Rapid Appraisal of Cowpea Marketing in Niger
Phase I Report
June 1988

AGRICULTURAL MARKETING IMPROVEMENT STRATEGIES PROJECT

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RAPID APPRAISAL OF COWPEA MARKETING IN NIGER

PHASE I REPORT

June 1988

Submitted to:

U.S. Agency for International Development
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GLOSSARY OF ACRONYMS

SONARA	Societe nigerienne de l'arachide.
CA	Centrale d'Approvisionnement.
IITA	International Institute of Tropical Agriculture, Ibadan, Nigeria.
INRAN	Institut National de Recherche Agricole du Niger.
ICRISAT	International Center for Crop Research in the Semi-Arid Tropics.
APS	Agricultural Production Support Project.
DEPSA	Direction des Etudes et de la Programmation des Statistiques Agricoles.
UNC	Union Nationale de Cooperatives.
GM	Groupement Mutualistes Villageois.
BIAO	Banque Internationale de l'Afrique Occidentale.
CLUSA	Cooperative League of the USA (still known by this name in Niger, though now officially re-named National Cooperative Business Association).

Notes: (1) Due to possible confusion over the terms "Nigerien" and "Nigerian", the country names "Niger" and "Nigeria" are used in place of their adjective forms.

(2) Monetary units of cfa francs (West and Central African francs) are abbreviated as "cfa" in this report.

EXECUTIVE SUMMARY

This report is a result of a request by USAID/Niamey to conduct a rapid appraisal of the marketing system for cowpeas in Niger under the Agricultural Marketing Improvement Strategies (AMIS) Project. It is intended to provide an overview of the organization and functioning of the market and to identify system constraints and opportunities. A major objective of the study is to analyze marketing, regulatory and fiscal policies and their effects on market performance, especially with regard to exports. It is the first phase of a two-phase study which will be concluded in November/December 1988.

Cowpeas occupy more than 90 percent of total area cultivated in cash crops, and their importance in total area cultivated is second only to millet. With only a small portion of the crop consumed by farmers and with exports exceeding two-thirds of production, cowpeas have played an increasingly dominant role in the Niger rural economy and in the agricultural export sector.

Cowpea consumption in Niger is less than 40,000 tons, or only 16 percent of total production. Per capita consumption is estimated at 3 kg per year in urban areas and 6 to 7 kg per year throughout the country. Campaigns to promote the nutritive benefits of cowpea consumption in Niger have remained largely ineffective owing to the slow process of changing food consumption habits, the status of cowpeas as the major cash crop and their high prices relative to other food crops.

Cowpeas' insignificance in the local diet and their low share in total household expenditure suggest a low price elasticity of demand. Urban and rural consumption patterns also indicate that cowpea consumption may be negatively correlated with income. These results demonstrate that domestic demand for this crop is unlikely to increase significantly in the near future and that exports must continue to play a vital role in the Niger cowpea market.

Cowpea exports averaged more than 160,000 tons between 1976 and 1987 and approximated 70 percent of total production. (Allowing 14% for seeds and losses leaves 16% for local consumption.) The Societe Nigerienne de l'arachide (SONARA), the parastatal which had a legal monopoly on cowpea exports between 1976 and 1984, actually marketed on the average less than 12 percent of total exports. The bulk of cowpea exports have been channeled through unofficial trade. The pervasiveness of unofficial trade is partly due to the proximity of the Nigeria border to farm families for whom reporting to customs officials, often located far from their villages, would result in higher transport and other costs. Yet most cowpea trade has remained unrecorded due to false invoicing and smuggling. Smuggling has been facilitated by the long and porous border with Nigeria where most cowpeas are exported. The two major reasons for the large variation between actual and recorded trade have been SONARA's monopoly position and the export tax.

Many large to medium-sized traders once active in the cowpea export market ceased any exporting after 1976 when SONARA's monopoly was established. Only a limited number of politically influential large-scale traders have been able to obtain export authorizations from local officials. Even though cowpea exports have been liberalized since 1984, the new policy has not been appropriately publicized; many farmers were, at the time of the study, unaware that they could export freely. Hence, SONARA continues to possess a de facto monopoly over the formal sector.

A central conclusion of the study is that the costs of the current 20 cfa/kg export tax on cowpeas have greatly outweighed its benefits. Tax receipts from cowpea exports have averaged less than 400 million cfa per year or approximately 0.6 percent of total tax revenue. These limited benefits are insignificant in comparison with the numerous costs incurred by producers and traders as a result of the tax.

The export tax has raised the cost of cowpea trade in both the official and parallel markets. Its share in total marketing costs has ranged between 15 and 53 percent depending on export destination. Marketing costs incurred by unofficial traders have also been higher with than without the tax, the differential being equal to the costs of eluding the tax.

Removal of the tax would increase competitiveness of Niger exports and encourage unofficial traders to conduct larger and more efficient transactions. Economies of scale together with higher demand from rising exports would increase prices to farmers. A shift in relative prices would stimulate local production and facilitate adoption of better farming practices. Elimination of the tax would also reverse the signal now being sent to Nigeria farmers which encourages them to increase production, and would enhance current market leadership that Niger enjoys. More important, Niger's long-term development strategy has increasingly aimed at removing market imperfections and adopting reforms that promote exports in line with the country's comparative advantage. Elimination of the tax would be a significant step in this direction. Further improvement can be achieved by liberalizing cowpea export licensing procedures and reducing the movement of goods between the production areas and consumption centers in Niger and Northern Nigeria.

1. INTRODUCTION

1.1 Background

This rapid appraisal of cowpea marketing was prepared for USAID/Niamey by Abt Associates under the Agricultural Marketing Improvement Strategies (AMIS) Project. The work was carried out in Niger by a team of two agricultural economists, Millie Gadbois and Bechir Rassas, between April 27 and June 2, 1988. The present study is the first of two phases; the second will be carried out during the main marketing season for cowpeas in November/December 1988. The final report will incorporate the findings of both phases into a single document.

The study team spent five weeks examining the cowpea marketing system from the production zones in Niger to the export destinations in Benin and Northern Nigeria. Contacts with Niger officials and staff members of several development projects as well as documentary and statistical research were undertaken in Niamey during the first week of the study. Interviews with producers, cooperatives, traders and local officials were conducted in the departments of Maradi and Zinder during the second week. Investigation of the marketing systems in Benin and Nigeria and their relevance to the Niger cowpea export market was undertaken in two separate visits to Cotonou and Northern Nigeria, between May 9 and May 16, 1988. The follow-up study, scheduled during the marketing season in November-December, will provide further analysis of the Niger cowpea marketing system and the potential for increased exports to major consumption areas in Northern Nigeria and Lagos.

Cowpeas were selected by the USAID mission in Niamey because of their importance in the Niger rural economy and the agricultural export sector. The agricultural sector represents 50 percent of GDP and employs 90 percent of the population. Cultivable land in Niger represents only 3 percent of total land area. The Southern belt, with a higher rainfall and a higher population density, accounts for much of the livestock production and nearly all agricultural crops. Cowpeas occupy more than 90 percent of total area allocated to cash crops in a given year and their importance in total area cultivated is second only to millet. With exports exceeding two-thirds of production, cowpeas have played an increasingly dominant role in the rural economy and the agricultural export sector of Niger

1.2 Methodology

The AMIS Rapid Appraisal methodology was used in preparing the study. Rapid Appraisal may be defined as a broad overview of the organization and performance of the marketing system for a given commodity, designed to identify, under time and resource constraints, major system limitations and opportunities. It provides a cost-effective tool to generate knowledge about commodity marketing systems that may be used to improve system efficiency as well as to take advantage of unexploited or underexploited opportunities.

The Rapid Appraisal approach becomes attractive when limited analytical information is available, since the alternative may be the initiation of a lengthy and costly data collection process. This was the state of affairs for the Niger cowpea subsector. Little hard data were available to describe such a large and vibrant economic activity, and the accuracy of what was available was questionable. To develop an overall understanding of the cowpea marketing system, interviews with knowledgeable individuals were first conducted. Informal questionnaires were then designed to interview multiple participants at all stages of the production and marketing chain, including nine farmers and twenty traders.

The report is organized into eight chapters, including the introduction. Chapter 2 analyzes production systems and production constraints. Demand for cowpeas in domestic and export markets is investigated in Chapter 3. Chapter 4 analyzes market infrastructure, organization and performance. Cowpea marketing in Nigeria and Benin are covered in Chapters 5 and 6 respectively. Government interventions in the cowpea market are assessed in Chapter 7. Special consideration is given in this chapter to the effects of the export tax on market behavior and efficiency. Policy changes as well as key areas for further research are recommended in the concluding chapter.

2. PRODUCTION ANALYSIS

The agricultural sector plays a major role in the economy of Niger. The vast majority of agriculture is rain-fed, although irrigated agricultural production has been extended to more than 10,000 hectares in the 1980's. Only three percent of the total land area is under cultivation in a given year. Crop production is concentrated in the southern portion of the country which flanks the Niger River, as can be seen in Figure 1.

The major food crops are millet and sorghum. In recent years cowpeas have replaced peanuts and cotton as cash crops, and have become an important source of revenue for farmers, as Table 1 below demonstrates. As Niger peanuts grew less competitive on the world market, farmers turned to cowpeas and production increased markedly in the 1970's. In the 1980's, however, cowpea production has stagnated; this is due to a combination of factors including the decrease in marketing opportunities due to the role of SONARA in marketing, and the inability of the informal sector to handle a greater volume of exports.

Table 1
Comparison of Cowpea and Peanut Production
(000 tons)

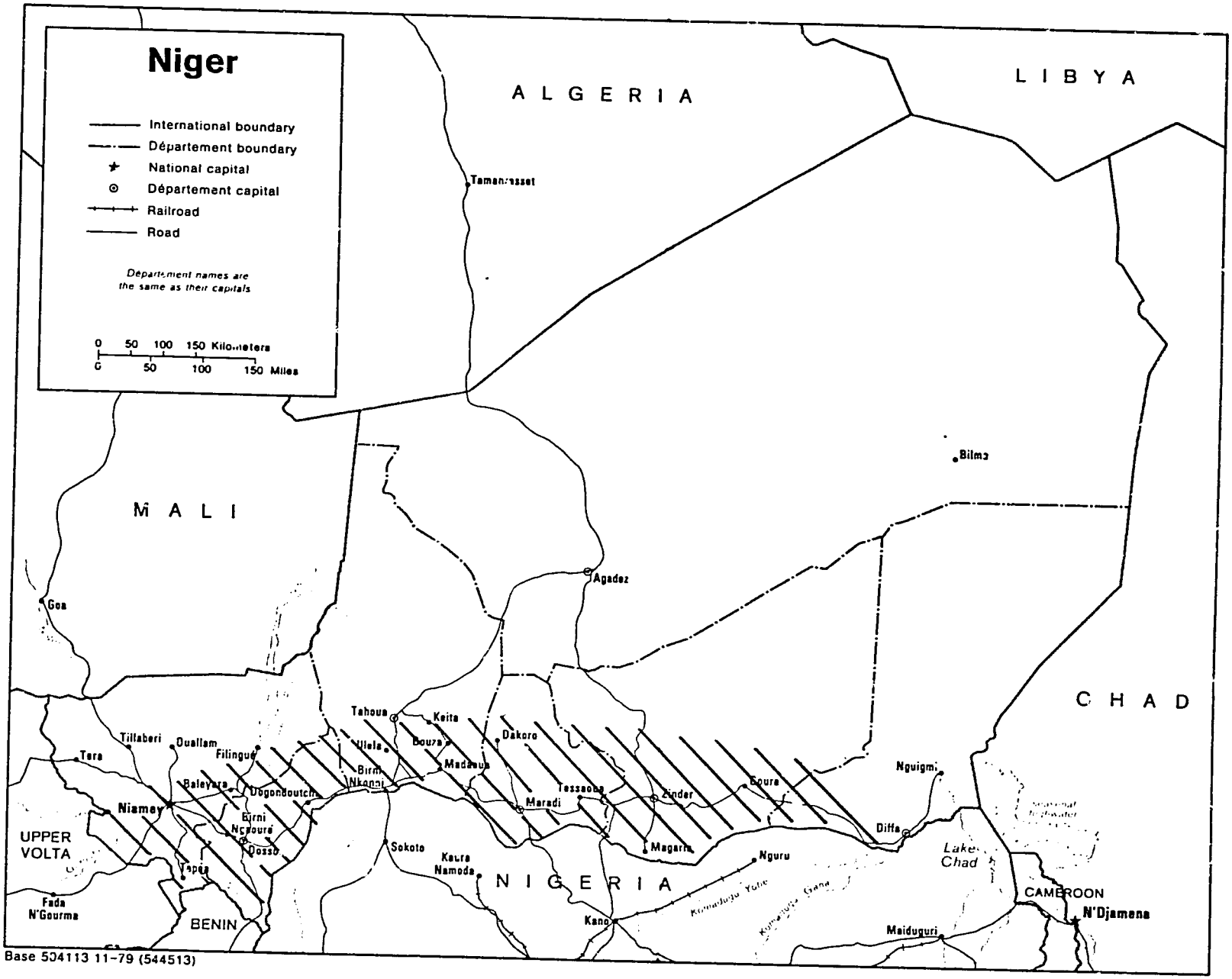
	1960	1965	1970	1975	1980	1985	1986
Cowpeas	43,685	47,320	75,710	218,500	268,735	115,332	292,935
Peanuts	150,313	278,060	203,460	41,700	126,125	8,478	N.A.

Source: Rapports Annuels Statistiques Agricoles, Années 1960-1985. Republique du Niger, Ministère de l'Agriculture, Direction des Etudes, de la Programmation et des Statistiques.

Cowpeas are traditionally intercropped with either millet or sorghum. Yields are low, varying between 100 and 250/kgs. per hectare. Low yields can be attributed in large part to insect problems during the growing season and low plant densities.

Figure 1

Map Showing Cowpea Production Zones in Niger



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Major technical constraints to increased production include: the lack of easily accessible export markets in large part due to the marketing monopoly of SONARA legislated in 1975 and only recently abolished (though a de facto monopoly still exists); the vulnerability of cowpeas to attacks from insects, pests, and diseases; the lack of improved cowpea varieties at the farm level; the lack of easy access to inputs such as fertilizers and insecticides for many producers; the high labor requirements of cowpea production at peak periods; the lack of cost-effective storage techniques available at the farm level; and the low plant densities practised which hinder substantial increases in cowpea yields.

2.1 Production Volumes and Areas

Cowpea production has increased substantially since 1970, and by 1975 had surpassed peanuts. Cowpeas are grown primarily as a cash crop, with ten to fifteen percent of the total crop retained for family consumption. Some farmers indicate that they would market all of their crop if given the opportunity. Cowpea hay is an important by-product which is used as dry season fodder. In the Niamey Department it is estimated that financial returns from hay sales far exceed those from cowpea food crop production.

As Table 2 indicates, cowpeas rank second in area, exceeded only by millet, and are third in overall production after millet and sorghum.

Total production averages over 250,000 tons in years of adequate rainfall, falling to less than 200,000 tons in years of low or badly distributed rainfall. Although total cowpea production more than tripled between 1970 and 1975, overall production has stagnated in the 1980's due to difficulties experienced by farmers in marketing their crop. Although markets are readily available in Northern Nigeria, the role of SONARA in the market has discouraged cooperatives and farmers from making formal export agreements. (See Appendix A for total cowpea production in Niger, 1960-1987.)

Table 2
Area and Production of Major Food Crops

	Millet		Cowpeas		Sorghum	
	000ha	000tons	000ha	000tons	000ha	000tons
1980/81	3,072	1,363	1,105	269	768	368
1981/82	3,038	1,314	1,198	282	982	322
1982/83	3,084	1,293	1,428	282	1,135	359
1983/84	3,136	1,298	1,609	271	1,107	355
1984/85	3,026	771	1,513	195	1,098	236
1985/86	3,169	1,450	1,566	115	1,142	329
1986/87	3,239	1,383	1,591	293	1,109	360

Source: Rapports Annuels Statistiques Agricoles, Annee 1986, op cit.

2.2 Production Zones

The Departments of Maradi, Zinder, Dosso and Niamey account for more than three-quarters of total cowpea production. Table 3 below presents the production by Department and their relative importance for the years 1980-1987. The figures indicate a very large increase in production in Dosso on 1986/87, surpassing production in Zinder. The production data published by the Ministry of Agriculture vary widely from year to year and are of doubtful quality due to small sample size, missing data, and multiple reporting errors.

2.3 Production Systems

2.3.1 Major Characteristics

Present cowpea production is a labor intensive system characterized by low yields which can in large part be attributed to use of minimum amounts of fertilizers and insecticides/pesticides, unimproved seed varieties, and such cultural practices as improper plant spacing and low plant densities.

Table 3
Cowpea Production by Department,
1980-1987

Department/Year	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
AGADEZ							
Production, MT	--	--	--	--	--	--	118
% of total production	--	--	--	--	--	--	--
DIFFA							
Production, MT	2,800	1,835	6,335	4,015	782	5,540	11,564
% of total	1	--	2	9	3	4	4
DOSSO							
Production, MT	35,050	45,738	20,895	34,530	44,260	18,055	99,552
% of total	13	16	7	13	23	16	34
MARADI							
Production, MT	106,470	131,773	92,607	73,400	61,352	6,827	39,060
% of total	40	47	33	27	31	6	13
NIAMEY							
Production, MT	37,290	49,710	47,030	40,775	24,678	8,073	42,300
% of total	14	18	17	15	13	7	14
TAHOUA							
Production, MT	17,910	22,185	64,907	64,255	32,776	10,790	25,708
% of total	7	8	25	24	17	9	9
ZINDER							
Production, MT	69,215	30,376	49,970	54,374	30,995	66,047	74,633
% of total	26	11	18	20	16	57	25
TOTAL (ALL DEPARTMENTS)	268,735	281,617	281,744	271,349	194,843	115,332	292,935

SOURCE: Rapports Annuels Statistiques, op. cit., as interpreted by the team.

Farmers interviewed had considerable experience with cowpeas, averaging more than ten years' experience in cowpea production. All farmers interviewed expressed a desire to increase production. Table 4 below presents the major characteristics of the farming systems encountered.

Cowpeas are usually planted after the first substantial rain, after millet and sorghum are planted. They are usually grown as an intercrop with either millet or sorghum, and less frequently with manioc and corn. Labor requirements are intense for cowpea production at planting, weeding, and especially at harvest time. Harvest can take up to 11 days for a typical plot. Hired labor is often necessary at peak periods. After harvesting the pods, the plants are bundled and stored or sold as dry plants (fodder) to feed cattle or other animals during the harsh dry weather period. Dry season cowpea production on plains near riverbanks, in low-lying areas (bas-fonds), and on irrigated perimeters is becoming of increasing importance. Dry season production is less susceptible to attacks by insects, pests or diseases.

Cowpea cultivation is essentially undertaken manually with the short-handled hoe, the daba or the hiler, a long-handled weeder. Animal traction is not common.

The widely varying annual rainfall and rainfall distribution patterns during the agricultural season are major determining factors which render cowpea production -- and all dryland agriculture in the Sahelian Zone -- a most risky venture. The development of drought resistant varieties has helped to reduce farmers risks.

2.3.2 Intercropping vs. Monocropping

Cowpeas are rarely grown as a sole crop; they are usually intercropped with millet or sorghum. Farmers feel that intercropping reduces risks and optimizes labor use. Intercropping of millet or sorghum with cowpeas involves first extensively planting millet in low densities at scattered locations, often with wide spaces between plants and rows. The farmers feel that this reduces risk; if one crop or area of field does not receive enough rain or

Table 4
Characteristics of Present Cowpea Production Systems

Average Total Production:	250,000 tons (normal rainfall) 200,000 tons (low rainfall)
Planting Dates:	Rainy season: After millet and sorghum Dry season: February
Intercropped:	With millet, sorghum and (rarely) corn, + manioc
Area Cultivated:	1.5 million ha.(1980's average); second in importance after millet
Yields:	150-250 kgs/ha
Major Production Areas:	1. Zinder 2. Maradi 3. Dosso 4. Niamey (mostly fodder production) 5. Tahoua
Storage:	Minimal, most producers sell immediately after the harvest to meet family cash needs.
Use of Cowpea Revenues:	Primarily to purchase cereals, but also clothing; revenues also used to pay wage labor.

SOURCE: Present survey.

suffers from attacks, perhaps another part of the field will succeed. They feel that intercropping of cowpeas makes maximum use of land, enables maximum return to labor invested in land preparation, and provides beneficial effects to millet and sorghum. Two farmers interviewed practiced monocropping as they found yields to be higher.

Studies[1] have shown that intercropping is relatively advantageous in terms of profit maximization and risk aversion when traditional practices are used, i.e. use of unimproved varieties, minimal fertilizer and insecticide use. It is generally felt that only when new technologies are introduced that demonstrate the cost-effectiveness and benefits of monocropping that it will be adopted on a large scale.

2.3.3 Input Use

The minimal use of inputs such as improved seeds, fertilizer, insecticides, pesticides and agricultural equipment is due in part to the disorganization of the input supply system. No concerted effort has been made to provide inputs to farmers in an efficient manner nor to import cheaper fertilizers.

Seeds. Farmers obtain seeds from their own stock, from cooperatives, or from local markets. One farmer interviewed obtained seeds from a seed multiplication center.

Seed varieties currently being extended to farmers are the TN88-63, developed by INRAN, which is a 70-day variety for areas with an annual rainfall of 300-400 millimeters. It is often criticized for its failure to generate large quantities of hay and its less desirable taste. The TN36-64 is a 70-day variety for areas with an annual rainfall of 400 to 500 millimeters. The TN4-69 is a 90 day variety recommended for areas with an annual rainfall of 400-500 mm. The TN98-63, a 90-150 day spreading variety, is recommended only for higher rainfall zones.

---

1 David W. Norman, An Economic Survey of Three Villages in Zaria Province, Samaru Misc. Paper #37, Ahmadou Bello University, 1972.

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Newly developed varieties which have been extended [illegible] yet proven to be superior to local varieties: farmers ha[illegible] little interest in adopting these new varieties. The CB-5, [illegible] in 1987-88, proved unsuccessful as the California-develope[illegible] drought resistant and proved highly susceptible to pests and [illegible]

New varieties currently being tested by ICRISAT are the [illegible] dual-purpose red bean variety, providing good fodder and [illegible] proper production techniques are respected, i.e. proper crop [illegible] spacing, and adequate fertilizer and insecticide doses.[2]

Fertilizer. Fertilizer use among farmers interviewed [illegible] 200 kgs/per hectare, with an average of [illegible] kgs per hectare [illegible] interviewed. It is purchased from the Centrale d'Approvisionnement [illegible] cooperatives, or from local traders. The amount of fertilizer [illegible] has diminished due to price increases which followed the [illegible] removal of government subsidies. Farmers complain about the [illegible] non-subsidized fertilizer (prices cited varied between [illegible]

Sales of cheaper subsidized fertilizers imported from [illegible] traders have increased markedly. At the time of the study [illegible] tira per 50 kg. bag (14-16 cfa kg. [illegible] but farmers are [illegible] available. The sale of fertilizers by cooperatives [illegible] bstantially, although farmers prefer to buy from traders [illegible] aders selling cheaper Nigeria fertilizer. [illegible] [illegible] rge a 15 F cfa per kg markup. Fertilizer prices at the [illegible] shown in Table 5.

Other varieties have recently been released [illegible] Nigeria. These will be investigated [illegible]

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Table 5
Fertilizer Prices in
Maradi and Zinder, May 1988:

Source	Price Per kg (in cfa)[a]
Credit (UNC)	60
Private Traders	45-55
CA	35
Obtained from Nigeria	14-16

[a]Prices cited by cowpea producers in four villages in Maradi and Zinder Departments.

Other Inputs. Cowpeas are especially vulnerable to attacks by insects, pests and diseases. Appropriate doses of insecticides and fungicides are necessary to protect plants before maturation. Farmers indicate, however, that they use minimal amounts of insecticides and fungicides other than those distributed free of charge by the Agricultural Service. Some farmers do purchase insecticides from Nigeria at 16 cfa per kilogram.

2.4 Production System Constraints

Major production system constraints include the susceptibility of cowpea plants to insect pests and diseases, the lack of improved seed varieties appropriate to local conditions, the unavailability of an efficient input delivery system, the high labor requirements at peak periods during the growing season, the lack of proper storage techniques, and the failure to respect recommended practices which will lead to higher yields. Widely varying annual rainfall and rainfall distribution patterns are, of course, a major constraint which heightens the risks attached to any increased investment in rainfed agriculture.

2.4.1 Insects and Diseases

The most limiting constraint for cowpea is the vulnerability to insect, pests and diseases. The cowpea plant is vulnerable to pests from the seedling to the harvest stage, and in storage. Major insect pests are aphids, flower bud thrips, and storage bruchids. Other bacterial, virus, and fungal diseases may also infect the plant at various stages.

The attacks can be greatly diminished through two treatments of insecticide and through fungicide use. Insecticide spraying is undertaken free of charge in some areas by the Agricultural Service. Fungicides can be purchased at 65 cfa/kg, when available.

2.4.2 Lack of Improved Varieties

There is a need for early maturing varieties (60 days) with high yield potential and resistance to insects and diseases. One of the varieties (TVX-3236) currently being tested at IITA and ICRISAT fulfills the above stated criteria; however the leaves are lost at maturity and hence no fodder is available for animal feed, making it most undesirable to local farmers.

The TN 578 currently being tested under the Agricultural Sector Development Grant have received excellent results when improved practices have been observed (use of fertilizer and insecticides, proper plant spacing and density). The participation of the ASDG - Seed Multiplication Component, acting as a liaison between research and extension, could accelerate farmer adoption of improved varieties.

2.4.3 Unavailability of Agricultural Inputs

Inputs such as fertilizer, fungicides, and especially insecticides are of utmost importance in cowpea production. Farmers interviewed raised the unavailability of inputs as a major constraint. The Centrale d'Approvisionnement, which had until recently the state monopoly on input supply, did not succeed in providing readily available inputs to farmers. Farmers located near the Nigeria border can purchase cheaper (subsidized) fertilizer and other inputs from Nigeria. Private traders also purchase inputs from Nigeria, but

these are not available to all farmers, especially those away from larger towns.

Another possibility may be some variation of contract farming. In Bendel State, Nigeria, a rice milling firm provides farmers with improved varieties, and with fertilizers and other inputs. Though prices are fixed before the agricultural season, if the market price increases the company adjusts its price upwards to reflect the market price at that time. This venture might provide a model for Niger.

2.4.4 High Labor Requirements

High labor requirements at planting, weeding, and harvesting necessitate the hiring of wage labor. Farmers indicated the need to hire additional labor for periods of up to ten days each during the planting, weeding, and harvesting periods. Some of the revenues earned from cowpea production are used to pay for wage labor during these peak periods.

The financial and economic appraisals undertaken in 1983 for USAID/Niger of the technical packages available for cowpeas found that both full or partial adoption of the package is cost effective. A basic assumption of the analyses is that no additional wage labor is necessary. Additional appraisals which include the hiring of wage laborers at peak periods need to be undertaken to correctly evaluate the cost-effectiveness of the present technical packages.

2.4.5 Low Plant Densities

Low plant densities associated with intercropping are in large part responsible for the low yields obtained. Increased densities, together with proper plant spacing and recommended varieties and doses of inputs, increase yields to up to one ton per hectare.

2.5 Adoption of New Techniques

Researchers and extension experts maintain that farmers would be willing to adopt new techniques and improved farming practices if they are shown to be cost effective under farm conditions. If farmers feel certain that an assured market is available for their cowpeas, they would then be willing to invest in increased input use and animal traction.

Improved technologies in cowpea production are presently being tested by the INRAN (Farming Systems Research Division), the Agricultural Production Support Project (APS), and by ICRISAT. On-farm tests are currently being conducted by both ICRISAT and the APS Project. APS results indicate that higher yields and increased economic returns are gained in fields intercropped with millet through introduction of new varieties (TN5-78) and prescribed doses of fertilizer and two treatments of insecticides, while respecting proper plant densities and crop spacing. Higher yields and increased returns are observed in fields monocropped with cowpeas using the improved inputs, and respecting proper techniques. ICRISAT is currently conducting tests involving two year crop rotations. In this first year an improved cowpea variety (TVX-3236) is planted with proper fertilizer and insecticide doses and improved practices concerning plant density and spacing; in the second year millet is planted, benefitting from the residual effect of the previous cowpea crop. If properly managed, on-farm cowpea yields vary between 600 and 1000 kg/ha. (On-station yields range from 1 to 1.5 tons per hectare.) The ICRISAT experiments are cost-effective only if animal traction is used.

2.6 Use of Cowpea Revenues

Farmers indicated that in addition to cereal purchases, revenues earned from cowpea production are used for purchases of clothing or to finance weddings and other ceremonial functions. There is little evidence at present that farmers reinvest in agriculture, although earnings are sometimes used to finance hired labor at peak periods.

3. DEMAND ANALYSIS

This chapter describes the nature of the demand for Niger cowpeas. A consumption profile for cowpeas in Niger is first presented, then consumption estimates and trends are suggested. The last section of the chapter explores the direction and magnitude of export flows.

3.1 Cowpea Uses in Niger

Due to its ecological adaptability, the cowpea is one of the most important food legumes in West Africa. Its contribution to the nutritional status of the population in this region is substantial. (See Appendix B for a tabulation of the nutritive value of cowpeas, leaves, pods and mature seeds.) Despite the considerable variation in the protein content of various cultivars, the cowpea contains a high concentration of good quality protein and is low in anti-nutritional factors. In contrast with most West African countries where it is highly favored by the local population, the cowpea is produced in Niger primarily as a cash crop.

Although its importance as a food crop is rather limited, a variety of cowpea recipes can be found in Niger. They are used as rehydrated beans, fresh vegetables and cooked greens. The residual plant material is used for feeding livestock.

Cowpea seed varies in size, shape and color. The most common variety is white with a smooth coat and a white hilum surrounded by a dark ring, even though the skin coat can vary in color from white through various shades of brown, red and purple to black.

The dried seeds are consumed in two main forms. When used as a rehydrated cooked dry bean, the process necessarily involves soaking dry seeds in water. Some consumers prefer a light-colored bean free of black specks, or "black eyes". Decortication is then done by manual rubbing and floating off the seed coats from cowpea cotyledons. Coated or uncoated seeds are boiled and eaten alone or in combination with rice or cassava paste. They are often seasoned with peanut oil, butter or milk as well as local spices.

Cowpeas are also ground into flour. The flour is used to make Wanan Waké, a cowpea bread popular in Eastern Niger, particularly during the month

of Ramadan. Pieces of cowpea dough are steamed and then seasoned with a local sauce (Dan Waké). The paste may be mixed with chopped onions and spices and made into deep-fried cakes (Kekkena).

The fresh immature seeds are sometimes eaten as a vegetable, particularly in rural areas. These seeds are eaten boiled (Doungouri Fouloulanté), or ground and mixed with salt, pepper and a peanut paste (Doungouri Kadawa). The young shoots and tender leaves are sometimes boiled and eaten as a green vegetable accompanying millet couscous, a staple food dish.

The residual plant material is sun-dried and used as a hay in the dry season, particularly in more densely-populated or urban areas. Dried bundles of cowpea hay are readily purchased in urban markets. Prices normally range from 100 to 150 cfa, but may be as high as 500 cfa per bundle in the Niamey market.

3.2 Domestic Consumption

In contrast to information on production and prices, data on consumption of cowpeas in Niger are almost nonexistent. Two methods are generally used to estimate domestic consumption. Consumption estimates can be obtained by subtracting exports from production and allowing a percentage for retained seeds and handling losses. However, in the absence of quantitative information on exports (see next section), this method could not be utilized. Another alternative is to extrapolate from results provided by household surveys. Unfortunately only two such surveys were found. These surveys cover the city of Niamey and the Department of Diffa. Qualitative information revealed that while the Niamey survey was reasonably representative of urban areas, cowpea consumption in Diffa did not reflect observed consumption patterns prevalent among the rural population. Consumption characteristics in rural areas were, therefore, investigated on a qualitative basis from interviews with a limited number of farmers and knowledgeable individuals in the Departments of Zinder, Maradi, Dosso and Niamey. The results of this investigation are summarized in Table 6.

3.3 Consumption Patterns

Based on the above estimates and on team observations, cowpea consumption in Niger may be characterized by low demand, low price elasticity, and negative income elasticity of demand.

3.3.1 Low Demand

At 6.2 kg., per capita cowpea consumption is less than 3% of the official estimate for cereal consumption of 200 to 240 kg. per capita.

Demand for cowpeas is low in both rural and urban areas. Consumption in rural areas, where demand is highest, is estimated at only 15% of production. Owing to the high prices of cowpeas relative to other food crops, resulting from high demand in neighboring countries, farmers are inclined to sell most of the harvest to satisfy their cash obligations. Millet, sorghum and maize are consumed in preference to cowpeas.

Urban areas account for only an estimated 7% of all cowpeas consumed in Niger. This reflects both the low per capita consumption -- less than half that in rural areas -- and the low level of urbanization in Niger. Rice and millet are the preferred cereals for most urban dwellers.

The low consumption level for cowpeas has led the government of Niger through the Association des femmes Nigeriennes (AFN), or Nigerien Women's Association, to organize food competitions and awareness campaigns throughout the country to expand the various utilizations of cowpeas. These campaigns have also aimed at explaining the functional roles of cowpea starch and protein and their contribution to improved nutritional status. These efforts are, however, unlikely to succeed in any major way given the difficulty of changing consumption habits, the status of cowpeas as a primary cash crop and their high prices relative to other food crops.

Table 6
Cowpea Consumption in Niger

	Rural	Urban	Total
Production (000 tons)[a]			240
Population (000)[b]	5,270	930	6,200
Consumption as % of Total Production[c]	15	1.2	16.2
Per Capita Consumption (kg/year)[d]	7	3	6.2
Quantity Consumed (000 tons)[e]	36	2.8	38.8
Percent of Total Consumption	93	7	100

a Average for 1980-1987 period, calculated from data in Rapports Annuels des Statistiques, Ministère de l'Agriculture, Niamey.

b Calculated from data in World Development Report, World Bank, 1986.

c For rural areas: present survey.
For urban areas: urban population x per capita consumption of 3 kg from Etude sur la consommation des céréales dans la ville de Niamey, Mariama Gamatié, June 1987.

d For rural areas: 15% of total production divided by rural population.

e 15% and 1.2% of total production for rural and urban areas respectively.

3.3.2 Low Price Elasticity and Negative Income Elasticity of Demand

Price elasticity of demand for food in Niger is estimated at 0.7.[1] This elasticity is most likely lower for cowpeas given their insignificance in the local diet and their low share in total household expenditure. Comparison of urban and rural consumption patterns also indicates that cowpea consumption may be negatively correlated with income. Cowpeas' status as an inferior good and their low price elasticity suggest that domestic demand for this crop is unlikely to increase significantly in the near future. This result indicates that exports must continue to play a vital role in the Niger cowpea market.

3.4 Exports

Estimates of cowpea exports from Niger are detailed in Table 7. Since 1976, total annual exports have averaged 164,000 ton and have amounted to more than two-thirds of total production. It is striking to note that the Société nigérienne de l'arachide (SONARA), the parastatal which monopolized the export market for cowpeas in Niger between 1975 and 1984, marketed on average less than 12 percent of estimated total exports in the 1976 to 1987 period. In 1980 and 1981 only one percent of total cowpea production was marketed by SONARA.

Almost 90 percent of the cowpea trade has remained unrecorded due to false invoicing and smuggling. Smuggling has been facilitated by the overwhelmingly long and porous borders with neighboring countries, particularly with Nigeria where most Niger cowpea transactions are made. Much of the unrecorded trade is also due to the proximity of the Nigeria border to farm families for whom reporting to customs officials, often located far from their villages, would result in higher transport and other costs.

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1 Source: FAO Study.

Official records show that Nigeria is the sole importer of Niger cowpeas. Field work conducted by the study team in Niger, Northern Nigeria and Cotonou, Benin indicates that unofficial exports are also channeled almost exclusively to Nigeria. The cowpea markets in Nigeria and Benin are examined in Chapters 5 and 6 respectively.

The export tax currently in force on cowpeas has a major effect on export trade. An analysis of subject appears in Chapter 7.

Table 7
Estimated Cowpea Exports From Niger, 1976 to 1987
(000 metric tons)

Year	Production[a]	Official Exports[b]	Consumption[c]	Estimated Total Exports[d]	Estimated Unofficial Exports[e]
			(000 tons)		
1976	216	19	35	149	130
1977	207	49	33	143	94
1978	271	4	44	186	182
1979	304	19	49	209	190
1980	266	49	43	183	134
1981	275	4	44	190	186
1982	272	4	44	187	183
1983	271	15	44	186	171
1984	195	12	32	134	122
1985	115	0	19	79	79
1986	293	31	47	202	171
1987	209	37	34	144	107
Average	239	19	39	164	145

a Ministère de l'Agriculture et de l'Environnement, Rapport annuel des statistiques agricoles, 1987.

b Information provided by the Ministère du Commerce, Départment du Commerce Extérieur. These figures represent mainly SONARA's exports.

c 16.2 percent of total production (see Table 6).

d Total production minus 15 percent allowance for seeds and losses minus consumption.

e Total exports minus official exports.

4. THE MARKETING SYSTEM

In this chapter the structure of the marketing system for cowpeas in Niger is analyzed. Marketing infrastructure and facilities including the road, transport, storage and credit systems are first described in Section 4.1. Section 4.2 identifies the major participants including their roles and functions, and the major distribution channels. Market performance is then assessed, with special attention given to the marketing margins and levels of competition.

4.1 Market Infrastructure and Facilities

4.1.1 The Transport System

Niger's terrain is mostly flat with no major physical barriers. The road network is concentrated along the Southern border where the majority of the population and most economic activity are located. There are approximately 7000 km of paved, unpaved and rural roads in Niger. Paved roads cover more than 2500 kms and provide strong links between major production areas and trade centers.

The transport system is based on an active and diversified trucking industry. The Societe Nationale des transports Nigeriens (SNTN) has approximately 500 trucks or half the fleet engaged in freight transport. The other half is owned by private traders and small truckers. Rural areas are served by "bush taxi" (taxi-brousse) and light trucks, although some areas remain inaccessible in the rainy season. In relation to cowpea trade, Nigeria importers play a significant role in the Niger freight transport system. Due to the proximity of the Nigeria border and traders' interest in evading the export tax, pedestrian and animal transport is also substantial.

4.1.2 Storage Facilities

Little cowpea storage is undertaken at the farm level. The crop is usually sold immediately after harvest between October and December. The practice of limited on-farm storage is mainly due to farmers' need for cash and the crop's vulnerability to mold and insect infestation in storage. The

bulk of the harvest is purchased by private traders. As explained in the next section, cowpeas are either immediately shipped to Nigeria or stored in private storage facilities for later sales. Official exports are stored in SONARA warehouses located throughout the country.

4.1.3 Market Information

The flow of price information is facilitated by the frequent movement of trucks between major trade centers in Niger and Northern Nigeria. In rural areas near Nigeria, information moves with the numerous small traders travelling back and forth over the border. Cowpea prices in Nigeria are announced, in Hausa, on the Nigeria radio network, providing another source of information. In rural areas not contiguous to the border, however, the lack of information about prices and market conditions remains a major problem.

4.1.4 Credit

Formal credit institutions in Niger have been undergoing a sharp recession since the early 1980's. The share of credit available to the non-government sector has been falling and a large portion of the bank credit to non-government institutions has been allocated to public or semi-public enterprises as opposed to the private sector. As a consequence, informal credit plays a far more important role than institutional credit in facilitating the exchange process and transfer of commodities as they move from producers to consumers.

Traders play a dominant role in the flow of informal finance in both rural and urban areas. Due to the size of their potential collateral in the form of liquid assets and merchandise stock, larger wholesalers secure most of their credit through banks. These funds are transformed into a shorter-term lending throughout the marketing channel. In urban areas, wholesalers consign important stocks of merchandise on credit to smaller-size traders who in turn are the principal source of credit for urban retailers. The liquidity introduced at the wholesale level flows down to the village setting through rural traders and local assemblers.

Even more important than traders and merchants as a source of loans for farmers are relatives, friends and neighbors. The predominant form of informal borrowing is in food crops; transactions in kind are less costly and allow easy circulation of temporary surplus generated in the rural economy. Cash loans are nonetheless significant and, as the primary cash crop, cowpeas provide the basis for most of these transactions.

4.2 Market Organization

The Niger cowpea market is characterized by a multiplicity of actors, including producers, local traders and/or commission agents, wholesalers and/or exporters, cooperatives, the parastatal marketing organization SONARA, organismes stockeurs (primary purchasers for SONARA), retailers and consumers.

The five major marketing channels for cowpeas are depicted in Figure 2. The local consumption channel concerns cowpea production which is sold in village markets by producers to local traders and thence to consumers. In the internal market channel, cowpeas are sold through commission agents to wholesalers who market them through retailers or to other wholesalers in urban areas (mainly Niamey) for internal consumption. The SONARA channel sends cowpeas either through cooperatives who act as agents for SONARA, or through commission agents who assemble the product in villages for wholesalers who in turn act as assembly agents (organismes stockeurs) for SONARA. SONARA then exports the cowpeas to Nigeria. The most important channel in terms of volume handled is the informal export channel. Here producers sell either directly or through commission agents to wholesaler/exporters, usually in small quantities. These wholesaler/exporters, who may be either from Niger or Nigeria, then arrange export of the cowpeas to Nigeria.

The SONARA channel may be considered the official export marketing channel, whereas the vast majority of exports pass through the informal or unofficial export channel.

4.2.1 Producers

Producers are the most numerous participants in the cowpea sub-sector. Most seek to market the great majority, if not all, of their production. Farmers interviewed sold to cooperatives, local traders, or to local women who use the cowpea to make flat cakes ("gallettes"), which they retail locally. Producers in towns close to the Nigeria border sell to Nigeria traders who attend local markets.

The cowpea production is transported to local markets in donkey carts, or carried on heads if the quantity is small.

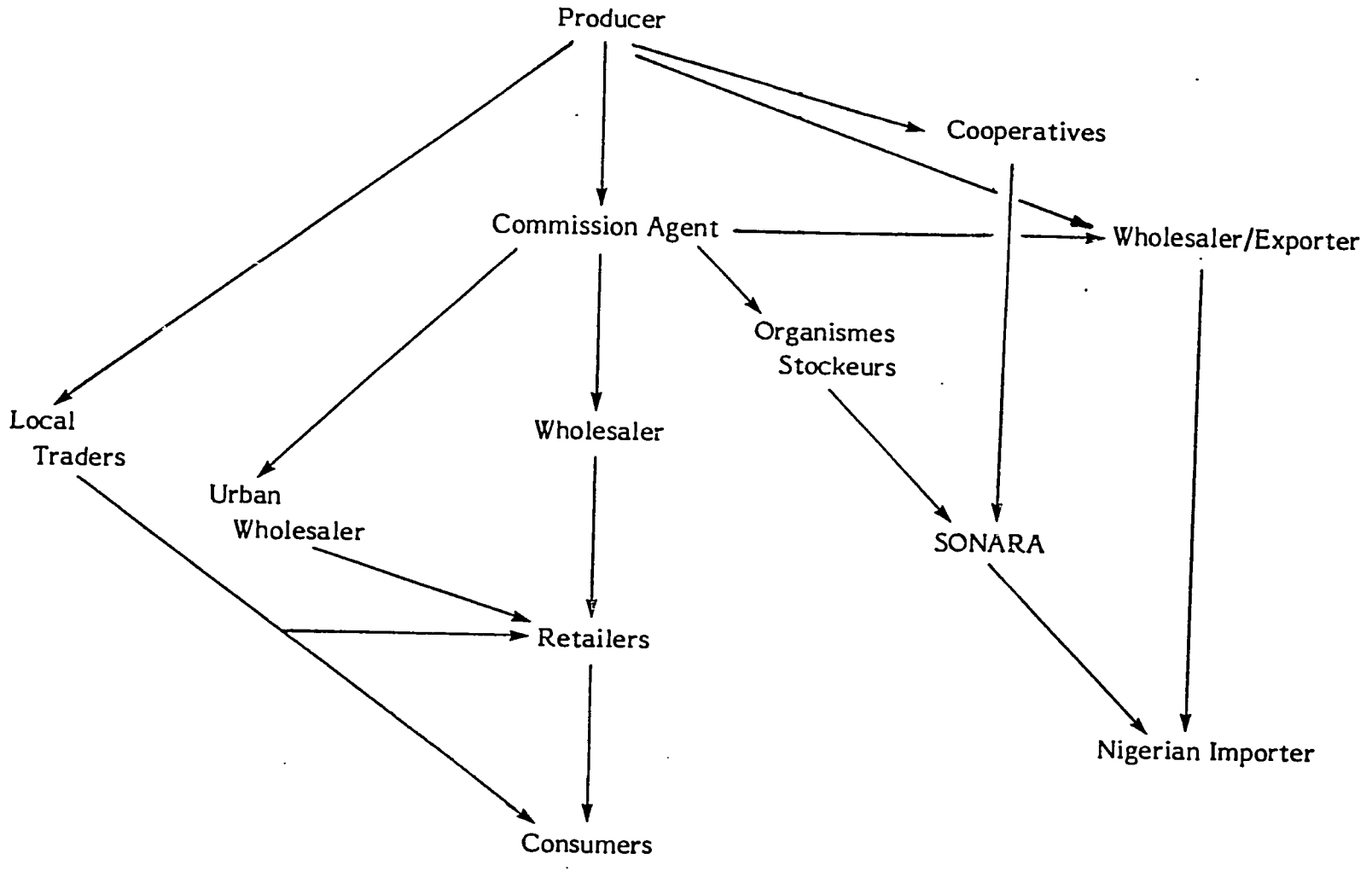
Most farmers interviewed made no attempts to store their cowpea production, citing immediate needs to purchase cereals for family consumption. The tendency not to store is a factor largely of the need for immediate cash, and the susceptibility of stored cowpeas to insect damage. One farmer who stocked his cowpeas for four months until prices rose reported storage losses of about ten percent.

4.2.2 Village Intermediaries: Local Traders/Commission Agents

Local traders reside year around in the production zones and cover their own villages and surrounding areas. They buy small quantities from village farmers. The crop is in some cases purchased, in cash or in kind, well before harvest. These quantities are sold in rural markets to rural retailers or other intermediaries. Some village traders sell directly to consumers from their homes or a stand in the local market.

Due to their knowledge of the production area and their strong ties with producers, local traders are also used by large wholesalers or Nigeria importers to collect cowpeas in villages and local markets. When acting as assemblers, they receive a fixed fee for handling of the product.

Figure 2
Market Distribution Channels for Niger Cowpeas



4.2.3 Wholesaler/Exporters

The wholesaler/exporter marketing channel handles the great majority of Niger exports to Nigeria. These traders purchase cowpeas either directly from producers or through village assemblers (commission agents or local traders) and are responsible for all costs related to product assembly such as transportation, labor and purchase of sacks. The wholesaler/exporter also provides all of the funds necessary for exporting the cowpeas from Niger to Kano, including assembly, loading, transporting, and unloading the cowpeas. In addition, they pay all export taxes and other expenses, i.e. road taxes and bribes ("cadeaux") incurred en route. In some cases Nigeria importers travel to Niger to purchase cowpeas in large quantities from wholesalers in Zinder or Maradi or in small quantities directly from village markets.

The wholesaler/exporter class includes the large, politically influential Niger traders from Maradi and Zinder who received authorization from the prefet to export cowpeas during the period of the SONARA monopoly. These large traders are also able to make "arrangements" with proper authorities so that they pay little if any of the export tax. These politically important large-scale traders earn oligopolistic profits (see section 4.3.2 below).

These traders prefer the continued imposition of the export tax, which acts as a barrier to entry to other would-be wholesaler/exporters who do not possess sufficient capital to finance large-scale cowpea exporting. The key constraint which these medium-sized and smaller traders face is the high cash requirement of the export business. The elimination of the export tax would permit more participation of these traders in the market and would reduce the margins earned by the large exporters.

4.2.4 Wholesalers

Wholesalers in Niger purchase locally large quantities of cowpeas and sell to retailers and other wholesalers. Wholesalers are usually based in urban centers in Niger such as Maradi, Zinder or Niamey. Wholesalers often store cowpeas for four to six months, with attendant additional costs and risks.

4.2.5 Cooperatives

The Union nationale de cooperatives (UNC), formerly the Union nationale de Credit et de la cooperation (UNCC), was created in 1962 with the objective of providing administrative support to cooperatives. A cooperative comprises up to ten Groupements mutualistes villageois (GM). Delegates from the cooperatives form the Union Locale de Cooperatives (ULC). Higher levels of the cooperative structure are the Union sous-regionale de cooperatives (USRC), the Union regionale de cooperatives (UNC). UNC field agents have record-keeping responsibility for credit allocation, input delivery and cooperative marketing.

Cooperatives are licensed to assemble cowpeas on a commission basis for SONARA. However, in addition to organizational, socio-cultural and institutional constraints, the lack of working capital has been a serious limitation on cooperative activity. To induce commercial banks to take a cooperative clientele, USAID has supplied a guarantee deposit at the Banque Internationale pour l'Afrique Occidentale (BIAO) against loans made to cooperatives. Under the ASDG, The National Cooperative Business Association (CLUSA) has been responsible for defining amounts and maturities of the loans and selecting cooperative beneficiaries.

Loans are primarily used to finance cereal marketing campaigns. Once the bank loan is obtained, the money is disbursed to the GMs as a function of what each can deliver. Sales prices are first negotiated with buyers. Purchase prices are set at a level which enables the cooperatives to realize a profit. This profit is then used to purchase inputs or set up a cooperative store, or is deposited at the local bank for future use.

Even though cooperatives' participation in the cowpea trade has been negligible, the possibility exists that they will play a larger role in providing market outlets to members. However, constraints on expanded participation include (1) cooperatives' vulnerability to erratic buying and payment by SONARA, their principal client, and (2) their inability to organize their own export programs or even explore markets outside their immediate area due to lack of physical capital (e.g., trucks and storage facilities) and market expertise.

4.2.6 SONARA

The parastatal SONARA has had a legal monopoly of all secondary cowpea marketing and exporting since 1975. In 1984 the cowpea market was liberalized, theoretically allowing private traders and cooperatives to export cowpeas. In spite of the liberalization of the market, SONARA dominates the official export market. As in the past, cooperatives and private traders (organismes stockeurs) licensed to collect cowpea production for SONARA continue to play a preponderant role. Cooperatives and organismes stockeurs purchase cowpea production from producers at a fixed price, and assemble the production for SONARA, for which they receive a commission of 250 cfa per sack.

4.2.7 Retailers

Retailers, usually found in stalls in market places, sell cowpeas by the "Tiya', a local measure equal to 2.5 kilograms. (In Lagos retailers also sell in small 16 kilogram sacks.) The retail trade is characterized by a multiplicity of actors due to the small amount of capital required to enter the market and the lack of alternative employment opportunities. As retailers do not maintain large volumes of cowpeas, their risks are relatively low.

4.3 Market Performance

4.3.1 Trader Size

In recent years large-scale cowpea exporting has been dominated by a limited number of traders who were able to obtain an authorization from the prefet to export cowpeas to Nigeria during the years of the SONARA monopoly. These export authorizations were extremely difficult to obtain and were made available to only a few politically influential large-scale traders, located mostly in the Zinder and Maradi Departments. Many medium-sized traders once active in the cowpea export market have ceased any (at least large-scale) exporting due to the SONARA monopoly.

Although the cowpea export market has been liberalized since 1984, this change in policy has been little publicized thoughout the country. Many farmers and traders are unaware that they can sell or export freely.

The export tax on cowpeas of 20 cfa/kg or 2000 cfa per 100 kg sack acts as a barrier to entering or reentering the cowpea export trade as medium-sized and smaller traders do not possess the necessary financial resources.

The maintenance of the export tax well suits the larger traders as it restricts the entry of other traders which would heighten the competition and reduce their profit margins (oligopolistic profits).

The informal sector which exports the great majority of Nigerien cowpeas of necessity deals in much smallers quantities. Cowpeas are moved across the border on donkeys, camels or carried on heads. The informal sector includes traders from both Niger and Nigeria.

4.3.2 Marketing Margins

In this section, marketing margins are calculated for traders exporting cowpeas from Niger (Zinder) to Kano.

Profit margins gained by traders exporting through official channels and paying the full tax of 20 cfa/kg are estimated in Table 8. Assuming a post-harvest purchase price of 6000 cfa per sack and a sales price in Kano of 11,000 cfa, the net margin gained is estimated at 11 percent. The export tax comprises more than half (53%) of the total marketing costs.

Most of the politically influential large-scale traders who received a special authorization to export during the SONARA monopoly years, however, do not pay the full tax. Rather they "arrange" to pay a lower tax, such as 5 cfa/kg or none at all. Table 9 presents the costs and returns for a trader shipping a truckload of cowpeas after the harvest who pays a reduced tax of 5 cfa/kg. Net margins are estimated at 25% and rise even higher later in the year when cowpea prices rise.

Marketing margins for traders carrying small quantities of cowpeas across the border an donkeys and camels are too variable to estimate. Within Nigeria, profit margins in May 1988 for such traders were estimated at approximately 17 percent, assuming three months storage.

Thus the export tax which serves as a barrier for entry for many medium-sized and smaller would-be exporters enables a small number of large-scale and influential traders to restrict competition, and yet at the same time "arrange" to earn large profit margins.

Profit margins have also been estimated for cowpeas marketed from wholesalers in Kano to wholesalers in Lagos. These estimates are based on discussions with wholesalers and commission agents in Kano and Sokoto. A more detailed analysis of marketing margins within Nigeria will be presented in the second phase of the study which will include visits to Lagos and other Southern Nigerian cities.

For comparison purposes, costs and returns of moving a truckload of cowpeas from Kano to Lagos in May are estimated in Table 10. Net margins are estimated at 17%.

Table 8
Cost and Returns for 300 Sack Shipment of Cowpeas from Zinder to Kano, Paying Full Tax

Costs	Price Per Sack (cfa)	Total, 300 Sacks[a] (cfa)
1. Purchase Price	6,000	1,800,000
2. Price of Sacks	400	120,000
3. Labor Putting in Sacks	50	15,000
4. Commission to collection agent	250	75,000
5. Transport costs from village to Zinder[b]	350	105,000
6. Export tax	2,000	600,000
7. Transportation Zinder-Kano[b]	500	150,000
8. Other costs	250	75,000
Total costs		2,490,000
Revenues	11,000[c]	3,000,000
Net returns		360,000
Net margin		11%
Export tax as % of marketing expenses (Items 2-8)		53%

a 300 sacks correspond to a full load for a 30 ton truck.

b Transport costs include "cadeaux" or bribes necessary to pass control points.

c The actual price in Kano per 100 kg sack of cowpeas in late February, 1988.

Table 9
Costs and Returns for 300 Sack Shipment of Cowpeas from Zinder to Kano, Paying a Reduced Tax

Costs	Price Per Sack (cfa)	Total, 300 Sacks[a] (cfa)
1. Purchase Price	6,000	1,800,000
2. Price of Sacks	400	120,000
3. Labor-Assembling/Putting in Sacks	50	15,000
4. Commission to collection agent	250	75,000
5. Transport costs from village to Zinder[b]	350	105,000
6. Export tax	2,000	600,000
7. Transportation Zinder-Kano[b]	500	150,000
8. Other costs	250	75,000
Total costs		2,490,000
Revenues	11,000[c]	3,000,000
Net returns		810,000
Net margin		25%
Export tax as % of marketing expenses (Items 2-8)		22%

a 300 sacks correspond to a full load for a 30 ton truck.

b Transport costs include "cadeaux" or bribes necessary to pass control points.

c The actual price in Kano per 100 kg sack of cowpeas in late February, 1988.

Table 10
Costs and Returns for 300 Sack Shipment of Cowpeas from Kano to Lagos in May 1988

Costs	Price Per Sack (cfa)	Total, 300 Sacks[a] (cfa)
1. Purchase Price	11,000	3,300,000
2. Local Government Tax	50	15,000
3. Storage Costs	1,500	450,000
4. Labor: Loading/Unloading	200	60,000
5. Commission Agent EEE	100	30,000
6. Transport	600	180,000
7. Other costs[a]	200	60,000
Total costs		4,095,000
Revenues	16,500	4,950,000
Net returns		855,000
Net margin		17%

a Some wholesalers in Kano state that the sacks of cowpeas coming from Niger are not completely filled, and that additional costs are involved in filling the sacks. This would, of course, lower profit margins.

5. THE COWPEA MARKET IN NIGERIA

Nigeria is the major outlet for cowpea exports from Niger. Nigeria produces an average of 800,000 tons of cowpeas per year, but the major markets in the South (Lagos, Onitsha, Ibadan, Osogho to name just a few) easily absorb all the cowpea exports from Niger. Although a study of the demand in southern Nigeria remains to be undertaken in the second phase of the study, traders in Sokoto and Kano maintain that the market in the south could easily absorb twice as much as is now imported from Niger.

5.1 Cowpea Production

Although cowpeas are produced in nearly every state of Nigeria, the principal producing zones are in the North, especially in Kano, Sokoto, and Borno States, where the climate is most favorable to production. (See Figure 3 for a map of major producing areas.) As in Niger, cowpeas are intercropped with cereals. In Northern Nigeria cowpeas are the third most important crop in terms of total production after millet and sorghum. Average yields are low, less than 300 kgs per hectare.

Nigeria cowpea production averages 800,000 tons annually. Table 11 below presents cowpea production for Sokoto and Kano states, which together account for 40 to 50 percent of Nigeria's annual production.

The production season for cowpeas in Northern Nigeria the same as in Niger. Dry season cowpea production is undertaken on perimeters irrigated by the Sokoto-Rima River Basin and Rural Authority, and in Kano State, but remains a minimal part of total production.

The monthly retail price data for Kano shown in Table 12 demonstrate the typical low prices which prevailed in the post-harvest period of January to March, 1987. The substantially higher prices recorded in 1988 are due to the relative scarcity of cowpeas due to lower production levels in a low-rainfall agricultural season.

Figure 3

Map Showing Cowpea Production Zones in Nigeria

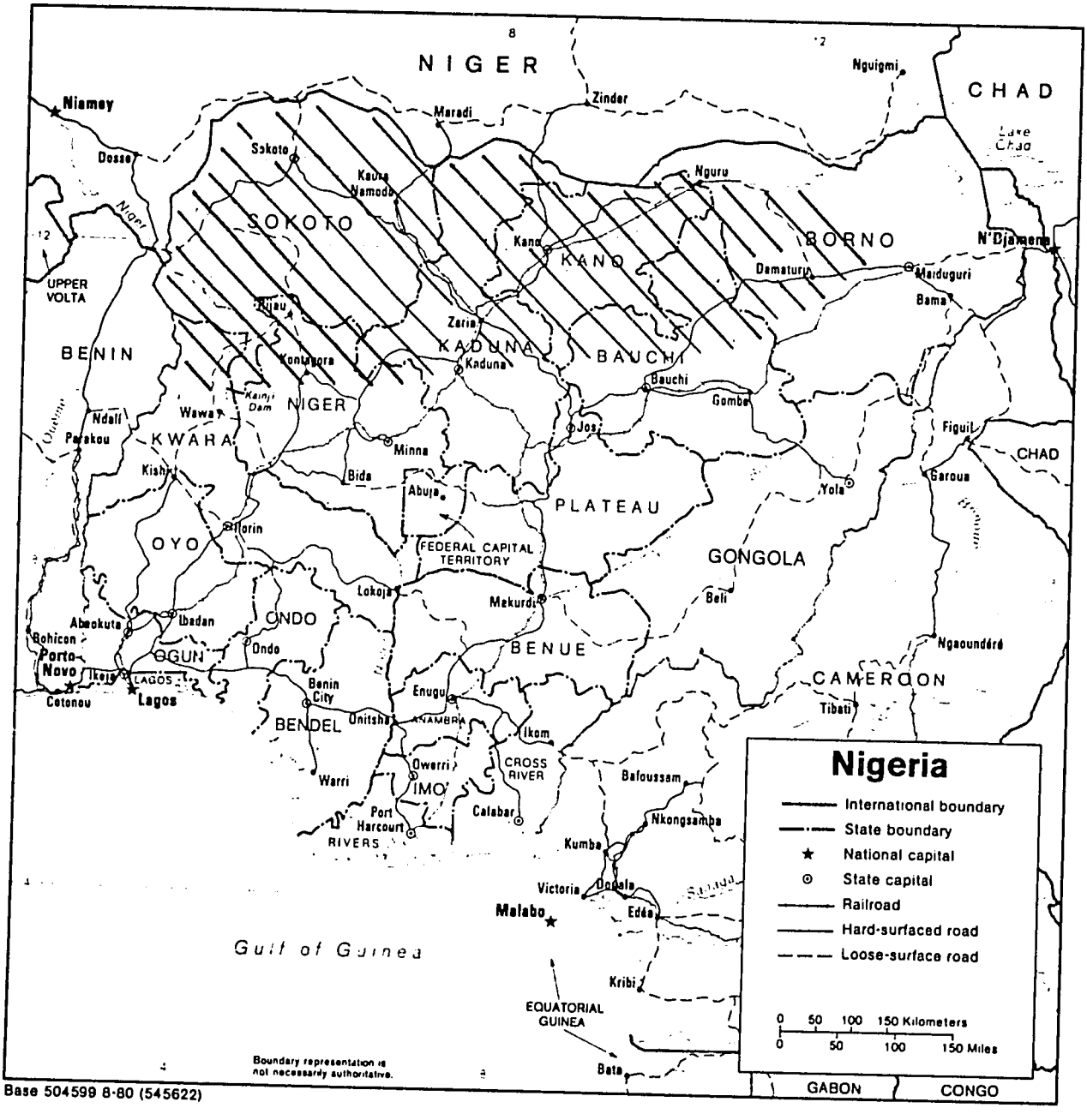


Table 11
Cowpea Production in Kano and Sokoto States, Nigeria, 1980-1987
(tons)

	Kano	Sokoto
1980	NA	197,000
1981	NA	203,000
1982	200,000	143,728
1983	388,000	129,000
1984	426,000	52,500
1985	400,000	NA
1986	105,000	NA
1987	253,000	102,000

NA = Not available

Sources: Kano State Agricultural and Rural Development Authority, Kano State, Nigeria, and the Planning and Monitoring Office, State Secretariat for Agriculture, Sokoto State, Nigeria.

5.2 Cowpea Prices

Partial monthly retail price data is shown below in Table 13. The prices indicated are an average of red and white bean prices. Consumer tastes vary from city to city in the south, but Lagos consumers prefer the larger red bean variety.

Comparative cowpea prices for the farm level, and for Zinder, Kano, and Lagos are presented in Table 14. Although the average retail price for Kano cited for January 1988 is based only on partial data, it clearly supports the statements of Kano cowpea wholesalers that Niger cowpeas are not competitive in the Kano (Nigeria) market until February or March.

Table 12
Cowpea Monthly Retail Prices in Kano, 1987-88
(in CFA/KG)

	1987	1988
January	82	136
February	84	157*
March	90	179*
April	100	175*
May	102	180*
June	107	
July	120	
August	132	
September	112	
October	109	
November	109	
December	111	

* Figures based on incomplete survey data.

Source: Kano State Agricultural and Rural Development Authority, Planning and Community Development Department, 1987-1988.

5.3 The Marketing System

The marketing system for cowpeas in Nigeria flows from north to south. Major collection points are in Kano and Sokoto in the North. Figure 4 presents the dominant market channel for Niger cowpea exports. Cowpeas are imported from Niger by importers or importer/wholesalers in Kano and Kaduna, who then sell them to wholesalers in the north (mostly in Kano and Sokoto) where commission agents of the large southern wholesalers reside. The commission agents negotiate purchase of the cowpeas for their patrons in the south. The cowpeas are then transported to such southern cities as Lagos, Onitsha, Ibadan, and Osogbo, where they are sold to retailers and then to consumers.

Table 13
Average Monthly Retail Prices for Cowpeas in Lagos in 1987 and 1988

	1987	1988
January	160	192
May	--	198 (white) 228 (red)
July	160	
October	161	
December	225	

Note: Prices are an average of all bean varieties, including red and white, except for May 1988.

Source: USAID Mission/Lagos, Nigeria, and the Concord newspaper, Lagos, May 13, 1988.

Table 14
Cowpea Prices at the Farm Level, and in Zinder, Kano and Lagos

	Dec 87	Jan 88	May 88
Farm Level	60	--	--
Zinder[a]	--	130	150
Kano[b]	111	136[c]	180
Lagos[b]	225	192	198 (white) 228 (red)

[a] Prices cited are wholesale prices

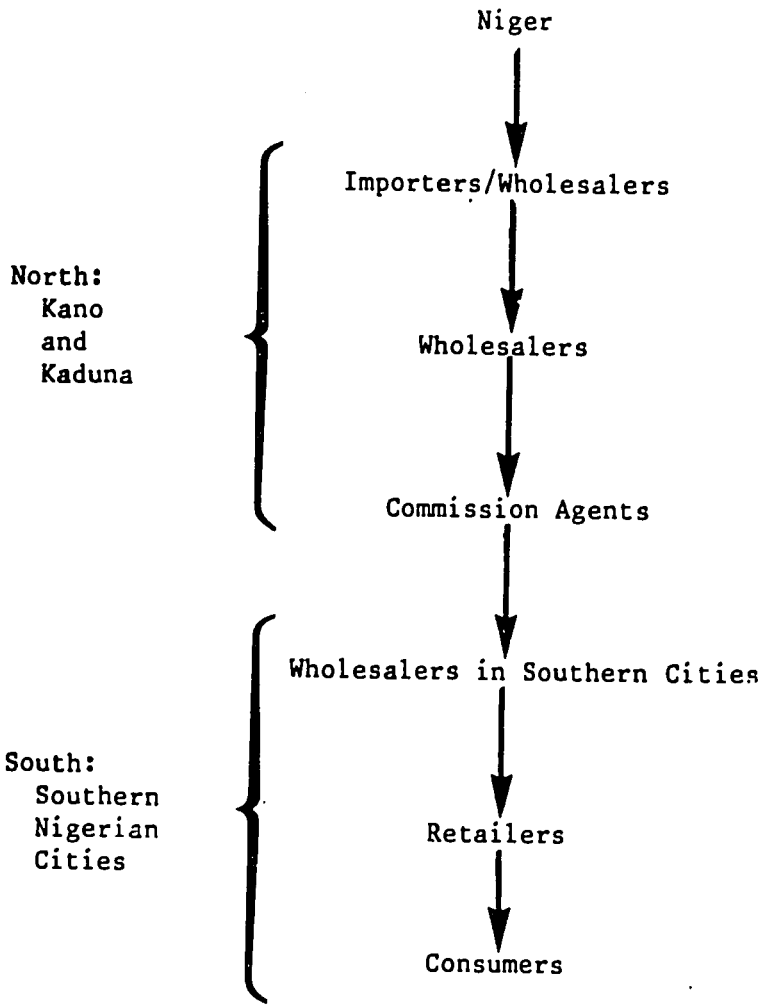
[b] Prices cited are retail prices

[c] Based on partial survey data.

Note: Prices are an average for all varieties except in Lagos in May 1988

Sources: Present survey; Kano State Agricultural and Rural Development Authority, Kano State, Nigeria; USAID Mission, Lagos, Nigeria; and Concord newspaper, Lagos, May 15, 1988.

Figure 4
Market Distribution Channel for
Niger Cowpeas in Nigeria



5.3.1 Importers/Wholesalers

Only two major firms have authority to import cowpeas from Niger: NAMCO and OSCUDA, both based in Kaduna (although NAMCO has offices in Kano). The importer/wholesaler imports cowpeas from Niger and then sells them to other wholesalers in Kano, Sokoto, or other Northern Nigerian cowpea assembly points. Kano is the major assembly point; the great majority of Niger cowpeas pass through Kano on their way south.

Transport is either arranged by the Niger exporter or by wholesalers from Kano who have pre-arranged to buy the cowpeas through NAMCO or OSCUDA. In the latter case the cowpea imports never physically pass through the hands of the major importers, although all import forms and authorizations are in their name.

Unfortunately it was impossible to interview the NAMCO authorities in Kano as the director was in Mecca. An analysis of the importers, their role and the margins earned will be indicated in the second phase of the study.

5.3.2 Wholesalers (Northern Nigeria)

Wholesalers in Kano and Sokoto purchase cowpeas from the major importing house who have warehouses in Kano or they travel to Niger and handle the transport themselves. Many wholesalers buy more than 2000 tons of Niger cowpeas per year. There is considerable competition among the numerous wholesalers.

In Kano, the major traders are located in the wholesale market, Dawano, which is located nine kilometers from the center of the town. There, in storerooms with mudbrick walls and corrugated iron roofs the traders meet with commission agents to negotiate sales of cowpeas to southern wholesalers. Cowpeas are not generally stored in Kano for longer than three to four months as the government authorities are very strict about any hoarding of foodstuffs. A local government tax of 1 Naira (50 cfa) for every sack sold is paid by the wholesaler and collected by local government agents who are stationed in the market.

Before the imposition of import restrictions, many wholesalers travelled to Niger to purchase cowpeas and import them to Nigeria.

5.3.3 Commission Agents

Commission agents living in Kano negotiate sales between wholesalers in the north and south. Each commission agent represents several wholesalers from Southern Nigeria. Trading is usually along ethnic lines as Ibo agents represent Ibo traders and Yoruba agents represent Yoruba traders. Traders from the south feel more comfortable dealing with a commission agent who

speaks his own language. The relationship between commission agent and southern trader is a close one; indeed it is often referred to as a patron-client relationship ("maigida"). For his services of price negotiation and facilitation the agent receives 2 Naira per sack.

5.3.4 Wholesalers (Southern Nigeria)

Many wholesalers from Southern Nigeria travel to the north (usually to Kano) to purchase cowpeas. All price negotiation is done through representatives in the North who act as commission agents. All transport and related costs (see Section 4.3.) are paid by the wholesaler. Wholesalers sell the cowpeas to retailers or other wholesalers in the south. Among the most important buyers from Lagos are El Hadji Yahaya Ali, who is chairman of the Iddo wholesale market in Lagos, and El Hadji I.T. Chabola.

5.3.5 Retailers

Retailers in the south sell cowpeas in "tija" (2.5 kilogram containers) or in small 16 kg. sacks in open air markets or in boutiques which sell a mixture of food and non-food products.

6. THE COWPEA MARKET IN BENIN

The terms of reference for the present study included an examination of the cowpea market in Benin as it was felt that this might constitute an important market for Niger cowpeas. As will be seen in the following sections, trade restrictions imposed by Benin have sharply restricted trade with Niger, and in any case there is limited demand for imported cowpeas.

6.1 Cowpea Production

Major food crops produced in Benin are maize, cassava, igname and millet. Cowpea production was approximately 35,000 tons in 1987 and averaged 39,000 tons over the last four years. With the exception of 1987, when rainfall was below average in the northern regions, yields have increased from 400 to 500 kg/ha in recent years (Table 15).

Cowpeas are produced in the Borgou and Atacora Provinces (see map in Figure 5) once a year during the rainy season between May and October. As shown in Table 16, the southern provinces provide the bulk of cowpea production; farmers in these provinces produce two crops, one during the long rainy season between April and July and one during the shorter rainy season between October and November. Supplies are shortest in the April-May and August-October periods. The monthly retail price list presented in Table 17 reflects these supply conditions. During these periods, cowpea prices in Niger are approximately half those prevailing in Cotonou.

6.2 Cowpea Consumption

Results of a consumption study conducted by the National Institute of Statistics and Economic Analysis were not yet available at the time of this rapid appraisal. Consumption patterns suggest, according to knowledgeable observers, that per capita cowpea consumption in Benin is much higher in urban than in rural areas. This is the reverse of the situation in Niger.

Table 15
Cowpeas in Benin: Area, Yield and Production, 1980-1987

	1980	1981	1982	1983	1984	1985	1986	1987
Area (000 ha)	62	68	72	74	80	78	81	87
Yield (kg/ha)	458	409	404	387	530	501	499	401
Production (000 tons)	285	28	29	285	425	39	40	35

Source: Data provided by the Institut national de la statistique et de l'analyse économique, Cotonou, Benin.

Table 16
Cowpea Production in Benin by Region and Province

Region or Province	Percentage of Total Production
North	35.4
Borgou	21
Antacora	14.4
South	64.6
Zou	27.7
Mono	13.1
Atlantique	5.1
Oueme	18.7

Source: Data provided by the Institute National de la statistique et de l'analyse économique, Cotonou, Benin.

Figure 5: Map Showing Cowpea Production Zones in Benin

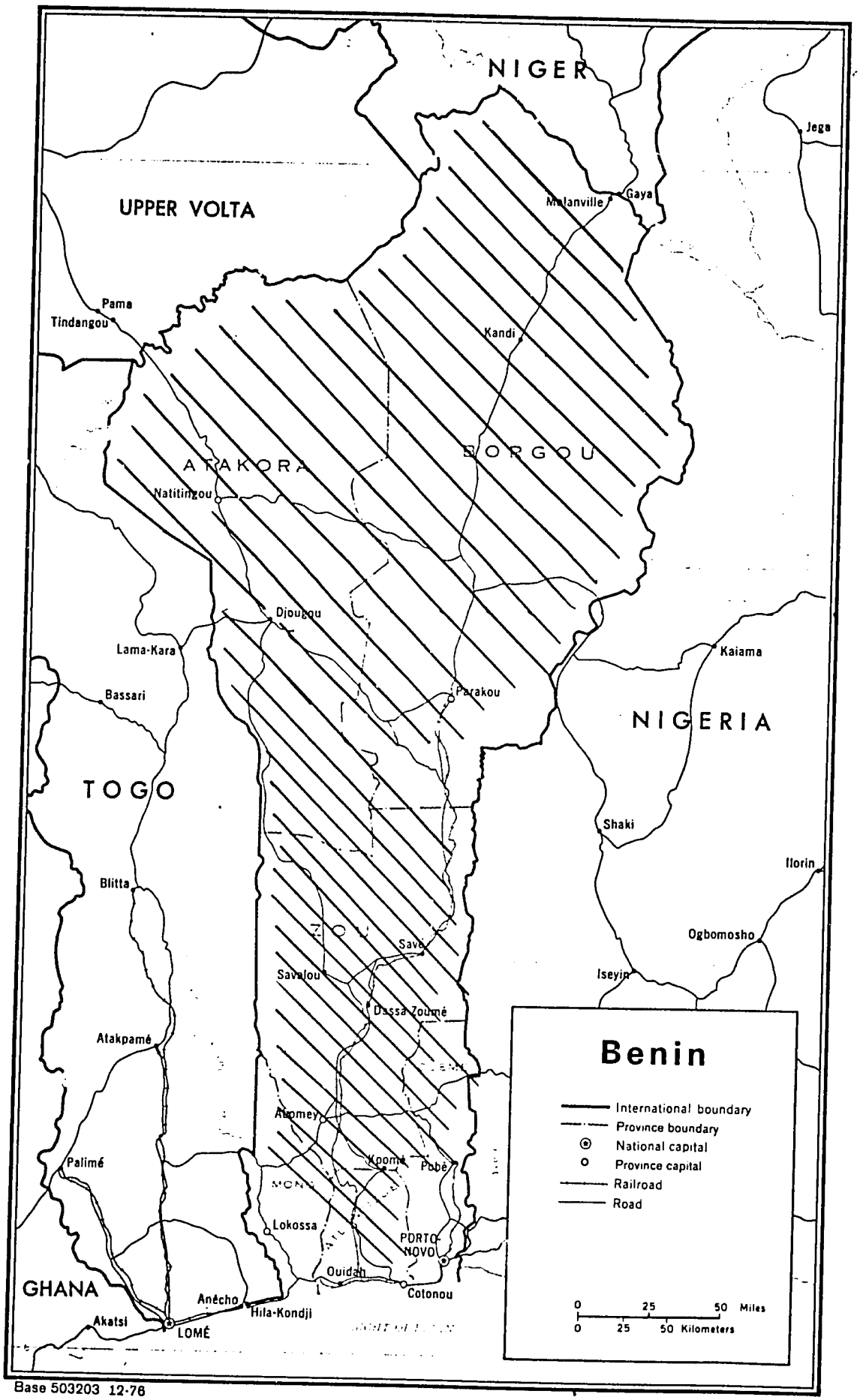


Table 17
Cowpea[a] Monthly Retail Prices in Cotonou, 1986-1988
(cfa/kg)[b]

	1986	1987	1988
January	257	184	237
February	250	198	237
March	224	237	237
April	263	258	253
May	263	263	263
June	NA	174	
July	NA	184	
August	274	219	
September	263	211	
October	263	211	
November	237	158	
December	211	145	

NA = Not available

a These prices are for the "white" variety, the most prevalent in Niger markets.

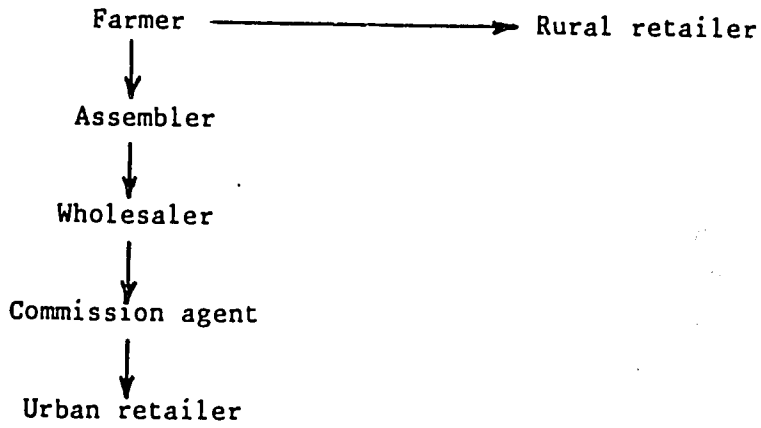
b Prices shown have been converted to a per kilogram basis from the standard "tohoungola" measure which is equivalent to 0.95 kg.

Source: Direction de l'homologation des prix, Ministère du commerce, de l'artisanat et du tourisme, Cotonou, Benin.

There are three main cowpea varieties: red, black and white cowpeas. Urban demand is highest for the white variety. Not only is this variety tastier and less demanding in cooking time, but it is also used to make Ata, a highly popular local doughnut.

6.3 The Marketing System

The cowpea marketing chain is dominated by women traders. As shown in the diagram below, cowpea surpluses are channelled from rural areas to local urban centers by small-scale assemblers, then shipped to larger cities. These quantities are stored by large-scale wholesalers and sold to retailers, one to several bags at a time, through commission agents. In the retail markets, cowpeas are sold in tohoungolos or 0.95-kg units. Cotonou and Porto-Novo, with 37 and 15 percent respectively of the country's total urban population, represent the two major cowpea markets.



6.4 Effects of Government Interventions on Cowpea Trade

Due to food security concerns, exports of cowpeas from Benin were, prior to 1986, prohibited by law. A 14 percent export tax has been in effect since 1986. Exporters must, in addition, apply for an permit before each transaction and this application is in most cases rejected.

Imports amounted to 54, 62 and 322 tons in 1981, 1982 and 1983 respectively. These quantities were non-local, larger-bean varieties imported in small packages from France, England, Spain, Ivory Coast and the U.S.

Although data for 1984-1987 are not available, there is no reason to believe that imports were substantially higher during these four years, particularly after 1986 when a proxibitive tax rate was applied to cowpea imports.

As indicated in the table below there are three different taxes on cowpea imports: an import tax, a taxe à la consommation locale or local consumption tax, and a taxe d'expertise or "expertise" tax. Translated into percentage terms and using May 1988 prices in Niger as an example, these taxes amount to a rate of more than 63% of purchase price. Not surprisingly, imports of cowpeas from neighboring countries have been almost nonexistent in the last three years. Data provided by customs show that only 295 kg of cowpeas have been imported from these countries since January 1986. These quantities were imported from Nigeria (285 kg) and Togo (10 kg).

Table 18
Taxes on Cowpea Imports in Benin

Tax	Rate or Amount
Import tax	13% of Value
Local consumption tax	75 CFA/kg
Expertise tax	50 CFA/ton

During three different visits to the Dan Tokpa wholesale market in Cotonou only six 100-kg bags of Nigerien cowpeas were found. Although the owner was not available for an interview, her commission agent revealed that these quantities had crossed the Niger-Benin border through unofficial channels to Malenville where they were shipped to Cotonou.

The absence of Niger cowpeas in Cotonou is not surprising. Tables 19 and 20 demonstrate that cowpea trade between Niger and Benin, whether undertaken through official or unofficial channels, is not a rewarding enterprise. An examination of Table 19 shows that exporters venturing into legal cowpea trade between Niamey and Cotonou would indeed incur heavy losses. These losses would amount to approximately 70,000 cfa per ton or more than 2 million cfa for a 30-ton truckload.

Table 19
Costs and Returns for a 100-kg Sack Shipment of Cowpeas from Niamey to Cotonou Through Official Channels in Benin

	Unit Cost (cfa)	Total Cost (cfa)
Costs		
Purchase price		15,000
Loading		50
Transport	18,920 CFA/T	1,812
Export tax (Niger)	20 CFA/kg	2,000
Import Tax (Benin)	13% of value	1,950
"Local consumption Tax" (Benin)	75 CFA/kg	7,500
"Expertise tax" (Benin)	50 CFA/ton	5
Unloading and loading at Railway Station		300
Transport from Railway Station to the Dan Tokpa Wholesale Market		60
Unloading		150
Total Costs		28,835
Sales Price		22,000
Net Returns (Losses)		(6,835)
Export tax as % of marketing expenses		15%

Source: Present Survey. Data collected May 1988.

Unofficial or clandestine trade provides a second alternative to importers. However, traders who follow unofficial channels once they arrive with the commodity in Benin would only break even or make a very small profit (Table 20). This outcome is a result of the various cadeaux or bribes that must be given to pass the numerous control points when import and other taxes are not paid. Note that the Niger export tax constraint is the controlling factor in the unofficial trade alternative. Removal of the tax would result in a net return of approximately 2,100 cfa per ton exported or 10 percent of total costs. This profit margin is roughly equal to the export tax itself.

Table 20
Costs and Returns for a 100-kg Sack Shipment of Cowpeas from Niamey to Cotonou Through Unofficial Channels in Benin

Item	100 Kg Sack Unit Cost (cfa)	% of Marketing Margin	100 Kg Sack Total (cfa)
Costs			
Purchase price			15,000
Loading			50
Transport	17,000/ton[a]	24.6	1.700
Export tax (Niger)	20/kg	29	2,000
Miscellaneous[b]		43.5	3,000
Unloading			150
Total Costs			21,900
Returns			
Sales price			22,000
Net returns			100
Net returns without the export tax			2,100
Export tax as % of marketing expenses			29%

a Fees charged by private transporters are lower than those charged by the Organisation commune du Benin et du Niger, OCBN (see Table 19).

b Represents cadeaux or bribes to pass control points in Benin when import and other taxes are not paid.

Source: Present Survey. Data collected May, 1988.

It is important to point out that even under the assumption of free trade, the Benin cowpea market has limited potential for Niger exporters. Benin is a small country with less than 4 million inhabitants, a low GNP per capita (less than $300) and a low degree of urbanization. In addition, local cowpea production is relatively substantial and has been increasing.

The virtual absence of trade between Niger and Benin is explained by the high marketing costs illustrated above. Foremost among these costs are the prohibitive taxes imposed on cowpea imports. Nonetheless, some additional trade might occur if the Niger export tax were removed. The fact that this tax has not generated any revenue at the Niger-Benin border for many years provides an additional argument for its removal.

7. GOVERNMENT INTERVENTION IN THE COWPEA MARKET

7.1 The Policy Environment

In 1975 the government of Niger legislated a marketing monopoly of the cowpea sector. Responsibility was given to an existing parastatal, SONARA. This monopoly was rescinded in 1984, though SONARA still engages in marketing activities.

SONARA's initial functions after its creation in 1962 concerned the marketing of peanuts. But beginning in the early 70's, peanut production and exports declined sharply and by 1975 cowpeas had become the principal export crop. Although enjoying a monopoly of cowpea exporting from 1975 to 1984, SONARA accounted for only a small percentage of actual exports. Most such exports were channeled through the informal sector, in large part due to the low prices offered by SONARA. The prevailing open market price for cowpeas between 1976 and 1983 was nearly double the official price offered by SONARA.[1]

SONARA was responsible for "secondary" cowpea marketing, buying from collection agents (organismes stockeurs) and cooperatives who were licensed to collect cowpeas in rural areas. SONARA simply did not have the expertise to collect the crop and therefore relied upon these agents who received a commission for their services.

Unlike other parastatals involved in agriculture, such as the CFDT (Compagnie Francaise de Developpement des Textiles) which was involved in cotton marketing, SONARA does not provide technical advice or seeds and other inputs on credit to producers. It is therefore not surprising to note that cowpea production has stagnated since the imposition of the SONARA monopoly.

In 1984, the SONARA monopoly was rescinded by the Niger government (Statute No. 050 MCT/DCI/MDR) to allow private traders and cooperatives to export cowpeas. However official cowpea exporting is still dominated by large, politically influential traders (see discussion in Section 3.4) and SONARA. Many of the smaller traders who had participated in the cowpea export market have not re-entered the market. This is in large part due to the high

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1 Regis Mitjavile, Diagnostic de la SONARA, Etude IDA/OSEM, December 1983.

cash requirements required to undertake exporting. Elimination of the export tax will greatly reduce these requirements (see following section).

7.2 The Export Tax

This section focuses on the export tax and explores its effects on the Niger cowpea economy. A graphic representation is used to quantify the effect of the tax on both official and unofficial trade.

7.2.1. Effects on Official Trade

The impact of the export tax on official trade in cowpeas is illustrated in Figure 6. ES represents export or excess supply and ED represents export or foreign demand. Q* and P* are equilibrium quantities and prices in the absence of the tax.[1] Imposition of the export tax drives a wedge between producer and consumer prices, causing producer prices to fall to PP and prices in the foreign market to increase to Pf. The difference between Pp and Pf is equal to the unit tax.

Positive Effects

Revenue generation: Government revenues are represented by area a+b. These revenues are equal to the per unit tax, T times Qt, or the quantities exported after imposition of the tax.

Extracting rent from foreign consumers: Some of these revenues (area a) are extracted from foreign consumers. Area a is a function of export demand elasticity or the responsiveness of foreign consumers to the price increase resulting from the export tax.

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1 This simplified representation assumes that the export tax is the only transaction cost separating supply and demand. Inclusion of other costs would not affect the final results.

Figure 6: Effects of the Export Tax on Official Trade

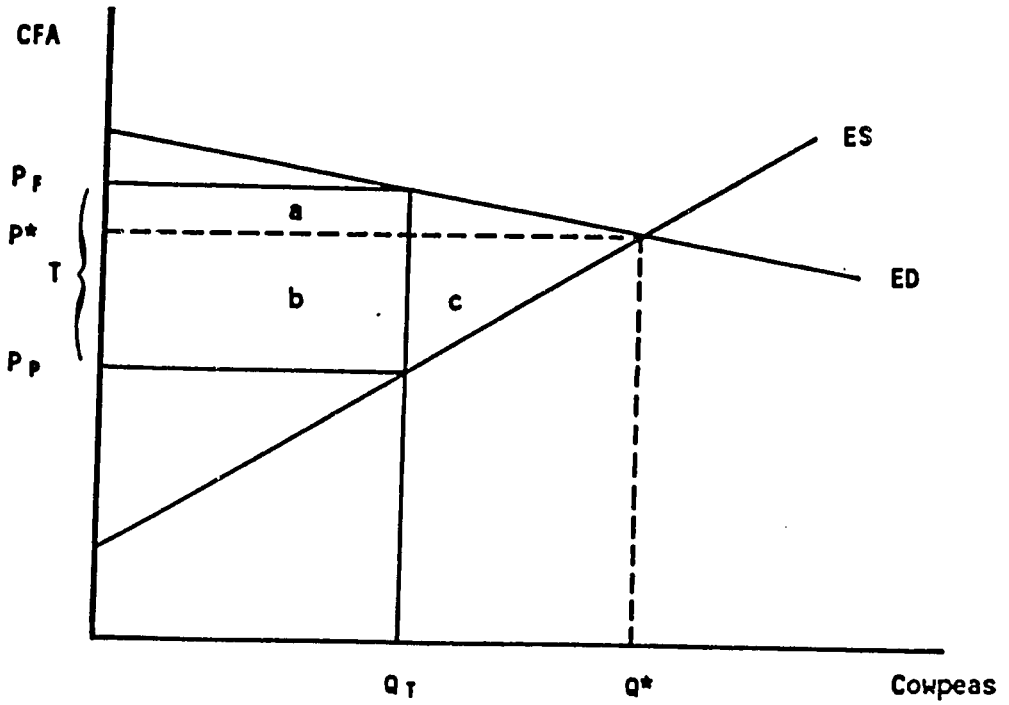
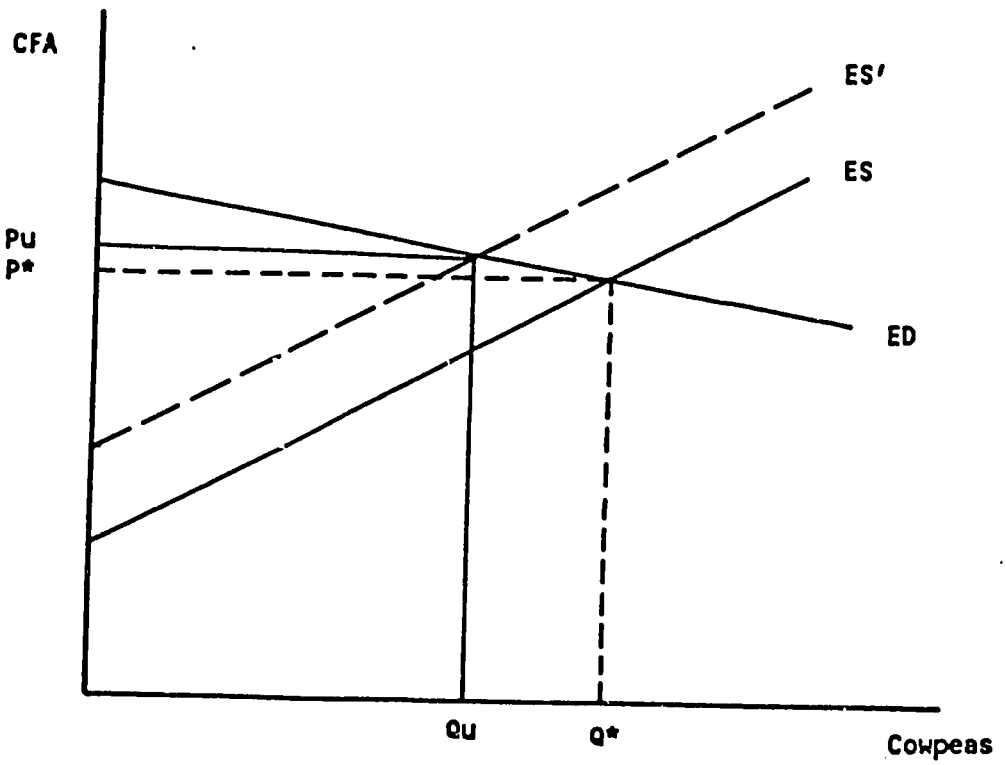


Figure 7: Effects of the Export Tax on Unofficial Trade



Negative Effects

Reduced exports: Exports are reduced by an amount equal to Q*-Qt.

Fall in production: Not allowing for seeds and storage losses, production is equal to local consumption plus exports. A decrease in exports will be accompanied, ceteris paribus, by a decrease in production. Total loss to producers is equal to area b+c, of which area b is a contribution to government revenue and area c is a loss generated by the reduction in export volumes.

Reduced income for traders: Even though losses incurred by traders are not shown in the diagram, they can be easily conceptualized as equal to the amount by which exports are reduced following the tax times the per unit net returns from cowpea exports.

7.2.2 Effects on Unofficial Trade

Analysis of the export market through unofficial channels has similar effects on exports, production and traders' income. These effects are illustrated in Figure 7.

As in Figure 6, ED and ES are export demand and export supply, respectively. The various costs and risks associated with illegal trade cause ES to shift upwards to ES'. This shift increases the price of Nigerien cowpeas in importing countries from P* to Pu. The price increase reduces the export volume from Q* to Qu. The effects of decreased exports on producers and traders are similar to those described in Figure 5.

7.2.3 Benefits of the Export Tax

The tax on cowpea exports has two main objectives: extracting rent from foreign consumers, and raising revenue. These two objectives will be examined in turn.

Taxing Foreign Consumers. Foreign consumers generally share the burden of the export tax. Their share is determined by their responsiveness to

changes in the price of the imported commodity. Available data did not allow estimation of price elasticity of demand for cowpeas in Nigeria, the major market for Niger exports. However, qualitative evidence suggests that this demand is price elastic. Based on this evidence, rents extracted from Nigeria consumers are most likely insignificant.

Raising Revenue: Revenues generated by the tax are equal to the per unit tax times quantities exported. As indicated in Table 21, revenues from cowpea exports averaged approximately 380 million cfa between 1982 and 1987. The export tax on cowpeas constitutes the main source (65 percent) of government revenue derived from agropastoral export taxes.

7.2.4 Costs of the Export Tax

The tax raises the cost of cowpea trade whether the product is exported legally or through unofficial channels. The contribution of the export tax to higher costs in the official trade is substantial. As explained in Chapters 4 and 6, the export tax paid can be as high as 53 percent of total marketing expenses.

Marketing costs incurred by unofficial traders are also higher with than without the tax. The differential reflects the cost of eluding the tax. In effect, trade willfully unrecorded in customs records is often associated with illicit payments for false-invoicing services. Smuggling is subject to severe penalties including confiscation of merchandise. In addition, driving small quantities of cowpeas on trails to avoid detection is more expensive and more time-consuming than trucking the commodity over the border along paved roads.

Higher marketing costs raise Niger cowpea prices in foreign markets. higher prices reduce competitiveness and, therefore, the volume of exports. The magnitude of this decline is most likely significant due to the high price elasticity of Nigerian demand. This effect is even more significant in the long run; higher prices for Niger exports will stimulate cowpea production in Nigeria. Increased foreign production will lead, over time, to further erosion of Niger exports.

Table 21
Tax Receipts from Cowpea Exports

Cowpea Exports[a]	19,000 tons
Tax rate	20 cfa/kg.
Tax receipts from cowpea exports	380 million cfa
Total tax receipts from agropastoral products[b]	583 million cfa
Cowpea taxes as % of tax on agropastoral products	65%
Total government tax revenues[c]	61,720 million cfa
Cowpea taxes as % of total tax revenue	0.6%

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a From Table 7

b Average for 1982-1987. From Table 3 in Analysis of the Impact of Export Taxes on the Export of Agropastoral Products, Roger Poulin, et al, DAI, Feb. 1988.

c Average government revenue, 1982-1987. Calculated from Poulin, op cit.

The export tax may also be an obstacle to economies of scale in trade. As explained in Chapter II, unofficial traders move most cowpea exports. Trade through illegal channels is likely to reduce the scale of individual transactions and preclude more efficient export initiatives. Trading at optimal capacity is also reduced by illegal traders' inability to use letters of credit with large Nigeria importers or open credit lines to finance illegal transactions.

The increased profit margin from large-scale operation would potentially lead to increased competition between traders and higher marketing efficiency. Improved marketing efficiency together with higher demand from rising exports would increase prices to farmers. A shift in relative prices would lead producers to allocate more of their resources to cowpea production. Marginal lands would be put back into production, new lands would be developed and more intensive and improved farming practices would be used.

The non-economic costs of the export tax are equally high. The case of cowpeas in Niger demonstrates that excess supply must spill over, legally if possible, illegally if necessary. This situation has created a harmful second-best alternative. By encouraging lawlessness and providing opportunity for corruption, the unofficial trade alternative may have caused heavy non-economic losses.

7.2.5 Conclusions

A strong rationale exists for removing the export tax on cowpeas in Niger. Given the demand conditions in Nigeria, only modest rent can be extracted from consumers in this foreign country. Revenue generated by the export tax is limited. Furthermore, removal of the export tax would result in a substantial increase in official exports and, consequently, more economic activity subject to direct taxation. This process would, in the long run offset the revenue lost from elimination of the tax.

The export tax has, to a degree, contributed to closing off the export market in Benin and has reduced competitiveness of Niger exports to Nigeria. Removing the export tax has the potential to induce an expansion in cowpea exports in the short run. This expansion would be more significant in the longer run; removal of the tax would reverse the signal sent to Nigeria

farmers to increase production, and enhance the current market leadership that Niger enjoys.

Elimination of the export tax could well encourage unofficial traders to conduct more efficient, larger-scale transactions. Economies of scale together with higher demand from rising export would stimulate local production and encourage adoption of better farming practices.

Equally important, elimination of the tax would discourage lawlessness and remove the incentives to engage in illegal rent-seeking activities. Niger's long term development strategy has increasingly aimed at removing market imperfections and adopting policy reforms that promote exports in line with the country's comparative advantage. Elimination of the export tax would be a step towards achieving this goal.

8. RECOMMENDATIONS AND FUTURE RESEARCH

8.1 Remove the Export Tax

The export tax on cowpeas has contributed to closing the export market in Benin and reduced the competitiveness of Niger cowpeas in Nigeria. Removing the tax would enhance the current market leadership that Niger enjoys by inducing an increase in cowpea exports in the short run and a further expansion in the longer run. Elimination of the tax would heighten competition as many more traders enter the official market, thereby reducing the oligopolistic profit enjoyed by the few traders operating in the formal sector. Elimination of the tax would also allow unofficial traders to conduct more efficient, larger-scale transactions. Finally, the likely increase in official exports would offset the modest revenue lost from elimination of the tax by generating more economic activity subject to direct taxation.

8.2 Continue Liberalization of the Cowpea Market

Niger's long-term development strategy has increasingly aimed at removing market imperfections and adopting policy reforms that promote exports in line with the country's comparative advantage. Elimination of SONARA's monopoly on cowpea exports was a step in this direction, although the decision was insufficiently publicized by the government. Many farmers and traders were either unaware of the decision or if aware, did not believe it was true. Further progress can be made by (1) reducing control on the movement of goods between the production areas and consumption centers in Niger and Northern Nigeria, and (2) easing the selective export licensing procedures.

8.3 Initiate Bilateral Trade Negotiations with Nigeria

Cowpea imports from Niger are currently the exclusive right of two large Nigeria firms. High-level, bilateral negotiations might lead to an easing of this restriction and enhance Niger traders' bargaining power by opening the market to a wider range of contacts.

8.4 Conduct An In-Depth Study of the Marketing System for Cowpeas in Nigeria

Marketing efficiency is largely determined by market knowledge. Cowpea exports in Niger represent more than two thirds of total cowpea production. Exports are and will, most likely, continue to be channeled exclusively to Northern Nigeria. In-depth analysis of the Nigeria marketing system is, therefore, a prerequisite to a more efficient export strategy. A Rapid Appraisal of the cowpea subsector within Nigeria would enable the Government of Niger to ascertain the potential for increasing cowpea exports to Nigeria.

8.5 Evaluate the Cost-Effectiveness of the New Technologies Proposed by Agricultural Research

The new technologies currently being tested by ICRISAT, INRAN (Farming Systems Unit), and the Agricultural Production Support Project (APS) need to be evaluated at the farm level in order to ascertain their cost-effectiveness for farmers. The evaluation of agricultural technical packages undertaken by USAID/Niger in 1983 needs to be updated to take into account the cost of hired labor, as wages for laborers engaged at peak periods during the main agricultural season constitute a major production cost. The 1983 study concluded that partial or full adoption of the improved technical package for cowpeas was economically beneficial for farmers; a major assumption of the analyses undertaken, however, was that no additional labor was necessary.

8.6 Further Research on Farmer Decision-Making vis-a-vis Cowpea Production and Marketing

Further research on farmer decision-making concerning cowpea production and marketing is justified due to the major role played by cowpeas in the Niger rural economy. As the major (and often only) cash crop, cowpeas fuel the engine of the rural sector and finance both on-farm and nonagricultural activities.

Farm level research is needed to determine the extent to which farmers are responsive to changes in cowpea prices, and more generally to understand how resources are allocated by the farmer. Further information is also needed on farmer decision-making regarding marketing, storage, or consumption of cowpeas.

8.7. Increase the Availability of Cowpea Market Information

Cowpea market information has traditionally been available only to larger traders who receive information by telephone or through contacts with their agent network. Their knowledge of prices and quantities of cowpeas allows them to benefit from marginal price differences in different locations.

The majority of cowpea producers, however, receive only localized price information after transporting their cowpeas to market where they usually decide to sell at the price offered. Those producers living close to the Nigerian border listen to radio broadcasts in Hausa from Nigeria, and may make decisions based on the situation in Nigeria.

The increased availability of information regarding cowpea prices and quantities observed in different markets, disseminated through weekly radio broadcasts throughout the major producing zones in Niger would allow producers to make better informed production and marketing decisions.

APPENDICES

Appendix A
Niger Cowpea Areas Yields and Production 1960-1986

Year	Area (in hectares)	Yield (in kgs/ha)	Production (in 000 tons)
1960	363,800	120	43,685
1961	404,700	112	45,490
1962	454,000	126	57,350
1963	482,000	131	63,301
1964	423,100	141	59,450
1965	432,200	109	47,320
1966	605,000	112	67,595
1967	669,950	115	77,010
1968	738,490	107	78,760
1969	1,067,980	93	99,678
1970	995,100	76	75,710
1971	999,600	91	91,240
1972	920,530	156	143,965
1973	822,800	124	101,998
1974	918,720	144	132,450
1975	839,300	260	218,500
1976	837,200	258	216,000
1977	726,300	284	206,830
1978	952,400	285	271,490
1979	944,700	322	303,780
1980	1,105,100	243	268,755
1981	1,197,632	235	281,617
1982	1,427,948	235	281,744
1983	1,608,535	169	271,349
1984	1,512,799	129	194,843
1985	1,566,199	74	115,332
1986	1,590,541	187	292,935
1987	-	-	209,000 (est.)

[1] Yield figures have been rounded to the nearest kilogram.

Source: Rapports annuels des statistiques agricoles. Various volumes, op cit.

Appendix B

Nutritive Value of Cowpea Leaves, Pods and Mature Seeds

(100 gm. Portion)

Part	H20 %	Calories	Protein g	Fat g	CHO g	Ca mg	P mg	Fe mg	B Carotene mg		Thiamin mg	Riboflavin mg	Niacin mg	Ascorbic Acid mg
Leaf raw	85.0	44	4.7	.3	8.3	256	63	5.7	2.4		.20	.37	2.1	56
Leaf dried	10.6	277	22.6	3.2	54.6	1556	348	12.0	27.0					86
Leaf cooked	89.3		3.3			132	42	4.6	6.53					6
Pod raw	86.0	44	3.3	.3	9.5	65	65	1.0	.96		.15	.14	1.2	33
Pod cooked	89.5	34	2.6	83	7.0	55	49	.7	.84		.09	.09	.8	17
Seed raw	10.5	343	22.8	1.5	61.7	74	426	5.8	.02		1.05	.21	2.2	--
Seed cooked	80.0	138	5.1	.3	13.8	17	95	1.3	.01		.16	.04	.4	--

Source: H.C. Binttenbender, et. al.

Appendix C

LIST OF PERSONS CONTACTED

Niamey

M. Madou Mahamadou	Ministre du commerce, de l'industries et de l'artisanat
M. Maliki Barhoumi	Directeur du commerce intérieur, Ministère du commerce
Mme. Gamatié Fati	Directrice du commmerce extérieur, Ministère du commerce
M. Idrissa Seydou	Centre Nigérien du commerce extérieur, Chambre de commerce
M. Doldo	Directeur DEPSA, Ministère de l'agriculture
M. Philippe Singelos	DEPSA, Ministère de l'agriculture
Mme. Abdou Christiane	Inspectrice principale, Direction générale de la douane
M. Balla Goga	Directeur régional, Inspection régionale de la douane, départements de Niamey et Dosso
M. Sourghia	Directeur général, SONARA
Dr. R. Bonny N'Tare	ICRISAT

USAID PERSONNEL AND CONTRACTORS

Mr. Michael Kerst	Special Projects Officer, GDO
Mr. Jim Goggin	Agricultural Economist, ADO
Mr. Hararou Djibo	Program Assist. Program Office
Dr. Henri Josserand	Project Director, University of Michigan/CRED
Mr. C. Franklin Casey	University of Michigan/CRED
Mr. James Gray	University of Michigan/CRED
Mr. Papa Sene	Project Director, CLUSA
Mr. Mick O'Neill	Niamey Productivity Project (DAI)
Mr. John Mullenax	Project Director, ASP
Mr. John Lamers	Agronomist, ASP (IFDC)

MARADI DEPARTMENT

M. Ousseini Mahamane Rabiou	Secretaire général, Préfecture
M. Hamadé Adama	Directeur adjoint, Service de l'agriculture
M. Bechir Amadou	Chef du programme semencier, Service de l'agriculture
M. Yazi Goro	Directeur régional de la SONARA
M. Chaibou Lawaly	Chef d'antenne à Maradi, Chambre de Commerce
M. Ibrahim Amadou	Agent/CLUSA, Dankeri
M. Francois Kofi	Directeur régional de la douane
Cowpea Wholesale merchants	

ZINDER DEPARTMENT

M. Amadou Amidou Maiga	Secretaire général, Prefecture
M. Bawa Gaoh Assoumane	Chef de service de la production agricole, Service de l'agriculture
M. Aboubacar H. Siddo	Chef de service départemental du commerce de l'industrie et de l'artisanat

El Hadji Ibra Galadimi	Président national de l'Union nationale des coopératives

Cowpea Wholesale merchants

NIGERIA

Sokoto

Mr. Yahaya Abdulkarim	Permanent Secretary, Sokoto State Ministry of Agriculture
Mr. Adamou Warra	Chief, Planning and Monitoring Office, Sokoto State, Min. of Agriculture
Mr. Murtala O. Raji	Permanent Secretary, Sokoto State Ministry of Commerce
El Hadji A.J. Bako	Chief Commercial Officer, Sokoto State Ministry of Commerce
Mr. Udi Abdulahi	Dept. Chief, Commercial Officer, Sokoto State Ministry of Commerce
Mr. Shehu Guiya	Cowpea wholesaler, Sokoto Market
El Hadji Gandi	Cowpea wholesaler
Mr. Aboubakar Owarayo	Local Government Council
Mr. Shehu Mohammed	Manager A.A. Keri, Ltd.
El Hadji Abou Namatta	Cowpea wholesaler

Zaria

Dr. George Abalu	Chairman, Department of Agricultural Economics, Amadu Bella University

Kano

El Hadji Hima Amadou	Consul of the Government of Niger
M. Moussa Karfe	Commercial Agent, SONARA
M. Mohammed Muktar	Commissioner, Kano State Ministry of Agriculture
M. Gambo Diggol	Chief Agricultural Officer
M. Laudu L. Sulaiman	Permanent Secretary Kano State Ministry of Commerce

M. Abdoulahi Harouna	Chief, Export Promotion, Kano State Ministry of Commerce
El Hadji Sabo	Commission Agent, Dawano Market
Assistant to El.Hadji Leko	Cowpea wholesaler, Dawano Market
M. Musa Okeni	Cowpea wholesaler, Dawano Market
El Hadji S.K. Adelabo	Commission Agent, Dawano Market

BENIN (COTONOU)

Embassy of Niger

Nigerien Ambassador to Benin Mr. Ousmane Goumandakoye,	Attaché administratif

USAID-Cotonou/US Embassy

Ms. Pam Fabian

Ministère du commerce, de l'artisanat et du tourisme

Mr. Robert Akindé,	Directeur du commerce extérieur
Mr. Agbémavor A. Claude,	Directeur du commerce intérieur
Mme. Leontine Mensah	Direction de l'homologation des prix

Ministère du plan et de la statistique

Mr. Emmanuel Amoussou	Directeur général de l'Intitut national de la statistique et de l'analyse économique (INSAE)
Mr. Pierre Babalola	Directeur des statistiques générales à l'INSAE

Ministère du développement rural et de l'action coopérative

Mr. Anatoel Cakpo Sogbohossou,	Directeur de la recherche et de la statistique

Direction des douanes

Mr. Dominique Houngninou	Directeur adjoint
Mr. Kiki Guilandri	Directeur de la comptabilité et de la statistique

Chambre de commerce et d'industrie

Mr. Agossa Deffodji Polycarpe	Secrétaire général
Mr. Acapoci Jean Apiti	Assistance technique
Mr. Houngbedji Protais	Offre commerciale, Centre Beninois du commerce extérieur
Mr. D'Almeida Ayi	Directeur

Organisation commune Bénin Niger des chemins de fer et des transports

Mr. Da-Silva L.S. Martin	Directeur de l'exploitation et du traffic direct

Groupe des sociétés commerciales agro-industrielles, SOGAGRIKO

Mr. Yacouba Adam Fassassi	Directeur général

Société Catraille et Fils, Import - Export

Mr. Michel Megnissou Catraille	Président directeur génaéal

Société Achabi Trading Company, Import-Export

Mr. Chabi Kao Pascal	Président directeur général

Société Bolarossa, Import-Export

Mr. Samuel Dossou	Directeur général

Various traders in the Dan Tokpa wholesale market in Cotonou

BIBLIOGRAPHY

Arnould, J. Eric. First Phase Results of the Cooperative Cereal Marketing Study: Department of Zinder and Maradi, Dec 3-21, 1987

Bittenbender, H.C., Robert P. Barret and Bernard M. Indire-Lavuse. Beans and Cowpeas as Leaf Vegetables and Grain Legumes", Bean/Cowpea CRSP Monograph No. 1, Department of Horticulture, Michigan State University, Undated.

Cullen, Michael A., and A. Waldstein. Grain Marketing in Niger. 26 th Meeting of African Studies Association, Dec. 1983.

Ejiga, N. O.O. Economic Analysis of Storage, Distribution and consumption of Cowpeas in Northern Nigeria Unpublished Ph.D. thesis, Cornell Unversity, August, 1977.

Gamatié, Mariama. Etude sur la consommation des céréales dans la ville de Niamey, June 1987.

Graham, Douglas H., Carles E. Cuevas, Kifle Negash, Michel Keita and Mario Masini. Rural Finance in Niger: A Critical Appraisal and Recommendations for Change, Feb. 1987.

Grant, William, H Art Schar and Paul Ansay. Policy Constraints to Agricultural Exports From Niger. Development Alternatives, Inc., January 1988 (USAID contract number 624-0510-I-7018-00).

Harmon, David P., Russell Barbour, Margaret Clement, Christopher R. Pardy, Leroy Rasmassen, A. Baoua and Modibo Sangaré. First External Evaluation of the Agricultural Support Project in Niger. Development Alternatives Inc., January 1988 (USAID contract Number 624-0510-7018-00).

Holtzman, John, Gerald Martin and Richard Abbott. Operational Guidelines for Rapid Appraisal. Prepared for the Agricultural Marketing Improvement Strategies Project. Abt Associates Inc., 1988.

Institut national de la statistique et de l'analyse économique: Recencement général de la population et de l'habitation. Cotonou Benin, March 1979.

Ithaca International, Ltd. An Evaluation of the Agricultural Technical Packages for the Republic of Niger. Main Report and Annexes. USAID Contract Number: AID-683-929.3039-00. December, 1983.

Josserand, Henri, Ibro Abdou, Traoré Soumana and J. Blas. Etude sur la commercialisation des produits agricoles. Preliminary Report, 1987.

Lamers, John, Gonzalo Romero, and Oua Saidor. Resultats preliminaires sur le role des engrais dans les cultures associées et la rotation mil/niébé. Essais/demonstration de l'hivernage 1987. Republique du Niger, Ministère de l'agricuture et de l'environnement, Service de la Vulgarisation, Centre d'appui á la vulgarisation/ PAPA. 1987.

Larivière, Sylvain. Analyse de l'enquete budget-consommation d'un échantillon type d'exploitants du Département de Diffa, Sept. 1986.

Ministère du développement rural. La commercialisation du Niébé, Jan. 1977.

Mitjavile, Régis. Diagnostic de la SONARA. République du Niger, Etude IDA/OSEM, December, 1983.

Norman, David W. An Economic Survey of Three Villages in Zaria Province, Input-Output Study, Vol I, Text. Samaru Miscellaneous Paper No. 37. Institute for Agricultural Research, Samaru, Ahmadou Bello University, 1972.

Poulin, Roger J., William J. Grant and H Art Schar. Analysis of the Impact of Export Taxes on the Export of Agro-Pastoral Products, DAI, Feb. 1988.

Republique du Niger. Ministère de l'agriculture, Direction des études, de la programmation et des statistiques. Rapports annuels des statistiques agricoles. Various years.

Samba, Ly, Robert Deusen, Kadi Miliki, Gilbert Numa, Chandra Reddy and Scott Swinton. Evaluation des essais en milieu rural sur les cultures associées mil-niébé: Resultats de la campagne 1985. Republique du Niger, Ministère de l'agriculture, INRAN, DCOR, 1986.

Singh, S.R. The-State-of-the-Art of Cowpea Research. Ibadan, IITA Paper presented at the Bean/Cowpea CRSP Five-year review. Michigan State University, East Lansing, Michigan. January 19,1986.

Sene, Papa. Explication méthodologique et bilan intérimaire des activités économiques de coopératives, Oct. 1986.

The World Bank. World Development Report, 1986.