum	Maize	Rice	Wheat	Total
1999/2000 (MT)	2,782,961	15,294	60,450	12,699	2,871,374
1998/99 (MT)	2,902,248	5,200	59,026	12,491	2,978,965
Average (MT)	2,224,308	4,304	63,940	5,618	2,298,171
Difference in % 1999/2000 vs 1998/99	-4	194	2	1	-4
Difference in % 1999/2000 vs average	25	255	-5	125	25

Sources: Ministry of Rural Development; FAO/CILSS

2. Initial Stocks

Estimated stocks include farmer stocks, commercial stocks and the National Food Security Stocks. As of November 1, 1999, estimated stocks for the 1999/2000 consumption year equaled 80,600 MT of cereals.

B. Domestic Utilization

Food requirements for the year include food use, feed and seed requirements, and closing stocks.

[3] All production averages are calculated based on the most recent 5-year period - 1994/95-1998/99.

1. Food Use

a. Population
The National Statistics Office estimates the country's mid-2000 population at 10,065,000. The population is derived by extrapolating the results of the 1988 census using a 3 percent annual growth rate.

b. Consumption Requirements and Consumption Period
The Government of Niger bases its calculations of cereal consumption requirements on annual consumption norms of 250 kilograms per person for the sedentary population and 200 kilograms for pastoralists and urban dwellers. The consumption period runs from November 1, 1999 to October 30, 2000.

Using these consumption norms, the Government estimates the 1999/2000 national consumption requirement at 2,415,264 MT, including 2,256,345 MT of millet, sorghum and maize; 132,147 MT of rice; and 26,772 MT of wheat.

2. Other Uses

Nigeriens use little cereal for animal feed, with the exception of minor use for feed for intensive poultry rearing. Seed requirements are accounted for in converting from gross to net production.

3. Closing Stocks

Projected closing stocks (October 2000) are estimated at 137,000 MT. This includes estimated on-farm stocks of 100,000 MT of coarse cereals (millet, sorghum and maize); national security stocks of 30,000 MT; donor/NGO stocks of 7,000 MT.

Donors and the Government's *Office des Produits Vivriers du Niger* (OPVN) jointly manage the national security stock, which consists of a physical stock and a financial stock. The pre-positioned physical stock has grown steadily since 1998. In November (the beginning of the 1999/2000 consumption period), it was approximately 15,000 MT, and planned purchases will bring it to 30,000 MT by the end of the consumption period. The target level for the physical stock is 40,000 MT. In addition, donors have so far provided 46 million CFA francs towards a financial stock that will ultimately be capable of buying another 40,000 MT. In case of an emergency that threatens to draw down the physical stocks, the financial stock would be used to purchase cereals.

C. Trade

1. Projected Commercial Imports

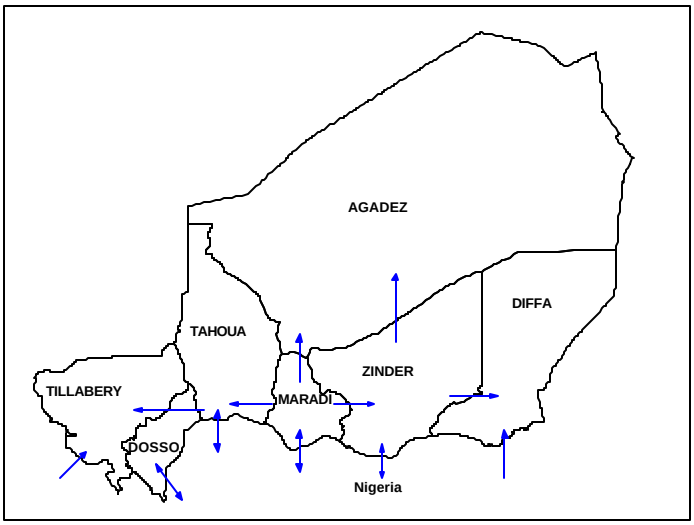


Figure 3: Cereal flows between Nigerien departments and with neighboring countries
Source: FEWS

Maradi Department and the southern parts of Zinder and Tahoua Departments usually generate surpluses of agricultural crops, principally cereals. After the harvest, traders and cooperatives collect cereals from these departments to supply other parts of Niger (figure 3). However, at least since the 1968-74 drought, the cereal surplus in these zones has rarely been enough to cover the consumption requirement of the rest of the country. Therefore, in most years, Niger relies on imports of millet and sorghum from northern Nigeria, where they are also staple foods. In addition to cereal inflows from Nigeria, western Niger imports maize from Benin and other countries to the west and south, though to a lesser extent; and Malian millet has also appeared in western Niger in some recent years.

However, in the context of the good millet harvests in 1998/99 and 1999/2000, Niger's current need to import millet and sorghum remains subdued. Total Government forecasts of cereal imports equal 208,900 MT. Coarse cereals, mostly maize, account for 108,000 MT of the total. Rice accounts for 80,000 MT and wheat (in the form of flour) for 20,900 MT, but the imposition in early 2000 of increased import taxes on these two cereals could reduce their import level. Total projected cereals imports are 26 percent lower than in 1998/99 but remain higher than the mean level of inflows over the past five years. In the years immediately following the 1994 devaluation of the CFA franc, there were few incentives for imports from outside the CFA-franc zone, particularly from Nigeria. However, over time, the effect of the devaluation has diminished, partially explaining the rise in imports.

2. Projected Commercial Exports

The government has no good estimate for exports of cereals and so prefers not give one. The 1999 harvest of coarse cereals in northern Nigeria (the principal partner of Niger for export and import) seems to have been as good as in Niger so, despite Niger's surplus, the incentive for exports of these commodities may be muted and excess production may mostly go to storage. As of January 2000, wholesale millet prices in northern Nigeria's principal market, Kano, had fallen to

the equivalent of 6,800 CFA francs per 100 kilogram, from an already low level of around 7,200 CFA francs per 100 kilogram during the previous three months. Millet prices in Niger in January were 9,300 CFA francs per 100 kilogram. It is difficult to imagine that Nigerien millet prices will fall to a level that would make it competitive for traders to export Nigerien millet to Nigeria.

3. Projected Food Aid Imports

Projected food aid imports are 13,900 MT. Some of the food aid imported by donors such as rice and wheat flour is sold in Niger to purchase millet from Niger or from neighboring countries for replenishing the National Security Stock.

D. National Food Balance

Based on the post-harvest 1999/2000 harvest estimates of rainfed and irrigated production and estimated net stocks and projected net imports, the national cereal balance (table 2) shows a national surplus of approximately 165,000 MT. Thus projected supplies cover national needs until the next harvest in October-November 2000. For only the second time in the last decade, Niger has experienced a positive cereal balance for two consecutive years.

Table 2: Niger's post-harvest cereal balance 1999/2000

	Rice	Wheat	Millet, Sorghum Maize	TOTAL
Population (30th April 2000)				10,065,000
I. DOMESTIC SUPPLY (MT)	**44,185**	**12,658**	**2,452,313**	**2,509156**
Production (MT)				
- gross (MT)	60,450	12,669	2,798,255	2,871374
- net after post harvest losses (MT)	**39,293**	**10,769**	**2,378,517**	**2,428,579**
Initial stocks (MT)	**4,892**	**1,889**	**73,796**	**80,577**
- on farm (MT)	0	0	53,040	53,040
- other (MT)	4892	1900	20,756	27,537
II. REQUIREMENTS	**137,147**	**28,772**	**2,386,345**	**2,552,264**
Consumption norms (kg/capita/year)	13.13	2.66	-	-
Total human consumption (MT)	**132147**	**26772**	**2256345**	**2,415,264**
Final stocks (MT)	**5000**	**2000**	**130000**	**137,000**
- on farm (MT)	0	0	100,000	100,000
- other (MT)	5,000	2,000	30,000	37,000
III. GROSS SURPLUS (OR DEFICIT) (MT)	**-92,962**	**-16,100**	**65,968**	**-43,108**
IV. TRADE BALANCE (MT)	**80,000**	**20,900**	**108,000**	**208,900**
- commercial imports forecast (MT)	75,000	20,000	100,000	195,000
- aid imports forecast (MT)	5,000	900	8,000	13,900
- exports forecast (MT)	-	-	-	-
V. NET SURPLUS (OR DEFICIT) (MT)	**-5,000**	**4,800**	**130,500**	**165,792**
VI. APPARENT AVAILABILITY/CAPITA (kg)	**12.34**	**3.3**	**254,39**	**271.8**

Source: Direction de la Statistique Agricole
Notes: " - " indicates "not known" or "not defined"; "apparent availability" = domestic supply – final stocks + net imports.

E. National and Subnational Production - Likely Implications for Flows and Prices

Of Niger's seven departments, only Maradi had below-average production (table 3). In both Maradi and Tahoua Departments excessive rainfall limited cereal production. Cereal production was adversely affected in five of Maradi's six *Arrondissement*s, leading to below-average Department-level production. In Tahoua Department[4], above-average production in the three southern-most *Arrondissement*s compensated for below-average production in the remaining four, yielding above-average production at the Department level.

Tahoua and Zinder had larger-than-average cereal production surpluses[5] and Dosso posted a large surplus of almost 18,000 MT compared with an average deficit of 24,000 MT. The large production shortfall in Maradi Department (often considered the breadbasket of Niger) left it with a deficit of almost 6,000 MT instead of its average surplus of almost 35,000 MT. The large surpluses in Dosso, Tahoua, and Zinder will help to fill production deficits in the structurally deficit Departments of Agadez, Diffa and Tillabéry. Had production not been so good in these 3 production-surplus Departments, Maradi's large production deficit would have had a negative effect on cereal availability in the structurally deficit Departments. In addition, northern Nigeria's good production will stem demand for Nigerien cereals and also serve as a potential source of supply, thus improving overall availability in Niger.

Table 3: Department Level 1999 Net Cereal Production and Cereal Production Balances Compared to Average

Department	Avg Net Prod (Kg/Cap)	1999 Net Prod (Kg/Cap)	Net Prod 1999 vs Avg (% Dif)	Avg Cereal Balance (MT)	1999/2000 Cereal Balance (MT)
Agadez	3	3	0	-65,364	-70,920
Diffa	117	194	66	- 19,922	- 8,858
Dosso	215	258	20	-24,002	17,998
Maradi	259	240	-7	34,705	-5,945
Tahoua	238	259	9	8,645	27,201
Tillabéry	146	179	23	-160,541	-133,675
Zinder	224	302	35	6,970	116,005

Source: Ministry of Rural Development

The overall effect of favorable national production in Niger for the second consecutive year will be relatively low cereal prices. Only Maradi Department might be expected to experience relatively high prices, certainly higher than last year's extremely low levels.

[4] Tahoua Department has eight *Arrondissement*s. However, in table 4 we include data for the recently created Abalak *Arrondissement* with those for Tchintabaraden *Arrondissement* from which it has been created in order to make comparisons with previous years.

[5] A cereal production balance (surplus for positive balances and deficit for negative balances) is the difference between consumption needs (based on national-level consumption norms) and net cereal production.

F. Caveats and Uncertainties

1. Caveats

In the overall analysis of food security, it is important to understand the limitations of the national cereal balance sheet. Because the assumptions and the data collection methodologies that yield the various estimates in the food balance sheet remain the same from year to year, it is a useful tool for detecting anomalies. As such, the cereal balance sheet provides a general overview of availability vs needs **compared to average**. The most important insight to be gained from this comparison is on overall cereal prices and household food access that results from larger/smaller than average surpluses/deficits.

In the past, USAID/FEWS has calculated an independent cereal balance sheet using lower consumption norms than those used by the Government. The difference in the norms used lies not in the estimated caloric needs (both used 2200 kcal/person/day), nor in different methodologies for taking account of retained seed and losses to pests (both use the same transformation coefficients in the converting from gross to net production), nor in the assumed share of calories met from cereal consumption (both use 69 percent for urban and herder populations and 80 percent for rural sedentary populations) but in 'table losses' (the losses incurred in milling the cereals into flour). USAID uses an FAO figure of 13 percent milling losses whereas the Government of Niger uses 20 percent. This technical discrepancy results in the government's annual consumption figures of 200 kg per capita for urban and pastoral populations and 250 kg for sedentary rural populations and FAO/USAID figures of 190 and 220 kg.

This difference in the annual consumption rates naturally leads to a difference in total consumption requirements as estimated by USAID/FEWS and the GON. The divergence between USAID/FEWS *absolute* estimates of the net cereal balance and the Government's has been a constant point of contention between the two. In an effort to eliminate that point of contention, FEWS is now using the Government consumption norms.

This change represents a departure from the past in that the absolute numbers for consumption requirements will be larger. Since FEWS has always used Government estimates for all other components of the cereal balance, the larger absolute consumption requirement will necessarily lead to larger absolute deficits or smaller absolute surpluses, depending on the year. But the shift will not greatly change the size of the net surplus or deficit *relative to average*. Thus, using the GON consumption rate rather than the FEWS/USAID consumption rate will point to similar conclusions, regardless of differences in the absolute numbers.

This shift will in no way directly affect food aid calculations. Food aid needs are not determined based on the absolute numbers that come out of the cereal balance sheet. Even in years of surplus – like the past 2 years in Niger -- there

are usually populations that are food insecure despite a surplus cereal balance. Household food security depends not just on physical availability, but on whether households have the means to gain access to that food and whether household members have the capacity to properly utilize food. Current Vulnerability Assessments identify the areas or specific socio-economic groups within areas as food secure or food insecure. They need to be followed by food needs assessments that give numbers of people needing assistance, the period they will need assistance, and the quantity of food and other assistance needed. The quantity of food needed is not calculated based on 'normal' (Government) consumption requirements. It is calculated based on a minimum maintenance ration of 1900 kcal per person per day. In cereal terms, that is about 500 g/day (183 kg per person per year), but it is usually less because products other than cereals are usually included in the ration.

2. Uncertainties

The imposition in early 2000 of increased import taxes on rice and wheat could reduce their import level below the projected 95,000 MT used in the cereal balance calculations.

IV. Household Food Security

A. Objective of the Analysis

The objective of the analysis of food security at the household level is to:

- identify *Arrondissement*s where the 'average' household is likely to be food insecure;
- describe the extent to which households in these *Arrondissement*s are food insecure (see FEWS Categories of Food Insecurity box);
- evaluate the impact of potential shocks to food security in the current consumption period; and
- provide a basis for determining where concerted monitoring and possible interventions, including emergency food aid, may be needed.

FEWS Categories of Food Insecurity

In Current Vulnerability Assessments, FEWS classifies areas or specific socio-economic groups within areas as food secure or food insecure. In food-secure areas, an average household can maintain normal seasonal consumption patterns during the given consumption period using income derived from strategies that do not compromise future food security. In food-insecure areas, this is not the case.

To assist decision-makers in prioritizing emergency food allocations within and between countries, FEWS classifies food-insecure populations using the following operational definitions:

- Moderately food-insecure populations can meet their consumption needs during the given consumption period only by intensifying their normal coping strategies. These households are vulnerable to any subsequent shock, either in the given or subsequent consumption period.
- Highly food-insecure populations will not be able to meet their consumption needs during the given consumption period. They will be forced to reduce consumption and dispose of their productive assets, thereby undermining their future food security.
- Extremely food-insecure populations are now, or will soon be, unable to meet their consumption needs. They have already exhausted their strategies for acquiring food and are currently destitute.

Although the CVA assigns a food security status to each socio-economic group at the administrative level that constitutes the unit of analysis, it cannot quantify the number of food-insecure people. Rather, the CVA applies a food security classification to an "average" member of the area or group, the entire population of which can be counted. The larger the area and the more heterogeneous the group, the more likely it is that food security levels will vary among households within the group. Detailed food needs assessments are required to identify the precise numbers of affected people and appropriate interventions.

B. Conceptual Approach

FEWS defines food security as the condition in which a population has physical, social and economic access to sufficient safe and nutritious food over a given period to meet dietary needs and preferences for an active life (see Key Terms box). Embodied in this definition is the important concept that food security is more than self sufficiency in food. Even if adequate food supplies are available, a household access to that food depends on its income-earning strategies, assets and coping ability. Thus a population's food security goes beyond aggregate food availability to include an assessment of how much food people can access directly through their own production or indirectly through market and other transactions. A population's food security also depends on its ability to properly utilize food. Individual health and nutritional conditions and as well as food-handling and preparation practices determine whether available, accessible food can provide nutritional value to the individuals consuming it. Using quantitative and qualitative information, FEWS pulls together information on each of these three pillars of food security – availability, access and utilization – to determine whether households will be able to meet their consumption requirements in a given period.

C. Methodology

1. Analytical Parameters

a. Time period

This CVA considers the ability of the populations to meet their food needs between November 1,1999 and October 30, 2000.

b. Level of analysis

The CVA analysis is founded on a model of household income or, more specifically, of strategies that households use to acquire food. Although the conceptual framework is based on the household, FEWS' CVA in Niger uses the *Arrondissement*, i.e. the third-level administrative unit, as the unit for analysis. This is done for two reasons: data at the *Arrondissement* level are available, unlike household data; and emergency responses to food insecurity or mitigation efforts focus on administrative units rather than households. In taking the *Arrondissement* as the unit of analysis, CVA conclusions apply to an 'average' household in the *Arrondissement* but do not necessarily hold for the poorest and richest households within this unit.

c. Socio-economic groups

This CVA considers current food access of (a) farmers and agropastoralists, (b) pastoralists and (c) urban populations (appendix C). This CVA considers current food access of urban population with less rigour than the other populations due to lack of data on employment and income.

2. General Approach to Assessing Household Food access at the *Arrondissement* Level for Each Socio-economic Group

a. Farmers and agropastoralists

Farmers and agropastoralists obtain most of their food from rainfed agriculture. They also directly obtain food from livestock production and wild food gathering. Indirect sources of food include: the sale of livestock, cash crops (particularly cowpeas), remittances from outmigrating family members, off-season market gardening, firewood collection and charcoal production, and artisanal activities such as mat and jewelry making.

Crop and pasture production in the current year largely determine the ability of the households to meet their food needs. If production of crops and pasture is poor in the current year, the extent to which populations can cope with the situation depends on:

- whether over the last few years they have had good or poor crop and pasture production
- the degree to which populations must rely on indirect access (because of insufficient own-production of cereals)
- the extent to which prices for cereals rise seasonally as they become scarcer (when the poorest and least flexible tend to make most of their purchases)
- the ability to fill a cereal shortfall through sales of cash crops and livestock
- the availability of income from sources outside agro-pastoral production.

Therefore, the evidence assembled to determine food security levels at the *Arrondissement* level covers (Analysis Tables in Appendix D, E, and F):

- **a listing of food-security status for each of the two consumption years immediately prior 1999/2000**. Past food security status encapsulates a variety of indicators for each year and gives a single overall measure of food-security conditions in these years.

- **cereal needs met through production in 1999/2000 and on average**. Some areas chronically lack self-sufficiency in cereals but find ways to accommodate the predictable production deficit. A production deficit for them in 1999/2000 need not therefore cause concern. What is more important is the proportion of mean self-sufficiency attained in 1999/2000. For this reason, we also compare this year's level to average.

- **stocks carried over from 1998/99 to 1999/2000**. We add stocks left over from previous years' cereal harvests to current cereal production to ascertain the total cereal availability. The Ministry of Rural Development estimates stock levels through a sample survey each September.

- **the projected rise in millet prices from the immediate post-harvest period (October-December) in 1999 to the 2000 hungry season (April-August) and a comparison of this rise to the average over the past five years**.[6] Poorer farmers and agropastoralists tend to sell some of their crop at harvest to cover debts and finance purchases. This leaves many of them with a shortfall later in the season, at which point they buy millet in the market, but at higher prices than those at which they sold. Therefore we estimate the percentage price rise between the harvest/post-harvest season and the hungry period in 1999/2000 to see to what extent such populations lose through this combination of transactions. The estimated price rise is compared to the mean price rise over this period in recent years.

- **cowpea revenue used to purchase millet**. Farmers and agropastoralists grow cash crops in most parts of Niger. The most important is cowpeas. On average, they consume no more than a quarter of their crop, with most of the rest sold and exported to Nigeria. However, traditionally, only a small proportion of the revenue from the sales of this crop is dedicated to the purchase of cereals and thus to enhanced food security. Instead, it tends to pay for investments (in livestock and real estate) and in social infrastructure (particularly weddings). In estimating the volume of millet that could be purchased through cowpea sales, the analysis takes into account three factors: (1) the extent of any cereals deficit, (2) the volume of cowpeas produced, and (3) cowpea-to-millet terms of trade.[7]

- **sustainable offtake from livestock herds and livestock-to-cereal terms of trade**. Livestock represents savings for agropastoralists that they can sell to buy cereals if they need to. For *Arrondissement*s where production and stocks of millet, combined with revenue from cowpea sales used for millet purchases, do not meet cereal consumption needs, the analysis allocates revenue from livestock sales (at projected terms of trade for the 2000 hungry season[8]), up to the sustainable offtake of the herd, to purchase cereals. In some cases, this requires sales of only part of the sustainable yield; in others sale of the entire sustainable yield still leaves a cereal deficit.

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[6] The percentage seasonal increase in 1999/2000 millet prices is estimated by taking the average seasonal increase for similar consumption years following good rains: 1991/92, 1994/95 and 1998/99. These years were chosen for Niger as a whole. A more sophisticated methodology would select comparable years *Arrondissement* by *Arrondissement*.

[7] The volume of cowpeas, x (MT), sold to buy millet is calculated as follows (for each *Arrondissement*):
x = cowpea production (MT) * % cereal needs not met. The volume of millet, y (MT), that can be purchased with this volume of cowpeas is calculated as follows:
y = x (MT) * terms of trade of cowpeas for millet (MT of millet per MT of cowpeas).

[8] The analysis assumes that agropastoralists hold their livestock till last and that, on average, sell them during the hungry season to buy millet, if this is necessary. The 1999/2000 hungry-season terms of trade are estimated, as for other price parameters for the hungry season, by taking the average decrease for similar consumption years following good rains: 1991/92, 1994/95 and 1998/99, and applying that to the 1999 harvest/post-harvest period (October – December) terms of trade.

- **other sources of income***.* Analysis of income from livestock and cash crops shows the ability of the population to meet production shortfalls indirectly. Sources of income from outside farming and livestock rearing also contribute to household income. The results of recent household livelihood studies in several Nigerien departments (Appendix B) provide some insights about the contribution of other sources of income. However, given the quite different levels of "other sources of revenue" between apparently quite similar zones in different departments the information is not directly used to infer a contribution from other sources of income.

b. Pastoralists

Livestock provides pastoralists with food directly through milk and meat and indirectly through sales of livestock and milk. In addition, pastoralist households derive access to food through non-pastoral income.

Pastoralists acquire food by milking cattle, camels and goats. To a much lesser extent they obtain meat from these species and from sheep. Uncertainty about herd sizes, animal production parameters and socio-cultural practices limits the accuracy of estimates of the contribution of milk to pastoral diets. Herd growth and milk production vary with the availability of forage for the animals. Forage includes pasture from the range, leaves on bushes and trees, and agricultural by-products.[9] Production of forage depends largely on rainfall. The analysis considers the animal:pasture balance to determine if the rains brought about enough pasture to feed the herd in each department from the end of the 1999 rainy season until the production of the first significant grass of the 2000 rainy season[10]. A shortfall would (a) require outmigration (b) lower milk production and (c) lower the return on livestock as an investment and thus its price.

[9] Cattle, sheep, horses and donkeys mostly graze; camels mostly browse on trees; on average, goats browse on bushes for 60 percent of the energy content of their food and graze for the rest.

[10] Niger's Direction de la Production Animale performs an annual animal:forage balance at the start of the consumption year. For the pastoral zone in each department, it estimates the production of natural pasture from of analysis of NDVI satellite images calibrated using groundtruthing data. For the agricultural zone in each, it estimates the contribution from stalks of millet and sorghum and from cowpea shaws. It converts both into the quantity of nutritional energy available to animals for the assumed 270-day dry season. Then it compares the available nutritional energy to the total animal biomass consuming it to establish whether there exists a surplus or deficit. In a refinement introduced for this study, the animal biomass eliminates camels and 40 percent of goats, which are assumed to derive their nutritional energy from trees and bushes, respectively. Further methodological refinements may soon allow this analysis on an *Arrondissement* level, taking account of pastoral areas in the agricultural zone and agricultural areas in the pastoral zone. In addition, proposed livestock census should provide more accurate numbers of animals.

Pastoralists also derive income from sales of animals and, to a lesser extent, dairy products. They use these to finance purchases of other goods, particularly millet, their staple food. Therefore, the relative prices of livestock and millet play an important role in their access to food that they do not directly produce themselves.

Traditional pastoralists sell their livestock as the need for goods arises. Therefore, once the rainy season has begun and grass begins to become available for livestock, milk yields rise, their need for millet decreases and they sell fewer animals. The lower supply of livestock to the market tends to raise prices for those that are sold, although millet prices also rise at this time. In contrast, after the rains stop, pasture becomes increasingly scarce and milk production falls. Pastoralists increasingly buy millet which, after an immediate post-harvest price drop, generally increases in price throughout the dry season. The terms of trade of livestock for millet fall from the harvest/post-harvest period (October – December) to the hungry season (April – August), i.e. over this period the purchasing power of livestock drops in millet terms. Mobile traditional pastoralists without fixed storage facilities and unable to store large quantities of millet at harvest when prices are low find themselves having to sell more animals during the hungry season.

Therefore, this study uses projected hungry-season livestock-to-cereal terms of trade to calculate the quantity of cereals pastoralists could purchase from sustainable livestock offtake. The 1999/2000 hungry-season terms of trade are estimated, as for other price parameters for the hungry season, by taking the average seasonal decrease for similar consumption years following good rains: 1991/92, 1994/95 and 1998/99, and applying that to the 1999 harvest/post-harvest period (October – December) terms of trade. The actual price data used is *Arrondissement*-level price data for bulls, rams and male goats, used as proxies for cattle, sheep and goats, respectively.

Livestock offtake for cattle, sheep, and goats is estimated from livestock population data by *Arrondissement* and species using sustainable off-take rates for a “good” year, as estimated by agro-ecological zone by the Directorate of Animal Production. These rates are what herders and agropastoralists can remove without depleting their animal capital.

In addition to measuring pastoralist purchasing power, this study also takes stock of the relative magnitude of the projected fall in the seasonal terms of trade compared with the seasonal fall over the 1994/95 – 1998/99 period. Since pastoralists’ terms of trade tend to fall every year during this period, looking at how this year’s projected decrease compares to the average decrease over recent years is used as an additional indicator of pastoralist well-being.

Access to cereals from livestock sales constitutes the major part of pastoralist’s income. However they also derive income from milk sales, which this study does

not attempt to evaluate because, this year, pastoralists in all *Arrondissement*s appear food-secure without taking this element into account.

Like farmers and agropastoralists, pastoralists derive additional income from non-pastoral activities, such as commerce, craft-work and wage labour. Some of the recent household livelihood studies cover pastoral populations. We assume levels to be similar to those in other years, so that their contribution to household income and cereal purchases does not vary. However this analysis does not attempt to quantify these elements of income

c. Urban populations

A 1992 study on Nigerien urban poverty[11] enumerates the "poor" and "very poor" based on estimates of all income sources available to urban populations. The study found Niger's urban poverty levels exceeding 40 percent in Niamey and 60 percent in other major cities. Those designated "very poor" exceeded 20 percent in Niamey and elsewhere accounted for almost double that proportion of the urban population (table 4).

Table 4: Estimates of urban poverty in 1992

	Percentage of the urban population	
Urban area	"poor"	"very poor"
Niamey	41	21
Other principal towns (Agadez, Diffa, Dosso, Maradi, Tahoua, and Zinder)	64	36
Secondary towns	62	38

Source: République du Niger, Ministère des Finances et du Plan, Direction Générale du Plan, Direction de la Statistique et des Comptes Nationaux, Service des Enquêtes, Projet PADEM **1992**. *Séminaire national sur: les dépenses, la consommation et l'approche de la pauvreté en milieu urbain, Kollo, 11–13 mai 1992*

The proportions of the poor and urban poor will not have fallen since 1992. Indeed, they may well have risen.[12] However, we have no information to update these percentages and therefore apply them to the 1999 populations of Niger's main urban centers.

[11] République du Niger, Ministère des Finances et du Plan, Direction Générale du Plan, Direction de la Statistique et des Comptes Nationaux, Service des Enquêtes, Projet PADEM **1992**. *Séminaire national sur: les dépenses, la consommation et l'approche de la pauvreté en milieu urbain, Kollo, 11–13 mai 1992* Niamey: May

[12] The 1992 report defines "poor" in terms of an annual (pre-devaluation) income of less than 75,000 CFA francs per person and "very poor" in terms of an annual income of less than 50,000 CFA francs person.

D. Current Food-Security Status by Socio-economic Group

1. Farmers and Agropastoralists

This year's excellent cereal harvest, an above-average cowpea harvest and cowpea-to-millet terms of trade, and favorable conditions for off-season gardening and irrigated and recessional cultivation have left most farmers and agropastoralists food secure.

However, farmers and agropastoralists in the *Arrondissement*s of Arlit and Tchirozerine (Agadez Department), Abalak and Tchintabaraden (Tahoua Department), Tillabéry (Tillabéry Department), and N'Guigimi (Diffa Department) are moderately food insecure (table 5 and figure 4).

a. Diffa Department

After five consecutive years of poor production (1993/94 – 1997/98), the *Arrondissement*s of Diffa and Maïné Soroa (Diffa Department) have registered above-average millet and sorghum production for the second year in a row, though N'Guigmi registered 7 percent less than average. Despite above-average production for the department as a whole, all three *Arrondissement*s failed to meet their consumption needs from their own production: by 5 percent in Maïné Soroa, by 8 percent in Diffa, and 72 percent in N'Guigmi. Adding carryover stocks from 1998/99, estimated millet purchases with 1999/2000 cowpea revenue and sales of the sustainable offtake from their livestock herds to finance the purchase of millet, N'Guigmi *Arrondissement* still does not meet its consumption requirements. However, this shortfall does not take into consideration the caloric benefit from consumption of milk from livestock held by non-herders within the *Arrondissement*, estimated at approximately at 5.2 (Diffa), 7.2 (Maïné Soroa) and 3.4 (N'Guigmi) million litres.[13]

According to the CARE-Niger food-security study for Diffa (1999), revenue from sources other than agriculture and livestock rearing varies between zones. For example, income from production of irrigated peppers, a major cash crop in some parts of Diffa and Maïné Soroa, might easily cover the consumption shortfall for some parts of those *Arrondissement*s, though such additional income in other parts of the department appears insufficient to cover the estimated cereal shortfall.

In addition, the department experiences civil insecurity. Inter-community conflict over control of pasture, water and land – particularly in oases that produce natron and dates – coupled with theft of livestock, often renders inaccessible pasture and areas of irrigated production in the dried-up bed of Lake Chad. As a result of

[13] The figures given for milk production assume: 67 percent of the ruminant herd are adult females, each adult female is in lactation for 90 days annually and, during lactation, each female gives for human consumption: 1.2 liters (camels) and1.1 liters (cattle). We assume that farmers and agropastoralists milk neither sheep nor goats.

N'Guigmi's inability meet the cereal needs of its sedentary rural population, even after consideration of a range of indirect sources of access, and of the civil insecurity it endures, the *Arrondissement* is considered moderately food insecure.

b. Agadez Department[14]

Sedentarized herders who depend heavily upon small-scale, irrigated gardening, livestock production and other sources of income – rather than rainfed cereal production – comprise most of the farmers and agropastoralists in Agadez Department. Taking into consideration only rainfed production of mainly maize and wheat, Tchirozerine *Arrondissement* meets only 4 percent of its consumption requirement while Arlit meets none (a normal occurrence). Adding sales of the sustainable offtake from their livestock herds to finance the purchase of cereal and other food products, Tchirozerine and Arlit still do not meet their cereal consumption requirements. This estimated shortfall takes into consideration neither income from gardening nor income from trade with Libya and Algeria – both of which remain unquantified. Nor does it consider the caloric benefit from consumption of milk, estimated at approximately at 700,000 (Tchirozerine) and 100,000 (Arlit) litres over the course of the 1999/2000 consumption year.

Field reports suggest a reduction in gardening (which is a primary source of income), due to the high cost of operating pumps, a lack of donor projects to subsidize these and other costs, and transportation problems caused by civil insecurity, stolen trucks and stolen funds for truck maintenance. Reports also indicate that tourism, which had stopped during civil strife in 1990, has resumed, albeit on a smaller scale, and that trade with Libya has reached a historically high level, with trucks transporting mainly cigarettes and livestock to Libya. In the other direction, the trucks bring food and other supplies. However, insecurity continues to require that transport of passengers and goods take place mainly via military convoy, thus increasing the cost of cereal and other food products. A lack of financial resources has compromised the government's commitment (as part of the peace accord with rebels in 1995) to improve food security, public health, education and agriculture and to integrate ex-rebels into the civil service. Many ex-rebels do not have jobs. Due to limited access to food via direct and indirect means, as well as unemployment and civil insecurity, the *Arrondissement*s of Arlit and Tchirozerine are considered moderately food insecure.

c. Tchintabaraden *Arrondissement* (Tahoua Department)

Tchintabaraden *Arrondissement* is chronically deficit in cereal production, on average meeting 39 percent of its consumption needs from its own production. In 1999/2000, it will meet only 27 percent. Adding estimated millet purchase with 1999/2000 cowpea revenue and sales of the sustainable offtake from their livestock herds, Tchintabaraden still falls short of meeting its consumption

[14] We do not have enough information to estimate the food-security status of Bilma *Arrondissement*.

requirement. However, this ignores an estimated milk production from the herds of non-pastoral households of 12.3 million litres.

The security situation remains tense increasing the price of transport and thus of goods and cereals. Due to civil insecurity, combined with insufficient income-generating activities to cover the net cereal shortfall, the *Arrondissement* of Tchintabaraden is considered moderately food insecure.

d. Tillabéry and Ouallam *Arrondissement*s (Tillabéry Department)
On average, Tillabéry *Arrondissement* meets 62 percent of its cereal consumption needs but can meet only 47 percent through its 1999/2000 production. Adding carryover stocks from 1998/99, estimated millet purchase with 1999/2000 cowpea revenue and sales of the sustainable offtake from their livestock herds to finance the purchase of millet, Tillabéry *Arrondissement* still fails to meet its consumption requirements. Ouallam is a structurally deficit *Arrondissement* and has had large production shortfalls for all but one year (1998) in the last five years. On average, Ouallam *Arrondissement* meets 56 percent of its cereal consumption needs. While this year it can meet 63 percent, Ouallam *Arrondissement* still fails to meet its consumption requirements after taking into account additional access from carryover stocks from 1998/99, estimated millet purchase with 1999/2000 cowpea revenue and sales of the sustainable offtake from their livestock herds to finance the purchase of millet.

Both Tillabéry and Ouallam are relatively close to Niamey, but in the case of Ouallam, the roads are very bad, making it very difficult to transport goods to and from the *Arrondissement*. This raises food and other prices and limits alternative income generating activities. While the Niger River passes through Tillabéry *Arrondissement*, the possibility of producing irrigated crops has decreased over the years due to high cost of motor pumps and fertilizer.

Given insufficient income generating activities to cover the estimated gap between food access and food needs, but taking into account in a qualitative sense the fact that households have milk and livestock offtake income from livestock, the *Arrondissement*s of Tillabéry and Ouallam are considered moderately food insecure.

2. Pastoralists

This year, in all seven departments, availability of range grasses and agricultural by-products exceeds that needed to support current livestock levels. Well-filled seasonal ponds will allow maximum use of available pasture. Niamey Commune, with significant peri-urban livestock rearing, has a significant deficit but this is normal: pastoralists move their herds to nearby *Arrondissement*s in Tillabéry Department and traders bring in agricultural by-products to meet the needs of animals remaining within the boundaries of the commune.

The terms of trade of livestock for millet currently lie at above the latest five-year mean in all *Arrondissement*s and the projected change in these terms of trade from the harvest/post-harvest season to the hungry period should be more favorable in almost all. Therefore, we consider food secure pastoral households in all departments.

3. Urban Residents

Niger's economic decline in the 1990s has generally affected urban populations more than their rural counterparts, especially since the devaluation of the CFA franc in January 1994. The devaluation made more expensive the imported goods that Nigerien urban populations disproportionately consume. Although it simultaneously made more competitive Nigerien exports, urban Nigeriens do not generally work for companies that export goods or services. So their cost of living rose more quickly than their incomes. This began to eat into their accumulated reserves of wealth: vehicles, household appliances and jewelry. By 1995, the structural change brought about by the devaluation reached a new equilibrium that left them with an ongoing lower standard of living.

Niamey, the capital, is a city in which the government plays an important role. At least half the nation's 40,000 civil servants and military personnel live there and their salaries typically support large extended-families. Thus, perhaps up to half the city's population of 600,000 depends to some extent on public-sector salaries. Starting in the early 1990, the government periodically found itself unable to pay the monthly salaries of its civil servants. The departure of USAID and the French *Co-opération* following the coups d'état of 1996 and 1999, respectively, compounded the government's existing problems in raising tax revenue, and led to its increasing inability to meet its obligations. By late 1999, most civil servants had accumulated over a year's backlog of unpaid salaries, with about half the arrears dating from the calendar year 1999.

On the streets of Niamey symptoms of poverty exist: camels and donkey carts that play an increasingly important role in delivery of goods, a stagnant number of second-hand vehicles, and almost no new vehicles; and more beggars. Unemployment and under-employment among non-civil servants have undoubtedly risen, particularly among the lower strata that derive their income from petty commerce, occasional wage labour and artisanal activities. Vulnerability to food insecurity and current food insecurity have risen.

Niamey accounts for about half of Niger's urban population. Maradi and Zinder (each with over 100,000 inhabitants) and Tahoua and Agadez (each with over 50,000 inhabitants) contain most of the rest. All are administrative centers for their respective departments but in none does income from government salaries play as important a role as in Niamey. Maradi's economy depends even less on the government sector than the others because it is the *entrepôt* through which passes a large proportion of Niger's imports from Nigeria. The profits from trade

will have dropped as the Nigerien economy flags but probably less than the inhabitants' income from government. However, the distribution of these profits is far from even, and the number of food-insecure in the city has undoubtedly risen over the course of the last decade. Their number in three other major urban centers – without the same level of income from trade – should have risen faster. All four cities benefit from a higher level of accessible farmland per capita than Niamey – simply because they are smaller – and, to some extent, this provides welcome additional income to these less urbanized populations. However, no numbers allow a quantitative comparison of food insecurity between Niamey and the other urban major centers.

Thus, an erosion of wealth, coupled with the collapse of income from government salaries, has decreased urban food security. At the same time, two successive good rainfed harvests have boosted food security levels in the agricultural and pastoral sectors. In this light, it would not be surprising if some urban poor with strong rural roots have left the city for the countryside. At a minimum, we would expect a noticeable reduction of the rate of migration from rural to urban areas within Niger.

Using the designations from the 1992 urban poverty study, this CVA equates "very poor" to "moderately food insecure". Applying the percentages of table 4 to current urban populations we arrive at the following numbers of moderately food-insecure people: Niamey (127,000), Zinder (45,000), Maradi (43,000), Tahoua (22,000), Agadez (18,000), Dosso (8,000), Diffa (3,000). We consider that the populations of most "secondary towns" have significant access to incomes from agriculture and herding and thus have benefited at least partially from 1999's good production of rainfed crops and pasture. They are considered food secure.

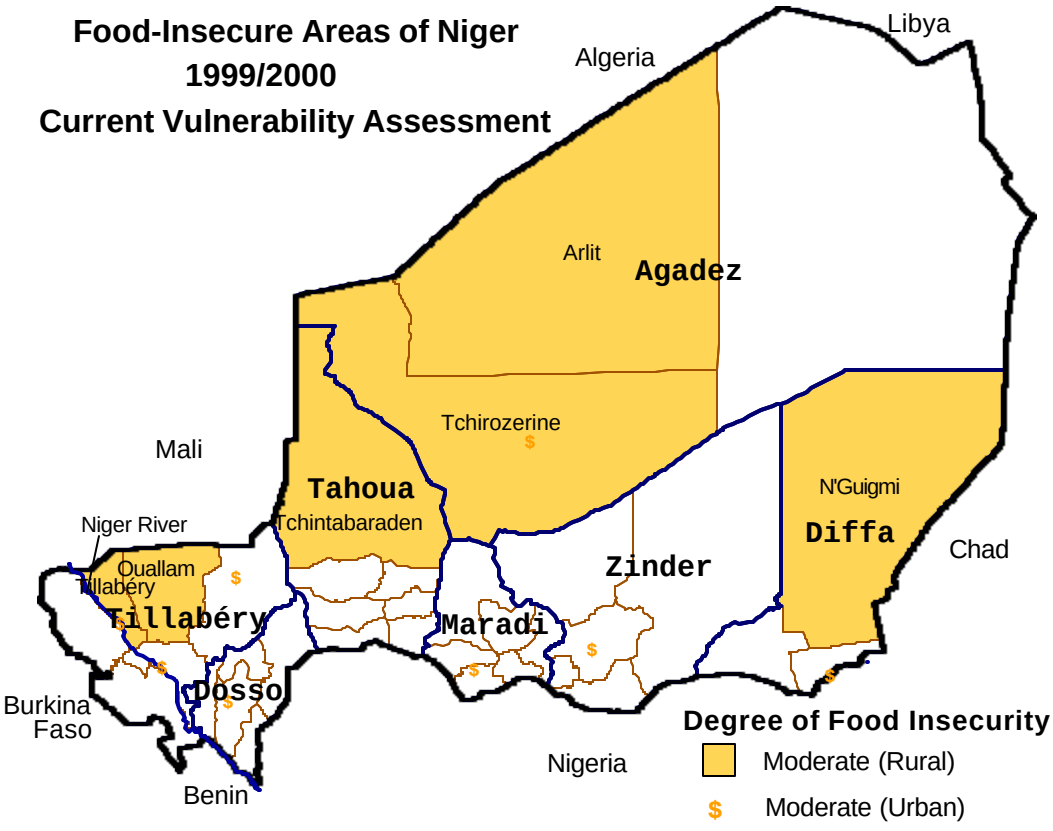

Figure 4
Source: FEWS

Table 5: Populations in Moderately Food Insecure Areas of Niger in 1999/2000

Department	*Arrondissement* or city	Socioeconomic group		Total ('000)
		Farmers and agropastoralists ('000)	Urban ('000)	
Agadez	Arlit	35		**35**
	Tchirozerine	71		**71**
	Agadez City		29	**29**
Diffa	N'Guigmi	5	5	**10**
	Diffa Town		6	**6**
Dosso	Dosso Town		13	**13**
Maradi	Maradi City		58	**58**
Niamey	Niamey City		136	**136**
Tillabéry	Ouallam	243		**243**
	Tillabéry	191	4	**195**
Tahoua	Tchintabaraden & Abalak	58	3	**61**
	Tahoua Town		24	**24**
Zinder	ZinderCity		61	**61**
TOTAL	NIGER	**603**	**339**	**942**

Source: FEWS/Niger, March 2000
Note: Level of analysis: *Arrondissement* (3rd order administrative level).

E. Caveats and Uncertainties

Although the CVA assigns a food security status to each socio-economic group at the administrative level that constitutes the unit of analysis, it cannot quantify the number of food-insecure people. Rather, the CVA applies a food security classification to an ”average” member of the area or group, the entire population of which can be counted. The larger the area and the more heterogeneous the group, the more likely it is that food security levels will vary among households within the group. Detailed food needs assessments are required to identify the precise numbers of affected people and appropriate interventions.

V. Conclusions and Actions

A. Summary of Food Insecurity

Approximately 600,000 farmers and agropastoralists in the Departments of Agadez, Diffa Tahoua and Tillabéry and 339,000 urban residents in all departments are considered moderately food insecure.

B. Actions Required

By definition, moderately food insecure populations do not need emergency food assistance. But food-for-work programs to rehabilitate wells, plant trees and attenuate desertification will help rural populations that have exhausted their resources over the last few years from further depletion. The recent improvement in relations between Niger and major donors following the democratic elections in November 1999 are already bringing a steady flow in development assistance and budgetary support. The Government has promised to pay civil servant salary arrears, which should bring relief for urban populations.

IV. Appendices

Appendix A: Ex-post cereal balance for 1998/99

Appendix B: Share of Income from Major Income Sources by Department and Agro-ecological Zone

Appendix C: Definitions of Socio-economic Groups

Appendix D: Farmer/Agropastoralist Food Access Analysis Table (part 1)

E. Farmer/Agropastoralist Food Access and Current Food Security Status Table (part 2)

Appendix F: Pastoralist Food Access and Current Food Security Status Analysis Table

Appendix A: Ex-post cereal balance for 1998/99

		Rice	Wheat	Coarse Cereals	Total
Population (30th April 1999)					9,798,195
I. DOMESTIC SUPPLY		40,967	11,540	2,492,980	2,545,487
	Production (MT)				
	gross (MT)	59,026	12,491	2,907,448	2,978,965
	net after losses, dehulling(rice) (MT)	38,367	10,617	2,471,331	2,520,315
	Initial stocks (MT)	2,600	923	21,649	25,172
	on farm (MT)	0	0	0	0
	other (MT)	2,600	923	21,649	25,172
II. REQUIREMENTS		103,658	25,993	2,425,149	2,554,800
	Consumption norms (kg/capita/year)				
	Total human consumption (MT)	98,766	24,104	2,351,353	2,474,223
	Final stocks (MT)	4,892	1,889	73,796	80,577
	on farm (MT)	4,892	1,889	53,040	59,821
	other (MT)	0	0	20,756	20,756
III. SURPLUS (+) OR DEFICIT (-) (MT)		-62,691	-14,453	67,831	-9,313
IV. TRADE BALANCE (MT)		91,348	34,502	157,478	283,328
	commercial imports (MT)	80,348	34,502	148,834	263,684
	aid (MT)	11000	0	8,644	19,644
	exports (MT)	0	0	0	0
V. NET SURPLUS (+) OR DEFICIT(-) (MT)		28,657	20,049	225309	274,015
VI. APPARENT AVAILABILITY/CAPITA (kg)		14	5	271	289

Notes:

1. Cereal requirements estimated based on 200 kg/capita/year for pastoral and urban populations (1,963,915) and 250 kg/capita/year for the sedentary rural population (7,834,280).
2. "Coarse cereals" include millet, sorghum and maize.
3. " - " indicates "not known" or "not defined".
4. "Apparent availability" = domestic supply – final stocks + net imports.

Appendix B:

Share of Income from Major Income Sources
by Department and Agro-ecological Zone

Department & agro-ecological zone unweighted mean house-hold income (CFA francs)		Income by activity/source (percentage)				
		Agriculture	Livestock	Income generating activities	Other	Total
DIFFA	570,821					
	Basin	44	19	25	12	100
	Koumadougou	65	8	24	4	100
	Lake Chad	15	51	15	19	100
	Agropastoral	25	32	32	11	100
	Pastoral	1	75	6	18	100
MARADI	377,767					
	South 1	41	41	18		100
	South 2	66	16	17		100
	Center	62	19	19		100
	Central north	58	26	17		100
	North	52	32	16		100
TAHOUA	471,441					
	Pastoral	1	79	21		100
	Transition	48	20	22	10	100
	Plateaux & valleys	48	22	24	6	100
	West	53	24	23		100
	Groundnut	49	27		24	100
TILLABERY	821,737					
	Pastoral	44	48	8		100
	Intermediate	43	51	6		100
	Agricultural	26	63	11		100
	River	62	28	9	1	100
	Dallol	42	58	0		100
	Tapoa	39	48	12	1	100
ZINDER	431,811					
	Extreme south	6	17	35	43	100
	Center	6	15	33	46	100
	Central north	3	31	27	39	100

Source: various CARE-Niger reports, 1997 - 1999

Appendix C: Definitions of Socio-economic Groups

1. Farmers and agropastoralists

Farmers and agropastoralists obtain most of their income from crop agriculture. Both may keep livestock and agropastoralists may derive a significant minority of their income from it. They comprise 80 percent of the total population in Niger and are concentrated in the *Arrondissement*s of southern Niger – particularly along the border with Nigeria and along the banks of the River Niger – where annual rainfall levels generally vary between 400 mm and 800 mm.

Their major crops are cereals – millet and sorghum – mostly for their own consumption, but they derive important secondary contributions from livestock, cash crops (particularly cowpeas), remittances from outmigrating family members, off-season market gardening, firewood collection and charcoal production, and artisanal activities such as mat and jewelry making. Their ability to meet their food needs is highly correlated with local harvest levels, prices of the cereals that they buy and sell, and of the cowpeas and livestock that they sell, and – for remittances -- economic conditions in Nigeria and other coastal countries.

2. Pastoralists

Pastoralists derive most of their income from sales of animals and dairy products. Income determinants are herd size and composition, whether they own the animals they herd, herd health, and pasture conditions. They also obtain additional revenue from many of the activities mentioned above for farmers and agropastoralists. They are in the majority in N'Guigmi *Arrondissement* (Diffa Department) and form at least 25 percent of the population in Tchirozerine *Arrondissement* (Agadez Department) and Tchintabaraden *Arrondissement* (Tahoua Department). Within the agricultural zone, pastoralists compete with farmers and agropastoralists – who also keep livestock – for the use of pasture on non-agricultural land, forest reserves and fallow land during the rainy season, and of stubble and agricultural residues during the dry season. Further north, the proportion of non-agricultural land increases as average rainfall drops and its variability increases.

Pure pastoralists are very mobile and can often herd their animals away from areas of poor pasture. This flexibility makes them less vulnerable to localized variations in rainfall than farmers. However, it also makes them less able to store cereals over time and gives them a risky, undiversified portfolio in case of generalized drought. They depend on the market for cereal purchases and their purchasing power fluctuates with changes in cereal prices as well as those of their livestock. Like farmers and agropastoralists, among the more food-insecure herders, many migrate within and outside Niger to find other work for part of the year. In addition, some indulge in trade, others in artisanal work.

A fuzzy dividing line separates agropastoralists and pastoralists (and also farmers and agropastoralists). All depend on rainfed production of crops and pasture. In successive years, variable rainfall can produce different numbers of each in a given *Arrondissement*. Thus this year's agropastoralist may become next year's pastoralist, and vice versa. In addition, rural households migrate to urban areas though, over the last two years, this flow may have been stemmed by a combination of urban economic stagnation and good rural rainfed production of cereals and pasture.

3. Urban Populations

Urban populations represent 16.2 percent of the total population. They derive their income from salaried jobs, commerce on various scales, occasional wage labor and artisanal activities. Over the last five years, they have faced stagnant wages and salaries, multi-month arrears in the payment of civil service salaries and high unemployment.

Niger's economic decline in the 1990s has generally affected urban populations more than their rural counterparts, especially since the devaluation of the CFA franc in January 1994. The devaluation made more expensive the imported goods that Nigerien urban populations disproportionately consume. Although it simultaneously made more competitive Nigerien exports, urban Nigeriens do not generally work for companies that export goods or services. So their cost of living rose more quickly than their incomes. This began to eat into their accumulated reserves of wealth: vehicles, household appliances and jewelry. By 1995, the structural change brought about by the devaluation reached a new equilibrium that left them with an ongoing lower standard of living.

Niamey accounts for about half of Niger's urban population. Maradi and Zinder (each with over 100,000 inhabitants) and Tahoua and Agadez (each with over 50,000 inhabitants) contain most of the rest. All are administrative centres for their respective departments but in none does income from government salaries play as important a role as in Niamey. Maradi's economy depends even less on the government sector than the others because it is the entrepôt through which passes a large proportion of Niger's imports from Nigeria. The profits from trade will have dropped as the Nigerien economy flags but probably less than the inhabitants' income from government. However, the distribution of these profits is far from even, and the number of food-insecure in the city has undoubtedly risen. Their number in three other urban major centres – without the same level of income from trade – should have risen faster. All four cities benefit from a higher level of accessible farmland per capita than Niamey – simply because they are smaller – and, to some extent, this provides welcome additional income to these less urbanized populations.

Appendix D: Farmer Food Access Analysis Table

A. *Arrondissement*	B. Agricultural population (1000s)	C. Surplus of 1999/ 2000 prod-uction over con-sumption of millet (tonnes)	D. % needs met	E. % needs unmet	F. Carry-over stocks from 1998/99 (tonnes)	G. Short-fall after including carry-over stocks (tonnes)	H. Millet pur-chased with cowpea revenue (tonnes)	I. Shortfall remaining after using cowpea revenue (tonnes)	J. Con-tribution from livestock (tonnes)	K. Shortfall remaining after using revenue from sales of cowpeas and livestock (tonnes)	L. Average terms of trade of millet for cowpeas , 4th quarter 1999	M. 1999/ 2000 cowpea pro-duction estimate	N. Sus-tainable offtake from livestock herd (liveweight tonnes)
TCHIROZERINE	71	-28043	3	97%	0	28043	0	28043	891	27152	na	47	217
ARLIT	35	-23670	0	100%	0	23670	0	23670	706	22963			77
BILMA	9	-3190	0	100%	0	3190	0	3190	na	na	na		na
DIFFA	67	1087	106	0%	354	0	0	0	0	0	1.10	1675	1148
MAINE SOROA	78	-3669	84	16%	2139	1530	117	1413	1413	0	1.58	463	1871
NGUIGMI	5	-4469	34	66%	376	4093	0	4093	2645	1448	2.30		675
DOSSO	307	12463	116	0%	2509	0	0	0	0	0	1.71	7492	2881
BOBOYE	279	-21133	71	29%	4959	16174	6526	9648	9648	0	1.47	15290	5352
DOGONDOUTCHI	410	9539	109	0%	12881	0	0	0	0	0	1.67	37889	2051
GAYA	210	28113	149	0%	5000	0	0	0	0	0	2.18	6270	2130
LOGA	117	-6128	80	20%	382	5746	2377	3369	3369	0	1.85	6441	489
MADAROUNFA	264	36271	153	0%	26494	0	0	0	0	0	1.66	11254	7255
AGUIE	236	-6211	90	10%	3742	2469	1588	882	882	0	1.48	10534	4733
DAKORO	320	8079	109	0%	14516	0	0	0	0	0	1.46	17432	2764
GUIDAN ROUMDJI	286	-32276	56	44%	12472	19804	6344	13460	13460	0	1.68	8679	2709
MAYAHI	314	-1532	98	2%	6425	0	0	0	0	0	1.61	18679	2505
TESSAOUA	274	20673	128	0%	6351	0	0	0	0	0	1.51	29386	3001
KOLLO	305	1599	102	0%	11824	0	0	0	0	0	2.39	1690	6032
FILINGUE	359	-8516	91	9%	9394	0	0	0	0	0	1.56	10196	2210
OUALLAM	243	-23541	63	37%	8932	14609	554	14055	7940	6115	1.18	1283	1789

A. *Arrondissement*	B. Agricultural population (1000s)	C. Surplus of 1999/ 2000 production over consumption of millet (tonnes)	D. % needs met	E. % needs unmet	F. Carry-over stocks from 1998/99 (tonnes)	G. Short-fall after including carry-over stocks (tonnes)	H. Millet purchased with cowpea revenue (tonnes)	I. Shortfall remaining after using cowpea revenue (tonnes)	J. Contribution from livestock (tonnes)	K. Shortfall remaining after using revenue from sales of cowpeas and livestock (tonnes)	L. Average terms of trade of millet for cowpeas, 4th quarter 1999	M. 1999/ 2000 cowpea production estimate	N. Sustainable offtake from livestock herd (liveweight tonnes)
SAY	210	42190	177	0%	9279	0	0	0	0	0	2.11	8058	6460
TERA	356	9577	110	0%	9031	0	0	0	0	0	1.92	1620	3403
TILLABERY	191	-26565	47	53%	2654	23911	432	23479	12682	10797	1.82	449	2293
TAHOUA	240	-21021	66	34%	10600	10421	3515	6906	6906	0	1.91	5375	3058
BKONNI	288	36339	145	0%	5030	0	0	0	0	0	1.68	16223	9042
BOUZA	225	1643	103	0%	8546	0	0	0	0	0	1.12	18514	2815
ILLELA	196	-14792	71	29%	1142	13650	1186	12464	12464	0	1.83	2247	2738
KEITA	208	-11671	79	21%	9606	2065	2065	0	0	0	1.46	9954	1507
MADAOUA	260	65290	195	0%	13550	0	0	0	0	0	1.54	47238	6230
TCHIN TABARADEN	58	-18202	27	73%	0	18202	227	17975	8512	9462	1.80	172	1882
MIRRIAH	550	16478	112	0%	18253	0	0	0	0	0	1.16	35362	9141
GOURE	179	42742	180	0%	14044	0	0	0	0	0	0.98	8328	4505
MAGARIA	457	26470	122	0%	12180	0	0	0	0	0	1.76	27582	8332
MATAMEYE	209	-9176	84	16%	1355	7821	2470	5351	5351	0	1.28	11737	3036
TANOUT	230	65794	202	0%	10039	0	0	0	0	0	1.32	37072	1307
Total		160540			254059			167998		77937		414631	115637

E. Farmer/Agropastoralist Food Access and Current Food Security Status Table

			Food Security Status			Direct Access				Indirect access: market availability and prices				
						Own Cereal Production			Stocks					
A. ADMIN2	B. *Arrondissement* (3rd-level Nigerien administrative unit)	C. Farmer/ agro-pastorlist population (1000s)	D. Current food security status 1999/ 2000	E. Food security status: 1998/99	F. Food security status 1997/98	G. Needs met through own cereal production 1999/2000	H. Needs met on average (1994/95 - 1998/99)	I. Needs met 1999/2000 vs average for 1994/95 - 1998/99 (% change)	J. On-farm carry-over stocks relative to average	K. Dependence on market purchases in 1999/2000 (govt. consn. figures)	L. Projected seasonal change in millet price	M. Projected hungry-season millet price relative to average	N. Projected seasonal change of terms of trade: cowpeas vs. millet	O. Cowpea production relative to average
AGADEZ	TCHIROZERINE	71		*	*	3%	3%	2%		97%	15%	-33%	13%	
AGADEZ	ARLIT	35		*	*	0%	0%	5%		100%	17%	-20%	-8%	
AGADEZ	BILMA	9		*	*	0%	0%	0%		100%				
DIFFA	DIFFA	67		*	*	106%	53%	35%	1024%	28%	18%	-21%	47%	-2%
DIFFA	MAINE SOROA	78		*	*	84%	57%	48%	310%	15%	37%	-8%	13%	-81%
DIFFA	NGUIGMI	5		*	*	34%	29%	-7%	38%	73%	1%	-28%	25%	
DOSSO	DOSSO	307	FS	FS	FS	116%	74%	58%	-24%	-17%	16%	-36%	11%	-35%
DOSSO	BOBOYE	279		FS	FS	71%	92%	-7%	11%	14%	24%	-27%	6%	36%
DOSSO	DOGONDOUTCHI	410	FS	FS	FS	109%	97%	9%	170%	-5%	18%	-28%	27%	27%
DOSSO	GAYA	210	FS	FS	FS	149%	99%	49%	57%	-47%	37%	-7%	15%	98%
DOSSO	LOGA	117		FS	FS	80%	75%	12%	-14%	16%	15%	-50%	42%	45%
MARADI	MADAROUNFA	264	FS	FS	FS	153%	112%	34%	379%	-50%	28%	-24%	16%	50%
MARADI	AGUIE	236		FS	FS	90%	117%	-19%	25%	6%	28%	-25%	30%	-25%
MARADI	DAKORO	320	FS	FS	FS	109%	129%	-17%	169%	-7%	17%	-37%	29%	19%
MARADI	GUIDAN ROUMDJI	286		FS	FS	56%	112%	-51%	30%	45%	35%	-17%	38%	32%
MARADI	MAYAHI	314	FS	FS	FS	98%	89%	13%	9%	-1%	25%	-30%	21%	27%
MARADI	TESSAOUA	274	FS	FS	FS	128%	126%	-4%	-4%	-21%	29%	-33%	30%	82%
TILLABERY	KOLLO	305	FS	FS	MFIS	102%	85%	21%	203%	-3%	53%	-4%	3%	-72%
TILLABERY	FILINGUE	359		FS	HFIS	91%	89%	11%	133%	1%	21%	-28%	47%	-26%
TILLABERY	OUALLAM	243		FS	HFIS	63%	56%	39%	614%	23%	27%	-15%	4%	-56%
TILLABERY	SAY	210	FS	FS	MFIS	177%	115%	36%	110%	-56%	10%		20%	97%
TILLABERY	TERA	356	FS	FS	MFIS	110%	81%	39%	274%	-13%	20%	2%	5%	-55%
TILLABERY	TILLABERY	191		FS	HFIS	47%	62%	-23%	57%	53%	11%	-42%	31%	-84%
TAHOUA	TAHOUA	240		FS	MFIS	66%	88%	-21%	789%	31%	18%	-25%	-8%	-24%
TAHOUA	BKONNI	288	FS	FS	FS	145%	120%	24%	-54%	-48%	29%	-15%	-10%	-44%
TAHOUA	BOUZA	225	FS	FS	MFIS	103%	95%	16%	2470%	-10%	30%	-28%	-1%	79%
TAHOUA	ILLELA	196		FS	MFIS	71%	89%	-8%	-74%	18%	30%	-36%	-2%	-65%
TAHOUA	KEITA	208		FS	FS	79%	86%	-17%	1273%	29%	38%	-20%	-6%	89%
TAHOUA	MADAOUA	260	FS	FS	FS	195%	128%	27%	126%	-63%	33%	-30%	1%	195%

			Food Security Status			Direct Access				Indirect access: market availability and prices				
						Own Cereal Production			Stocks					
A. ADMIN2	B. *Arrondissement* (3rd-level Nigerien administrative unit)	C. Farmer/ agro-pastorlist population (1000s)	D. Current food security status 1999/ 2000	E. Food security status: 1998/99	F. Food security status 1997/98	G. Needs met through own cereal production 1999/2000	H. Needs met on average (1994/95 - 1998/99)	I. Needs met 1999/2000 vs average for 1994/95 - 1998/99 (% change)	J. On-farm carry-over stocks relative to average	K. Dependence on market purchases in 1999/2000 (govt. consn. figures)	L. Projected seasonal change in millet price	M. Projected hungry-season millet price relative to average	N. Projected seasonal change of terms of trade: cowpeas vs. millet	O. Cowpea production relative to average
TAHOUA	TCHIN TABARADEN	58		MFIS	MFIS	27%	39%	-31%	-100%	73%	24%	-7%	-10%	-70%
ZINDER	MIRRIAH	550	FS	FS	FS	112%	101%	7%	173%	-8%	28%	-26%	46%	-31%
ZINDER	GOURE	179	FS	FS	MFIS	180%	103%	68%	499%	-74%	15%	-32%	15%	-60%
ZINDER	MAGARIA	457	FS	FS	FS	122%	85%	41%	159%	-20%	48%	-8%	10%	2%
ZINDER	MATAMEYE	209		FS	FS	84%	77%	3%	-32%	20%	31%		16%	27%
ZINDER	TANOUT	230	FS	FS	MFIS	202%	128%	42%	325%	-82%	21%	-37%	45%	266%
AGADEZ	AGADEZ TOWN			MFIS	HFIS	0%	0%	0%		100%	13%	13%	16%	
DIFFA	DIFFA TOWN			MFIS	HFIS	40%	24%	20%		72%				51%
DOSSO	DOSSO TOWN			FS	FS	30%	19%	54%		71%				-19%
MARADI	MARADI TOWN			FS	FS	0%	0%	0%		100%	25%		21%	
TILLABERY	NIAMEY TOWN					3%	3%	-25%		95%	4%	4%	11%	385%
TAHOUA	TAHOUA TOWN			FS	FS	21%	16%	182%		76%				
ZINDER	ZINDER TOWN			FS	FS	19%	12%	53%		81%	23%	23%	2100%	423%

Appendix F: Pastoralist Food Access and Current Food Security Status Analysis Table

			Food Security Status	Direct access	Indirect access: production and terms of trade							
					Projected percentage seasonal change of terms of trade with respect to millet for 1999/2000				Projected percentage seasonal change in terms of trade with respect to millet, relative to average for 1995/1996 - 1998/1999			
A. ADMIN2	B. *Arrondissement* (3rd-level Nigerien administrative unit)	C. Pastoral population (1000s)	D. Current food security status 1999/ 2000	E. Excess of forage beyond livestock needs	F. goat	G. sheep	H. bull	I. Livestock	J. goat	K. sheep	L. bull	M. livestock
AGADEZ	TCHIROZERINE	47		76%	-2%	17%	34%	24%	36%	54%	95%	70%
AGADEZ	ARLIT	23	FS		23%	20%	3%	17%	21%	18%	22%	16%
AGADEZ	BILMA	0										
DIFFA	DIFFA	6		-53%	-13%	0%	-12%	-12%	17%	30%	13%	17%
DIFFA	MAINE SOROA	9			-40%	-17%	-3%	-10%	-8%	15%	13%	11%
DIFFA	NGUIGMI	17			-4%	20%	7%	4%	32%	56%	29%	30%
DOSSO	DOSSO	6	FS	72%	3%	0%	-6%	-5%	30%	25%	20%	22%
DOSSO	BOBOYE	5	FS		11%	4%	6%	6%	42%	34%	28%	29%
DOSSO	DOGONDOUTCHI	8			-4%	6%	-4%	-7%	24%	30%	20%	18%
DOSSO	GAYA	3			-18%	-8%	-16%	-18%	0%	18%	6%	3%
DOSSO	LOGA	2	FS		19%	15%	0%	1%	39%	49%	29%	29%
MARADI	MADAROUNFA	4		41%	-4%	8%	-9%	-8%	26%	36%	17%	20%
MARADI	AGUIE	1			0%	0%	16%	9%	26%	22%	32%	28%
MARADI	DAKORO	24	FS		2%	32%	17%	13%	33%	55%	43%	39%
MARADI	GUIDAN ROUMDJI	4			-15%	-3%	-21%	-21%	19%	21%	15%	13%
MARADI	MAYAHI	2			2%	-7%	2%	-1%	17%	19%	21%	17%
MARADI	TESSAOUA	1			-24%	-2%	3%	-7%	9%	27%	14%	15%
TILLABERY	KOLLO	1		100%	-10%	-8%	-11%	-10%	24%	24%	19%	20%
TILLABERY	FILINGUE	19	FS		15%	18%	-17%	-13%	38%	44%	10%	14%
TILLABERY	OUALLAM	8			-7%	2%	-17%	-15%	6%	14%	-8%	-4%
TILLABERY	SAY	4	FS		4%	11%	-7%	3%	15%	14%	-10%	3%
TILLABERY	TERA	31	FS		2%	2%	-5%	-5%	-1%	-3%	0%	-2%
TILLABERY	TILLABERY	13	FS		5%	20%	11%	9%	40%	16%	16%	46%
TAHOUA	TAHOUA	6		98%	-3%	33%	2%	9%	16%	47%	18%	26%
TAHOUA	BKONNI	4	FS		9%	7%	-1%	3%	29%	21%	21%	24%
TAHOUA	BOUZA	3	FS		31%	27%	-4%	18%	51%	45%	25%	44%
TAHOUA	ILLELA	3	FS		4%	9%	1%	1%	36%	39%	30%	31%
TAHOUA	KEITA	4			-25%	-7%	-11%	-14%	11%	26%	23%	20%
TAHOUA	MADAOUA	3			-12%	-3%	-11%	-12%	16%	21%	22%	17%

			Food Security Status	Direct access	Indirect access: production and terms of trade							
					Projected percentage seasonal change of terms of trade with respect to millet for 1999/2000				Projected percentage seasonal change in terms of trade with respect to millet, relative to average for 1995/1996 - 1998/1999			
A. ADMIN2	B. *Arrondissement* (3rd-level Nigerien administrative unit)	C. Pastoral population (1000s)	D. Current food security status 1999/ 2000	E. Excess of forage beyond livestock needs	F. goat	G. sheep	H. bull	I. Livestock	J. goat	K. sheep	L. bull	M. livestock
TAHOUA	TCHIN TABARADEN	45			-18%	-13%	8%	1%	9%	9%	30%	24%
ZINDER	MIRRIAH	4	FS	150%	1%	-5%	11%	5%	31%	22%	36%	33%
ZINDER	GOURE	31	FS		2%	-3%	0%	-1%	33%	23%	21%	22%
ZINDER	MAGARIA	14			-4%	-24%	-13%	-13%	21%	11%	14%	16%
ZINDER	MATAMEYE	1			-5%	-2%	15%	3%	14%	24%	24%	16%
ZINDER	TANOUT	18			-6%	-3%	9%	3%	20%	20%	16%	21%
AGADEZ	AGADEZ CITY	1			26%	15%	-7%	1%	22%	5%	2%	-3%
DIFFA	DIFFA TOWN	0										
DOSSO	DOSSO TOWN	1										
MARADI	MARADI CITY	1			20%	-4%	17%	17%				
TILLABERY	NIAMEY CITY	0		-81%	18%	34%	7%	6%				
TAHOUA	TAHOUA CITY	0										
ZINDER	ZINDER CITY	1			-9%	-10%	2%	-4%	14%	11%	14%	15%