

Ethnography, Export Marketing Policy, and Economic Development in Niger

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This study shows the value of ethnographic research in driving marketing policy in Third World economic development. In the controversy surrounding the World Bank's Structural Adjustment Program, the government of Niger and its multilateral partners sought to identify policy interventions that would promote export marketing growth. The study aims for a programmatic evaluation of onion marketing in West Africa. In addition, it assesses the distribution of benefits to participants in the marketing channel and evaluates widespread negative perceptions of marketing intermediaries.

It's a lot like playing the national lottery.

—Ehadji Mohammed, onion marketer, Kumasi, Ghana

The purpose of this study is to illustrate the use of multimethod ethnographic research in driving marketing policy recommendations in the domain of marketing and economic development. The applicability of ethnography to basic marketing (Arnould and Wallendorf 1994) and management (Stewart 1998) research has been demonstrated, but its value in policy research is not well established.

Outside of marketing, ethnographic inquiry has been an accepted source of policy-related information for more than a century. The Bureau of American Ethnology established by Congress in 1879 and the Bureau of Indian Affairs reorganized in 1934 employed ethnographers in policy-related work. Ethnographers played a role in the development of agricultural policy during the New Deal and of wartime policies related to rationing, civilian–military relations, and morale (Ervin 2000). Some reports originating in policy concerns, such as Ruth Benedict's (1946) World War II-era treatment of Japanese culture, have become ethnographic classics. More recent work in economic development (Potter 1993), health care (Hahn and Harris 1999), urban policy (Low 1999), and educational evaluation (Guba 1978; Guba and Lincoln 1981) builds on these foundations. Ethnographic research often plays a role in the social marketing side of health, education, and development policy (Schenkul, Lecompte, and Hess 1999).

To show the value of multimethod ethnographic research in driving marketing policy recommendations, this study explores onion marketing channels and their potential development in Niger and across West Africa. The article is based

ERIC J. ARNOULD is Professor of Marketing, University of Nebraska. Funding for this research was provided by U.S. Agency for International Development–Niger, by the USAID-funded Water Management Synthesis II Project managed by Cornell University, and through Abt & Associates and the Post-Harvest Institute for Perishables at Idaho State University. This support is gratefully acknowledged. The author also acknowledges the invaluable contributions of Sidi Mohammed Iddal and Chefferou Mahatan, patriotic Nigerien civil servants, courageous comrades, dedicated colleagues, and impassioned partisans of onions and their potential contribution to Niger's economic emancipation. Ronald Paul Hill served as editor for this article.

on interview and observation data as well as a variety of quantitative data collected from market participants and institutional stakeholders in Niger, Benin, Burkina Faso, Ivory Coast, Ghana, and Togo in the early 1990s (Arnould and Iddal 1994).

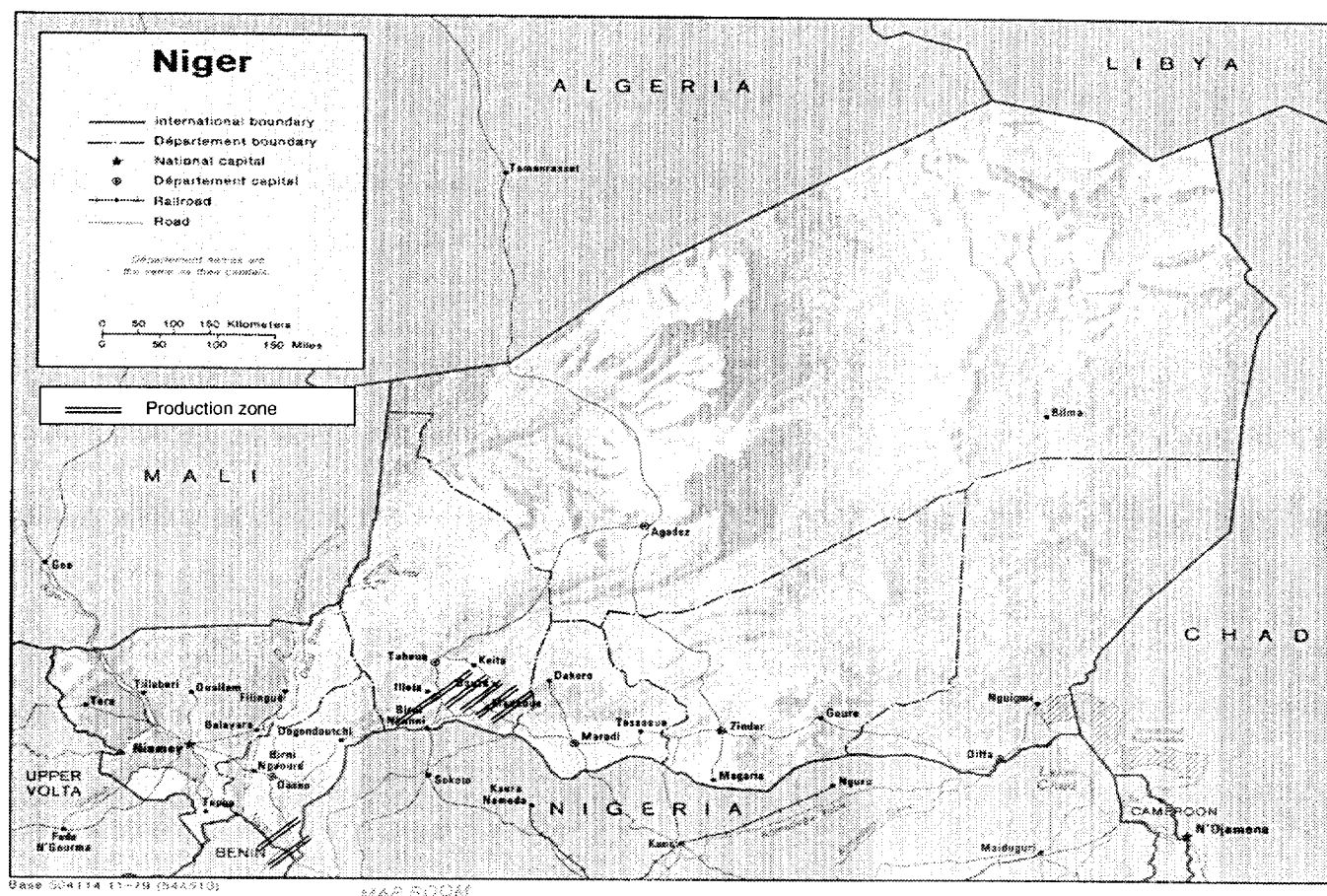
Background

The original study aimed for a comprehensive understanding of the onion marketing process. The government of Niger (GON) and its bi- and multilateral partners, especially the United States Agency for International Development (USAID), wanted to compile the then-scattered information about the channel. In the controversial climate surrounding the World Bank's Structural Adjustment Program in Africa (Carmody 1998; Gervais 1995; Green 1998; Lubeck 1992), representatives of these groups sought to identify policy and other interventions that would promote export marketing growth (USAID 1991). In addition, they wanted an assessment of the distribution of benefits along the onion marketing channel. And they sought to evaluate widespread negative perceptions of marketing intermediaries.

The contribution of the original study may be assessed initially by noting that it provided input to a national seminar on onion marketing policy (Arnould and Mahatan 1994a), an action plan for development of the sector (Arnould and Mahatan 1994b), and the design of USAID–Niger's (1992) Agriculture Marketing and Export Promotion Project No. 683-0274. As a result of these activities, the GON implemented some policy changes. And in 2000, a follow-up national seminar was held.

Onions are one of the few high value agricultural commodities produced in the Niger Republic since the collapse of peanut and cotton markets in the 1980s. Production increased from less than 50,000 tons in 1985 to more than 150,000 tons in 1993. Area cultivated has increased by 72% since 1968. Unusual in African agriculture, producers and marketers enjoy a competitive advantage in regional markets. The purple Violet de Galmi variety presents well visually, and consumers recognize its spicy taste and cooking properties (it disintegrates when boiled). Farmers located primarily in the south of the Tahoua département (see Figure 1) and market intermediaries enjoy a cash income from onions. The GON derives considerable customs (at least

Figure 1. Niger and Onion Production Zones



\$82,000 in 1993) and tax revenue (\$46,000 in Madaoua county alone in 1993) from onion exports to the neighboring countries of Benin, Burkina Faso, Ivory Coast, Ghana, and Togo (see Figure 2). Onion marketing is free from the distorting effects of public sector marketing board interventions that have bedeviled the development of other cash crops throughout West Africa as in Niger (Lubeck 1992). So in a climate of economic and political liberalization where export marketing is thought key to economic development and poverty reduction, onions are important because they illustrate private rather than public sector production and marketing development.

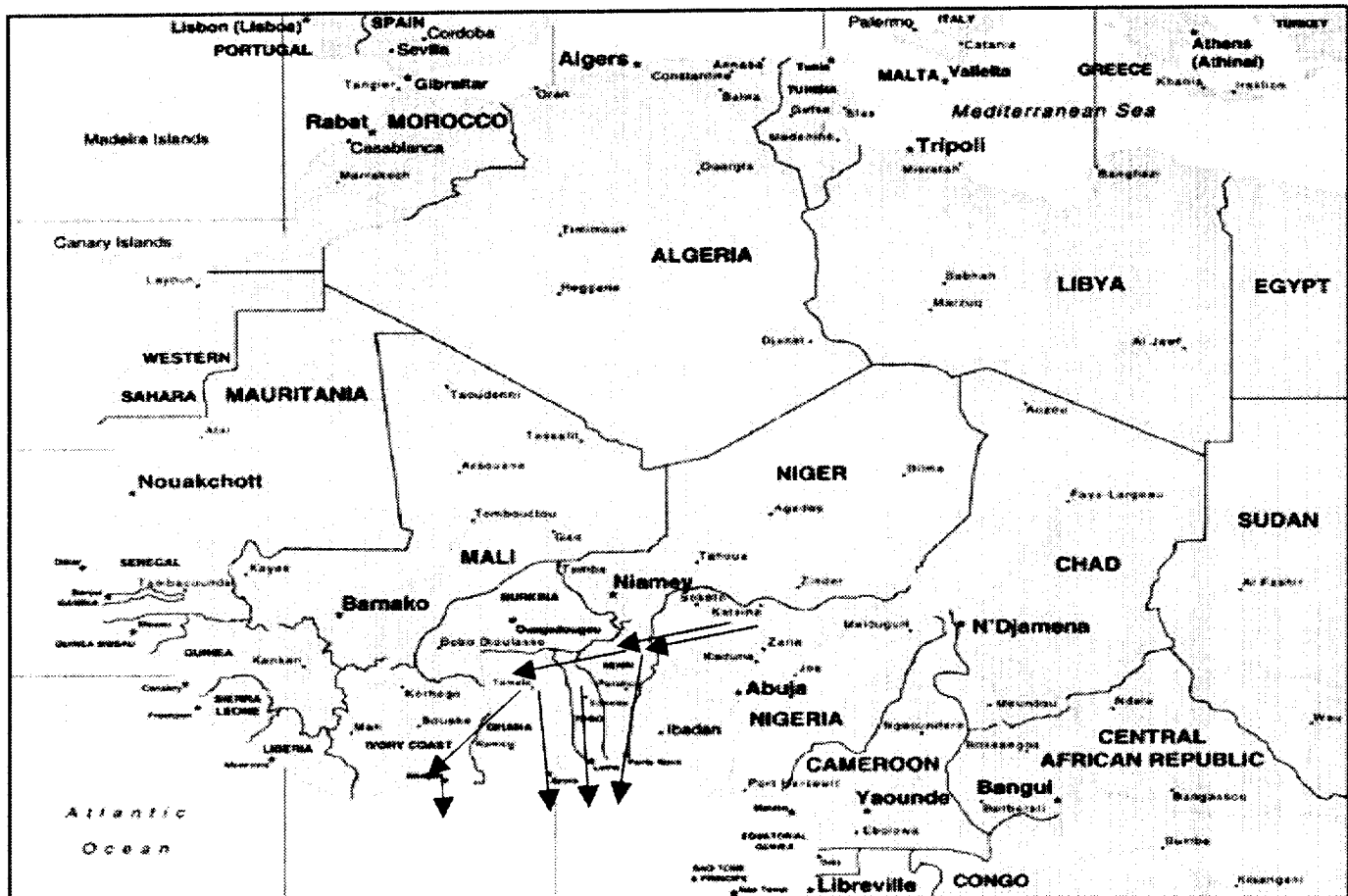
In the late 1980s and early 1990s, the GON and Niger's bi- and multilateral partners were eager to learn from the successes of export onion marketing to better develop and diversify Niger's agricultural sector (Ouédraogo 1991a). These stakeholders recognized that their understanding of onion marketing was impressionistic. Field agents observed farmers increasing acreage in dry-season onion production, adopting more intensive production methods that involved small pump sets and resisting the use of irrigated perimeters for government-mandated winter wheat crops. County officials took note of the expansion of roadside assembly markets and increases in tax revenues. Customs agents observed

the steady stream of heavy truck traffic heading to neighboring countries loaded with sacks of onions and increased customs revenues. We learned from informants that Nigerien marketers struggled to assess demand in the consuming countries and found that they competed for supplies with resident expatriate exporters. And we learned from informants that Nigerien truckers were concerned about competition from expatriate truckers. The studies commissioned sought to provide an overall picture of the onion marketing system, one governed by an interest in geography and social organization rather than field-, transaction-, or market-level information alone.

Method

The data deployed here derive from multiple sources. Much was collected during a rapid assessment procedure (RAP) over a three-week period of intensive site visits conducted along the market channels from the point of production to the point of sales in July and August of 1992. The RAP approach to policy development combines some recognized strengths of ethnography—such as “big picture” or context-sensitive holism, the emic approach that gives voice to informants' values and worldview, descriptive richness, and

Figure 2. West African Region and Onion Transport



commitment to depicting multiple stakeholder viewpoints—with the time sensitivity intrinsic to policymaking (Beebe 1995; Ervin 2000; Holtzman, Martin, and Abbott 1988). Consistent with guidance that evaluates RAPs on the criteria of accuracy, utility, feasibility, and propriety, the familiarity of the multidisciplinary, multinational research team (economic policy, culture, and agriculture; United States, and Niger) with both the sector and local languages facilitated the success of our approach.

In the course of study, literally scores of people were contacted and interviewed. Repeated questioning of stakeholders at the national, regional, and local levels helped us identify development organizations, projects, and individuals active in the onion marketing channel. We contacted informants in their fields, under palaver trees, in marketplaces and transport yards, in their offices, and occasionally in their homes. Interviews were conducted in Hausa, French, or English, depending primarily on the language skills and preferences of informants. Quantitative data were collected from governmental sources, and development project documents were identified through site visits with key gatekeepers.

We identified key informants in a variety of ways. For example, important actors were well known; it sufficed to ask around in the localities in which they worked or lived to find them. And we ended every interview with questions

that helped us identify channel partners in other locales as we progressed along the channel. Thus, we used a snowballing procedure to identify additional informants. However, finding informants sometimes assumed comical proportions: In Abidjan, I found myself acting as interpreter among our guide, who was the Nigerien Embassy's monolingual Hausa-speaking gatekeeper; an Ivorian cab driver with whom I shared only French; and my English monolingual family as we searched for an expatriate Nigerien onion wholesaler's shop deep in Abidjan's Plateau neighborhood. And we sometimes got a taste of onion wholesalers' everyday shipping experiences, as when a zealous police officer in northern Ghana threatened to jail our driver for spurious license violations, which led to a long verbal standoff, but to the officer's disappointment, no payoff.

The study also draws on a team member's short but intensive participant observation study of the transport channel within Niger, which followed trucks from the production zone to markets in the capital, Niamey (Iddal 1991). In addition, it draws on a week of observational research in the production zone conducted in the mid-1980s for a separate project on the productivity of irrigated farming (Arnould 1986). It derives also from a six-week multidisciplinary RAP study of the irrigated agricultural sector in Niger in which most of the irrigated production zones were system-

atically investigated in the late 1980s (Keller et al. 1987; Zalla et al. 1984).

Data were collected for this study to extend previous research on onion marketing (Abdoul Azziz, Diallo, and Alassane 1987; Barhouni 1990; Coudert 1980; Iddal 1991; Krogt and Klaassebos 1991; Lev and Gadbois 1988; Mahamadou 1987; Ouédraogo 1991b; République du Niger 1991a; Seydou and Lev 1988; Smith 1986) and the macro-economic and institutional environments for agribusiness development in Niger (Darbera and Hall 1992; J.E. Austin Associates and the Services Group 1991). This meant that we often sought to corroborate previous research findings. In other words, in our research we triangulated across researchers, collecting data on issues investigated by others. We also triangulated across informants, situations, and cases, as recommended by Wallendorf and Belk (1989) in their early work on trustworthiness in qualitative research. Finally, the work builds on research on indigenous agricultural marketing practice in West Africa (for a review, see Arnould 1995), and we sought to apply strategies and best practices developed through the postwar evolution of applied ethnographic research (Chambers 1985; Ervin 2000).

Findings

The presentation identifies some important channel members, describes how they organize to benefit from the opportunities provided by onion marketing, outlines some of the threats they face, and discusses the strengths and weaknesses in their practices. In some ways, the presentation resembles a SWOT (strengths, weaknesses, opportunities, threats) analysis. The article does not discuss all stakeholders or all policy implications of the research. Specifically, it does not provide an analysis of price data and the potential distorting effects of rent seeking in the channel.

Production and Farm Gate Marketing

Policymakers wanted to know whether and to what extent producers were motivated by market opportunities for onion production, how they were benefiting from participation in onion marketing, and what obstacles to participation they faced. Anecdotal impressions and the feedback to local development projects indicated positive outcomes for producers, but policymakers wanted more concrete information.

Fieldwork with farmers and local agricultural agents and project officers enabled us to identify the scope of participation in commercial onion production and clarify how it is organized. To have some idea of the number of people who might be affected by a donor-funded project in onion marketing, indicative data on the number of people and/or villages active in onion production were collected in each country and each affected county in Niger. Despite recent impressive growth in production in savanna regions of Ghana (20 villages around Bawku), Burkina (5 major village areas), Nigeria (around Sokoto), and Benin (20 villages around Malanville), production in Tahoua département has spread to some 10,000 persons, the most numerous in the region (République du Niger 1991b, c, d).

Fieldwork enabled us to fill in cost and price data that were missing from previous research. Comparative data on

production costs and returns to labor invested in onion production in the primary producing region are presented in Table 1. These data were compiled from a variety of studies based on field observations and interview data, and the data were amended with the results of our own fieldwork. Table 1 identifies the different systems that are employed in onion production, including very small-scale, hand-lifted irrigation systems employing little more than a rope and calabash and a hand-dug well to private systems using small motorized pumps, cooperative pumping systems involving a small number of producers sharing a pump and a cement tube well, and sharecropping on large gravity-fed, state-owned irrigation systems. The data also show a variety of situations in which onion production is profitable. In general, pump irrigation is more profitable than manual lift irrigation. But assuming an average producer market price, net margins range from -10% to 96% depending on the assumptions used in the calculations.

Data from ethnographic research led to the introduction in Table 1 of some items that were omitted from published reports, and the data suggest factors to consider in interpreting the profitability of farm gate marketing. Using varying cost and price assumptions produces different results. Table 1 uses several price assumptions but errs on the side of caution. For example, Norman and Sani (1990) argue that a manual lift production system in Galmi is profitable at a sales price of only \$.03 per kilo. However, that study leaves out of consideration some production, marketing, and storage costs that negatively affect profitability.

Projects intervening in the zone to help farmers delay sales after harvest to benefit from postharvest price increases have sought to keep producer prices from falling below \$5/sack (\$.20/kilogram). Although sales prices of as high as \$.13 per kilogram, or 67 CFA (francs issued by the African Financial Community), were reported to us in Tamaské (Bouza county), seasonal export data show that most farmers earned more modest amounts. Because of social obligations, many farmers are pressed for cash at harvest time; they sell immediately at the seasonal low price. Because less than 25% of producers can afford to stock onions on their own in anticipation of later price rises, bulking agents and wholesalers sometimes obtain onions on very favorable terms (\$.02/kilogram) at harvest. In contrast, a few farmers specialize in onion production year round despite the risks and difficulties of producing during the rainy season and capitalize on high off-season prices. We encountered one farmer in the Gaya region on the Benin border in the far southwest of Niger who had bought a pickup truck and financed a pilgrimage to Mecca in part from off-season onion sales.

Some farmers take out loans to purchase onion seedlings or other input and must pay back these loans at the seasonal low price. Others presell standing crops for cash. Others lease plots to grow onions and must relinquish part of the harvest to the landowner. There is no precise measure of the extent of loan practices in the Tahoua region, but Mahamadou (1987) estimates that 50% of producing families around the town of Galmi become seasonally indebted to bulking agents, assemblers, and landowners. Government civil servants complain of the "corrupting influence" and the high interest rates (50% typically) local merchants charge

Table 1. Costs and Returns to Commercial Onion Production

Costs	Small Pump Irrigation System, Tarka Valley ^a	ONAHA Gravity-Irrigated Perimeter, Galmi ^b	Keita Manual Lift Irrigation System ^c	Private Galmi with Pump ^d	Private Tounfafi with Pump ^e
Seed	\$ 97.11	\$ 16.00	\$ 60.00	\$ 40.00	198.00
Fertilizer	\$ 10.25	\$ 26.70	\$ 40.00	\$ 26.00	20.00
Insecticide	\$ 22.50	\$ 22.50			18.00
Transport and other labor	\$ 56.90	\$360.00	\$ 60.00	\$ 76.00	40.00
Plowing		\$ 20.00		\$ 40.00	32.00
Subtotal	\$ 186.76	\$445.20	160	\$182.00	276.00
Land rental		\$100.00		\$100.00	122.00
Fuel	\$ 47.74		\$ 21.89		144.00
Oil	\$ 9.90		\$ 4.60		
Pump maintenance	\$ 10.00				
Operator	\$ 4.00	\$ 20.00	\$168.00	\$108.00	160.00
Subtotal	\$ 71.63	\$120.00	\$194.48	\$208.00	734.00
Pump amortization	\$ 10.42		\$148.00	\$320.00	92.00
Motor amortization	\$ 45.14		\$ 0.00	\$ 16.00	
Tubing amortization	\$ 12.80		\$ 12.80		
Wells amortization			\$ 66.67	\$ 8.00	
Subtotal	\$ 68.37	\$ 1.40	\$227.47	\$344.00	92.00
Taxes	\$ 113.76				
Shadow cost of household labor	\$ 326.00	\$110.00	\$110.00		250.60
Traditional storage unit	\$ 80.00	\$ 80.00	\$ 80.00	\$ 80.00	80.00
Marketing costs (sacks, transport, labor)	\$ 25.20	\$ 25.20	\$ 25.20	\$140.00	60.00
Total costs	871.72	781.80	797.15	954.00	1492.60
Production (kilograms)	43,328	23,849	33,151	21,600	40,000
Less storage loss at 30%	30,330	16,694	23,205	15,120	28,000
Revenues					
Price 1: at 28.3 FCFA/kilogram (average official low) ^f	\$1,716.67	\$944.89	1313.43	\$855.79	1584.80
Margin 1	844.95	163.09	516.28	-98.21	92.20
Price 2: @42.8 FCFA/ kilogram (average official high)	2596.24	1429.02	1986.39	1294.27	2396.80
Margin 2	1724.52	647.22	1189.24	340.27	904.20
% return on investment gross margin 1	97	21	65	-10	6

^aProject Basse Vallée de la Tarka, Service de la Production Agricole (1992).

^bNational Office of Irrigated Agricultural Systems, Konni; Zalla et al. 1984.

^cCounty Agriculture Service in Keita argues that it costs \$40 to produce one ton of onions.

^dMahamadou 1987.

^eArnould and Mahatan 1994a.

^fWest African Francs.

Table 2. Comparison of Four Onion Storage Facility Types

Type	Capacity (Tons)	Construction Cost (\$)	Cost/Ton Stored (\$6.00 per 120- Kilogram Sack)	Typical Loss (\$)	Market Value of Remainder (\$25 per 120- Kilogram Sack)	Amortization (\$ per Year)	Value Less Amortization (\$)	Net Margin (\$ per Ton Stored)
Traditional thatch silo	2.5	106	21,200	50 over 4 months (40%)	156,250	35 over 3 years	277	111
ILO (mixed materials) ^a	2.4	193	40,254	24 over 6 months (20%)	200,000	16 over 5 years	384	160
ILO (improved adobe) ^b	4.2	240	28,571	48 over 6 months (23%)	336,875	6 over 10 years	668	159
GIE-ALBASA (improved adobe) ^c	12	475	19,783	138 over 6 months (23%)	962,500	4 over 10 years	1921	160

^aInternational Labor Office trial.^bInternational Labor Office trial.^cEconomic Interest Group-Albasa trial.

Sources: Arrachart 1991; GIE ALBASA 1992; Mahamadou 1987; Ouédraogou 1991b.

for loans. But they neglect the inherent risks of crop loss and default creditors incur and the role of intensive local credit practices in risk pooling at the aggregate level (Udry 1994).

At the time of the study, project officers and cooperative officials reported channel conflict between bulking agents and cooperatives. With project help, the latter were seeking to assume responsibility for assembly and wholesale sales themselves and to set more onions aside for deferred sales (e.g., Groupement d'Intérêt Economique ALBASA 1992). Naturally, assemblers and bulking agents resisted these practices that threatened their share of channel revenues. We deemed it unlikely that cooperatives could prevail in this conflict without project assistance.

Table 1 includes a discount for crop losses that most of the published studies neglected, but that crop loss studies reported to be as high as 60% in traditional storage (Arrachart 1991; Goggin n.d.). Several projects operating in the zone devised postharvest storage schemes to enable farmers to take advantage of seasonal cost differentials of 900% (\$4/sack to \$40/sack). These interventions were highly successful and shifted the distribution of crop income from traders to producers (Projet Basse Vallée de la Tarka and Service de la Production Agricole 1992). In one project area, loans made to farmers to enable them to hold onions in storage for seasonal price increases rose from \$5,884 to \$40,724 in just two years (République du Niger 1991d). Table 2 illustrates the cash benefits of deferred sales of onions, as well as the increasing returns to scale as the size of improved adobe storage facilities increases. We concluded that there is room in the marketing channel for more storage and for new channel members to specialize in storage. Alternatively, we suggested that expanding deferred sales to more of the producers who rent land could transfer

benefits up the channel from assemblers and wholesalers to producers.

In calculating returns to producers, it makes a difference what cost assumptions are made. Some farmers produce their own seed, so seed production becomes a shadow cost in these cases. Costs may also be reduced by the unavailability of input, a common concern in the region. For some reason, channels to deliver fertilizer and other agricultural input have never developed, perhaps because government marketing boards and development projects have sought to monopolize input distribution. Although costs are reduced, the lack of input reduces yields as well. Farmers complain only about the yield-depressing effects of aphid infestations, but the lack of fertilizer also depresses onion yields, because the crop is highly responsive to nitrogen.

The Tarka Valley cooperative microirrigation system data shown in Table 1 calculate every cost in cash. However, Nigerien farmers have recourse to various forms of labor exchange, so labor costs may be overestimated. Table 1 shows household labor costs of 326 days per hectare at \$1.00/day for the Tarka system. This may be an overestimate, because this labor rate is generally applied to non-family members, and an eight-hour workday would be needed primarily on the 30–40 irrigation days in a 110–20-day growing season, a figure used in some other calculations shown in Table 1. Furthermore, most producers do not think of their familial labor input in microeconomic terms. Pump operator costs may be overestimated, given the difference in amounts reported in Table 1.

Several calculations also build in the interview finding that 80% to 90% of onion producers in the Tarka Valley and around Tamaske in Keita County obtain access to land through customary land loan arrangements. Around Galmi,

more than one-third of producers borrow land to produce onions. Unless they can obtain land from near kin, farmers usually lease in return for giving up a share of production to the owner. Lease payments may range from the traditional 10% tithe (*zakkat*) to 50%. Although the latter figure may appear excessive, an economist might point out that in many cases there is no opportunity cost to labor, given the near absence of alternative dry season income-producing activities in the Tahoua region. Therefore, commercial growers who lease land may view even a very low return to labor as a net gain.

In addition, it should be noted that average pumping costs increase from south to north because of the depth of the water table. The lower Tarka Valley has a high water table that favors hand lifting. But because of the depth of the water table, hand lifting is not an option in parts of Keita and Bouza counties just a few kilometers up the valley. However, clever farmers find ways to economize on pumping costs. Many producers take advantage of seepage out of the government's irrigated perimeters at Galmi and Konni and use hand lifting to recapture lost water. Others grow onions behind local earthen storage dams in recession fields as water levels drop over the rainy cropping season.

Few of the published studies include on-farm storage costs. Yet a traditional storage facility, or *rudu*, costs \$80 to build and lasts approximately four years (Arrachart 1991). Most farmers require more than one *rudu* unless they sell their entire production around harvest time. Therefore, we included storage costs in Table 1.

We gathered transportation costs from the fields to the wholesale markets from several market participants. Their estimates vary little. These costs, including sorting, sacking, and transportation per se, have been included in Table 1 under the heading of marketing costs. In previous studies, farmers complained that it cost them approximately \$1.00 to transport a sack of onions by donkey or camel to the Arewa or Galmi assembly markets. Assuming that a sack weighs 120 kilograms, farmers profiled in Table 1 would have incurred from \$180 to \$360 in transport costs alone, drastically reducing their margins. Subsequently, construction of rural feeder roads and other road improvements benefited producers by reducing their transport costs sharply and shifting revenues up the channel from transporters to producers. Bigger trucks can now get closer to some of the farms, and some farmers can get to market more easily. One-half to two-thirds of those costs have been cut, as is reflected in Table 1. Most transport fees were paid to local cart drivers, so most transport costs were redistributed to local entrepreneurs. Producers do not really have a choice of bulking markets, because transport costs to any but the local markets would be prohibitive.

Producer Price Incentives

Farm-level price data were collected in Niger, Ghana, Benin, and Burkina. There is remarkable consistency in these prices. Harvest prices in the main producing seasons average approximately \$5.00 to \$6.00 per 100- to 130-kilogram sack in Tahoua, Bawku, Ghana, or Malanville, Benin. Price increases of up to ten times this price are reported for onions produced in the off-season. Off-season prices for Galmi onions may reach \$12 to \$26 in Tahoua markets, but

in the consuming centers such as Lomé, prices reach highs of \$90 per sack at the wholesale level and \$120 per sack at the retail level. Evidently, given the enthusiasm reported in Tahoua département for onion production, current prices provide adequate incentives to increase production and invest in improved agricultural technologies. Producers may expect to receive 23% to 96% of the free on board (FOB) price depending on their costs, the consuming market served, and the season of sales. Their share goes up as their sorting, transporting, and storage costs go down, and these costs increase dramatically for rainy season onions. Their share goes down to the extent that they lease land, take production loans, sell standing crops, or sell "precociously" at harvest. Probably most producers receive approximately 50% of the FOB price. Producers receive only 20% to 30% of the cost, insurance, and freight (CIF) price in the consuming zones.

The high value of onions is stimulating production throughout the savanna area in the subregion. However, we found evidence of seasonal saturation of major urban markets. During our visits in August 1992 to Dantokpa market, Cotonou; Makolo market, Accra; and Katoko market, Niamey, both large and small wholesalers were reporting slow sales due to depressed purchasing power and abundant stocks.

In summary, our research tracked dramatic growth in farmer participation in commercial onion cultivation to take advantage of unmet demand, improved marketing opportunities and production technologies, and realization of revenues superior to the national per capita average (\$200). At the same time, financial weakness inhibited farmers from realizing the commercial potential of their crops. However, land lease arrangements result in a broadened distribution of revenues from producers to landowners. Poor input supply and limited transport and storage infrastructure constrains producers' commercial opportunities.

Bulking Markets

From prior field research, policymakers had some idea of how the bulking markets were organized. They wanted to know how many participants there were and how efficient bulking markets were or if they contributed to cost/price distortions in the channel. In our field research with channel members, we uncovered little evidence of exaggerated profit taking. Nonetheless, some bulking agents in Galmi, Arewa, and Tamaské, the three major assembly markets in Tahoua département, earn considerable profits because of their key position in the channel.

Traditional brokers, the *serkin tasha*, each of whom has several associates, control the bulking markets in Niger. We identified six major brokers in the Arewa market (Madaoua county), three at Galmi (Konni county), and two at Tamaské (Keita county). Brokers are also producers. This is a self-imposed regulation. Brokers believe that participation in the farm economy reduces other farmers' resentment of their commercial success. Each man has multiple assistants linked through traditional patronage (*mai gida/bari*) or kin relationships. Each market assembles onions from many producing villages; 85 serve Arewa market alone. Some horizontal channel conflict has arisen between the *serkin tasha* and cooperatives in Keita that have tried to assert

Table 3. Assemblers' Costs and Returns: Galmi and Arewa Markets (300 sacks)

Revenue	\$	Costs	\$
Commission from producers at \$.10 per sack	30.00	Loading costs	60.00
Commission from truckers at \$.20 per sack	60.00	Quality control	30.00
Difference between producer and FOB price at \$1.00 per sack	300.00	Transport costs	60.00
		Amortization: sacking	100.00
		Amortization: warehouse	20.00
		Payment to conveyor from Niamey	30.00
		Annual license	.50
		Boarding for trucker/exporter	16.00
Total	\$390.00		\$316.50
Margin	\$73.50		
Margin per sack	\$.25		
Margin as a percentage of costs	18.85		

Source: Adapted from Mahamadou (1987, p. 50) and interview data.

some independent control over assembly. The *serkin tasha* perform the following functions:

1. Locating and assembling produce from producers dispersed in dozens of villages;
2. Establishing sales prices primarily on the basis of demand and secondarily on transporters' reports and occasional telephone information of coastal market prices;
3. Organizing transport from fields and villages to the assembly markets;
4. Finding temporary local storage in adobe warehouses;
5. Brokering between producers and wholesale buyers;
6. Arranging the sorting, sacking, and loading of onions and paying laborers;
7. Providing local lodging for itinerant wholesale buyers; and
8. Occasionally providing financing for orders received by telephone from Abidjan.

The brokers require foreign wholesale agents who visit from Ivory Coast, Ghana, Togo, or Benin to deal with them rather than directly with producers or cooperatives. These brokers also prohibit producers from dealing directly with the wholesale importers and truckers. An effort by producers in the town of Magaria in 1989 or 1990 to bypass the *serkin tasha* at Arewa led to a boycott by the *serkin tasha* of these producers and his refusal to sell to truckers who dealt with them. This horizontal channel conflict was quickly suppressed in favor of the *serkin tasha*.

The bulking agents' net margin is approximately \$.25 per sack of onions bought from producing villages in Madaoua county and delivered to the wholesale market at Arewa. Table 3 shows one estimate of costs and returns to assembling product for export in the Galmi and Arewa markets. Table 3 is a composite from various sources, including the field data. The rate of return to agents who invest in bulking activities is high compared with the rates of return realized by wholesale and retail sellers as well as the producers who rent their land. The net return of almost \$74 per truckload of 300 120-kilogram sacks becomes \$368,298 when multiplied over the nearly 5000 truckloads required to evacuate

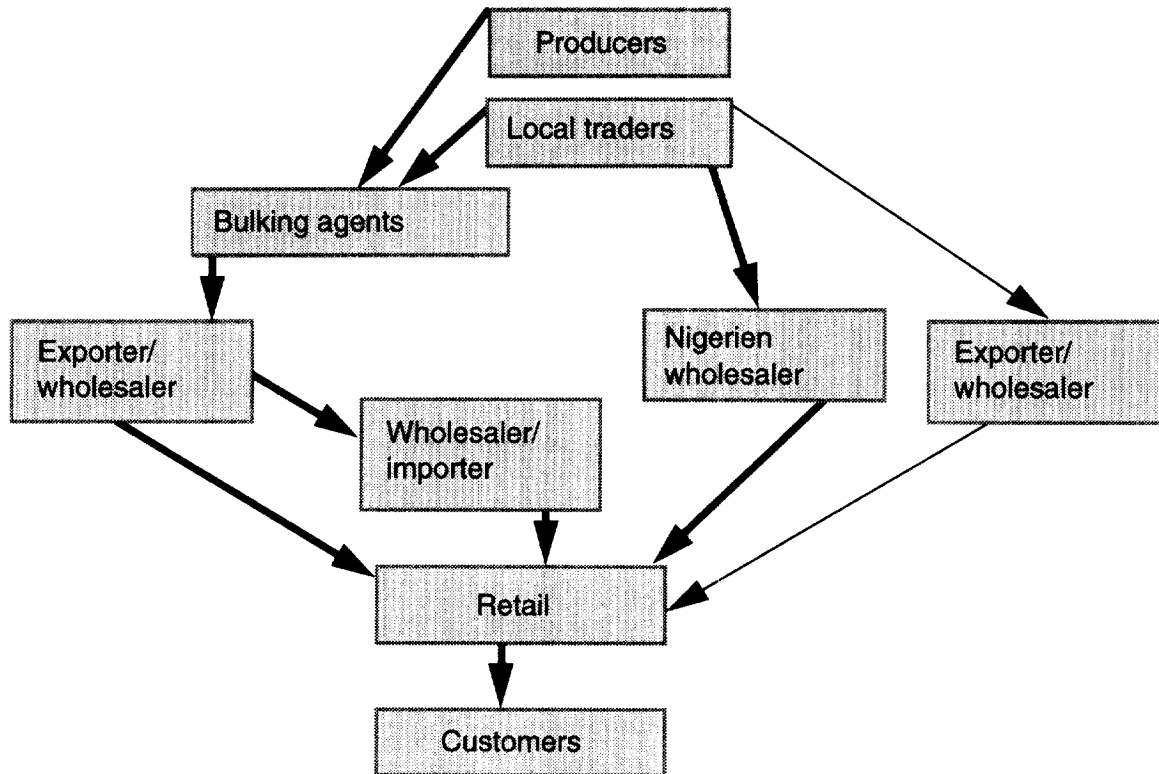
179,185 tons (1994 production less 10% loss) from Tahoua in the three main assembly markets over the course of the season. Some 132 agents (11 assembly agents \times 12 assistants) probably benefit most directly (average income of \$2,790) from bulking onions. Capturing relatively high revenues this close to the farm gate is relatively rare but also occurs among channel captains in some West African grain markets (Saul 1987).

There are some disincentives for expanded investment. Insurance and local bank credit is not available. Instability in the banking sector makes bulking agents unwilling to place assets with banks. Fear of exposure to illicit rent seeking by government agents induces successful market participants to minimize investments in storage infrastructure. Reportedly, the perishability of the crop induces bulking agents to keep half their working capital in cash, put approximately 25% of their capital into onions in short-term storage, and put 25% of their capital in loans on exported onions (Mahamadou 1987).

Wholesale Marketers

Throughout the region, farmers and civil servants, who little appreciate the spatial and temporal arbitrage functions provided by channel members, treat wholesale marketers with suspicion because of three beliefs. Therefore, the study aimed to provide information to assess these beliefs. Although these beliefs are no longer part of official policy in most countries, donors believed that dispelling them was antecedent to developing an effective policy dialogue (White 1990) to facilitate the development of private agribusiness given the climate of unofficial resistance to liberalization (Gervais 1995; Harsch 1998). The first of these beliefs is that the so-called informal private sector consists of parasitic intermediaries who exploit farmers and consumers without adding value. For example, civil servants complain that wholesalers do not invest in production or channel infrastructure. Even the idea of self-interest is not accepted. A second belief is that the private sector is collusive and oligopolistic. Fear of wholesaler price gouging is

Figure 3. Nigerien Onion Marketing Channel Structures



Notes: Key channels are in boldface. Source: Adapted from Lev and Gadbois (1998).

pervasive. Third is the belief that private businesses realize supernormal profits through speculative hoarding. In Niger, these beliefs animate a climate of insecurity for both formal and informal sector marketers. These marketers are subject to frequent investigation (and charged excessive penalties for minor infractions of the commercial codes) as well as to illicit rent seeking by civil servants. This study sought to provide an empirical basis for evaluating these concerns and identify the strategies employed and constraints experienced by wholesale channel members.

The field research results on returns to arbitrage functions do not represent a radical departure from results presented in previous reports. The social organization of the channel in the producing zone, essentially as described by Mahamadou (1987) and Lev and Gadbois (1988), is summarized in Figure 3. A network of producers, small-scale traders, and bulking agents funnels product to Nigerien export wholesalers, foreign importers' agents, and foreign exporters. Ivorian and the smaller-scale Burkinabé and Beninese wholesalers send agents to buy from the bulking agents or small assemblers. Togolese wholesalers station female family members in Galmi, who act as their agents and oversee purchases during the postharvest season. Nigerien wholesalers buy from traders or bulking agents and travel with the trucks to Niamey, where they sell to retailers or follow their wares on to coastal markets.

In the consuming countries, the channel structure is essentially the inverse of this. Major wholesalers who

accompany shipments or receive those sent by their agents sell to both small wholesalers, who handle 1–2 tons of onions at a time, and retailers who sell a 120-kilogram sack at a time. The wholesale custom is composed of a core of regular, reliable buyers. For example, Elhadji Zahari, interviewed in Treichville, Abidjan, said he deals with 20 main clients in 5- to 30-sack lots and confirmed that four main competitors do likewise. In Togo, a major wholesaler's account book showed sales to 25–50 clients.

Hausa traders of Nigerien origin play an important role in wholesaling in Niger, Ivory Coast, and Ghana. Organizing trade along ethnic lines is a traditional West African response to the problem of coordinating responses to risk in the marketing channel caused by physical and temporal channel length and the need to mobilize unsecured credit over time and space (Arnould 1995; Cohen 1971; Lovejoy 1973; Speece 1990). Although I do not know the origin of these men, it was no surprise to discover that common political party membership reinforced other ties. In Abidjan, Ivory Coast, multiple informants stated that the 6 major Nigerien Hausa wholesalers handle approximately 1000 tons of onions a month. In addition, another 10 or 15 Nigerien traders handle another 1000 tons a month, and still another 100 or so smaller-scale operators might handle 10 tons a month.

Onion marketing strategy in Abidjan is complicated by competition between two or three formal sector importers (e.g., Sabimex, Distrimex) of Dutch onions and the Nigerien

Table 4. Comparative Seasonal Prices of Dutch and Nigerien Onions in Abidjan

	Dutch Onions	Nigerien Onions (Harvest)	Percent Transport/ Retail Price	Nigerien Onions (Midseason)	Percent Transport/ Retail Price	Nigerien Onions (Late Season)	Percent Transport/ Retail Price
Purchase price	?	2000		3000		7000	
Transport and rents	?	4685	62	4685	58	4685	38
CIF cost	7500	6685		7685		11,685	
Markup	375	335		384		584	
Retail	7875	7020		8069		12,269	

Source: Interview data and secondary research.

onion importers. The large Lebanese and Ivorian importers are modern, diversified firms with cold storage facilities and computerized inventory systems. They service the grocery and institutional trade but also sell to popular market retailers. They tend to set fixed prices for all similar clients. They enjoy volume discounts, maintain constant stocks, and have to contend with only one customs post at the port of Abidjan. Consequently, they generally enjoy a price advantage over Nigerien onion wholesalers (see Table 4).

The issue of channel power is more complex than might be expected. For example, Distrimex controls 70% of the market for Dutch onions in Abidjan. Distrimex advances some imported Dutch onions to 10–12 Nigerien wholesalers who redistribute them to retailers. However, the director complains that they use the money they earn from sales of Dutch onions to retailers to purchase Nigerien onions when they are available in late February through May. He believes he loses out doubly. He finances his own competition, because Nigerien onions are cheaper than Dutch onions early in season (see Table 4), and he loses because the repayment of his loans are delayed while the Nigeriens sell their Nigerien onions. A competitor who controls approximately 20% of the imported onion market estimated that Distrimex lost \$124,000 trying in vain to get control over his Nigerien competitors in a price war. He wanted to force them to divide the market so that he would control it eight months of the year with Dutch onions and they would control it four months of the year with Nigerien onions. He lost the struggle, the director said, because, the Nigeriens “have no price,” meaning they could absorb price cuts by reducing their costs to near zero. The Nigeriens’ aversion to fixed cost investments and their use of casual and family labor, which reduces their variable costs, explains their remarkable resilience to fierce price competition.

Accra in the south, Kumasi in the center, and Bawku in the extreme north are the most important onion markets in Ghana; the latter is also a production zone of growing importance. Nigerien Hausa are important players in the Accra markets, where there are seven major wholesalers. Songhay-speaking Malians are also players in both the Accra and Kumasi markets; there are probably five major Songhay importers in Accra, fewer in Kumasi. Women dominate retail onion marketing in Kumasi (Clark 1994). Local Hausa-speaking producer–marketers dominate import/export sales in the Bawku market.

In contrast to the belief that wholesalers exercise considerable channel power, a lesser wholesale informant in Kumasi illustrated the problems faced by wholesalers marketing across ethnic and sex divisions. He described how retailers sometimes renege on 10% of the value of the onions they have borrowed on credit. These retailers will claim that these onions have spoiled. This informant believed that it was difficult to counter such a tactic, because disgruntled retailers can locate another wholesaler.

The most organized, if not the largest, network of wholesalers and agents is based in Togo and involves women in all the major decision-making roles. Many are related. Woman-dominated trading is a West African response to sex-based economic marginalization, reinforced by the experience of marketing channel risk (Clark 1994; Traeger 1981). There are several dozen women involved in the importing business, but no more than five or six major wholesalers head them. The most important of these women, Madame Vias, handled more than 1100 tons of onions in the first half of 1992. Often groups of Togolese women pool their resources to share truck rental. This is a common strategy through which women step up to trading on their own account from working as agents of larger-scale traders. The Togolese traders had even attempted (unsuccessfully) to develop a formal marketing organization in order to qualify for bank loans.

Women are the most important wholesalers of Nigerien onions in Benin. A pair of sisters, Jana and Ayoun, dominates the trade from Malanville in the north to Cotonou the capital on the coast. Sisters and sisters-in-law often pool labor and resources in these two countries. Competition from a handful of male traders who obtain onions in Sokoto, Nigeria, is increasing. Malanville processed approximately 300 tons of onions in 1991. Cotonou, the capital on the coast, receives weekly shipments from the north of approximately 100 tons.

The onion trade in Benin, like that in Ghana, is complicated by the presence of secondary producing zones in the Malanville, Benin, area on the Niger–Benin border and Bawku on the Ghana–Burkina border, respectively. In both cases, these areas harvest slightly earlier than in Tahoua. Wholesalers in Malanville market heavily in November through April, whereas the Tahoua production peaks a little later. In recent years, wholesalers in Tahoua formulated a loose agreement that allows those in Malanville to finish exporting to southern Benin before they begin exporting

there. In Bawku there is no formal agreement, but Bawku wholesalers also benefit from an earlier harvest. Clever wholesalers in coastal towns take seasonal advantage of the lower prices in these savanna markets before beginning their exports of onions from the Nigerien Sahel.

Both men and women are active players in Burkina. The major bulk-breaking, wholesale markets are in Ouagadougou and Bobo-Dioulasso. Ouagadougou serves a market area that stretches from Dori to Ouahgiya and south to the Ghanaian border. One of the four most important wholesalers in Ouagadougou is a woman, Madame Daniba Hélène. She claims to handle approximately 144 tons a month. She says that there are four other wholesalers working out of Ouagadougou, who together handle approximately 288 tons overall. She says there is room for 192 more tons a month on the Ouagadougou market.

Katakoto or Boukoki market in Niamey is the major bulk-breaking market in western Niger. Approximately 15 small wholesalers are active in this market, which handles about

two trucks a week of onions throughout the year, or approximately 2700 tons.

From a variety of sources, we compiled Table 5. Our research enabled us to amend the figures provided by other researchers and collect our own. This table reveals that margins on cost of goods sold are relatively modest given the high levels of risk involved. These results are also consistent with the opinions of two formal sector retailers in Abidjan who note that informal sector wholesalers maintain margins that they could not sustain and remain in business. The data in Table 5 also reveal that profitability is limited primarily by four factors: limited storage and withholding capacity for this perishable crop, the physical length of the channel of distribution, poor telecommunications facilities, and rampant illicit rent seeking. In some coastal markets, downward price pressure from Dutch onion sales also constrains profitability.

Price differences between the wholesale and retail level reflect transport and minimal processing costs. These differences include the costs of storage, sorting, transport, and pay-

Table 5. Onion Marketing Variable Costs and Prices

Destination	Niamey, Niger	Lomé, Togo	Malanville, Benin	Cotonou, Benin	Abidjan, Ivory Coast	Ouagadougou, Burkina Faso	Accra, Ghana
Purchase price	18.00	16.00	14.00	12.00	4.00	16.00	21.00
County tax	.40	.20	.20	.20	.30	.30	.20
Wholesale intermediary	.20	.20	.20	.20	.20	.25	.20
Loading	.50	.40	.30	.30	.20	.40	.20
Sacks	1.20	.40	1.20	1.20		1.20	1.20
Breathing cap	.20	.15				.15	.15
<i>Sarkin tasha</i>	.20	.20	.20	.20	.20	.20	.20
Subtotal	20.70	17.55	16.10	14.10	4.90	18.50	23.15
Filing costs							.07
Statistics tax		.40	.38	.38	2.80	.40	.80
Transport	4.00	5.00	2.00	6.00	6.00	4.00	6.00
Informal taxes	.50	4.50	1.90	2.16	2.00	2.10	2.26
Guaranty fund, Burkina					.40	.10	
Total customs payments		5.33	.04	.40		1.00	.68
Ivory Coast laissez-passer					2.62		
Phytosanitary/conditioning				.42	.07	.17	.07
Other costs		.08			.50		.70
Subtotal	4.50	15.31	4.32	9.36	14.38	7.77	10.51
Unloading	1.00	.15	.10	.10	.20	.10	.18
Carting	.50			.40	.20		.18
Intermediary				.40			
Warehouse		.10		.20	.02		.35
Market tax	.40	.20	.20			.05	
Subtotal	1.90	.45	.30	1.10	.42	.15	
Cost price CIF	27.10	33.31	20.72	24.56	19.71	26.02	33.66
Loss (7%–10%)	3	3	2	2	2	1.80	3
Cost price	29.81	36.64	22.79	27.02	21.68	27.84	37.03
Asking price	30.00	40.00	30.00	29.00	23.00	24.00	52.80
Margin	.19	3.36	7.21	1.98	1.32	–3.84	15.77
Margin as a percentage of cost	1	9.17	31.63	7.34	6.10	–13.79	42.59

Notes: Niamey, Niger; Lomé, Togo; and Ouagadougou, Burkina Faso, data are based on interviews and secondary research. Malanville, Bénin, data are based on Krogt and Klaassebos (1991), interviews, and secondary research. Cotonou, Bénin, data are based on Barhouni (1990), interviews, and secondary research. Abidjan, Ivory Coast, data are based on Lev and Gadbois (1988), interviews, and secondary research.

ment to the retail "sales force," that is, income to the retail trader and his or her family members and casual employees. But price differences across time primarily reflect supply-and-demand factors rather than storage costs and arbitrage functions. This again is due to the absence of significant storage and processing activity anywhere along the marketing channel. Table 5 suggests that it is in wholesalers' interest to forward-buy from producers if they can, because driving down producers' margins is one of the few sources of leverage wholesalers can exert in the channel. Therefore, they purchase standing crops, make input loans, pressure farmers to sell quickly at harvest, and resist efforts by cooperatives to mediate between producers and assemblers.

Transport

Data were collected on total transport costs per unit of capital invested in onions. Total transport costs, including transport costs and formal and informal taxes, can be shown to vary from a seasonal high of 62% to a seasonal low of 38% of the sales price in Abidjan.

Our research showed that transport is not an overwhelming obstacle to the development of onion exporting. The crop is perishable, and without refrigeration, losses become significant after more than two to three days of road travel. However, wholesalers rarely report difficulties finding trucks. Wholesalers travel with trucks from the importing countries to the production zone, identify empty trucks in the large cities, and rent them for the return journey to the coastal markets, or they rent local Nigerien rigs. If they travel without incident, truckers can reach the coastal markets within the two-to-three-day limit. Transport costs were steady at between \$.04 and \$.06 per kilogram, and even today after devaluation of the CFA and price increases, these costs should be no more than \$.20 per kilogram.

The most significant transport-related problem is rent seeking. The problem exists in all countries, though the amounts paid vary from country to country and from time to time as government controls over unauthorized checkpoints ebb and flow. Wholesalers complain that the Beninese authorities are particularly exigent. As an illustration, at the Kantchari border post between Niger and Burkina Faso, the driver or wholesaler escorting a 15-ton truckload will pay between \$130 and \$170 to customs, \$26 to the crop protection service, and \$15 to the transit service, though he or she may bargain over the amount paid to the customs. Everyone considers all this standard, if regrettable, operating procedure. In addition, the driver or wholesaler might pay "respects" to the chief of the customs service (\$40) and to the agent inspecting the truck (\$20). Elhadji Yacouba, who controls approximately 20% of the Nigerien onion market in Abidjan, claimed that customs agents sometimes overstate the cost of the onions to inflate the tax they demand. Resistance to payment leads to delays in passing the truck through or demands that the truck be unloaded to search for contraband weapons or drugs. This problem has led some Nigerien truckers to refuse to enter Ghana, according to informants in Makolo market in Accra. These same informants also argue that rent seeking is less extreme in Ghana than in neighboring countries, a perception echoed by Ghanaian officials, who touted recently imposed controls on unauthorized checkpoints.

Customs agents, police, and gendarmes station roadblocks near major towns along the routes. Transporters pay \$7–\$10 at each of the 15 roadblocks between Kantchari and the capital of Burkina Faso, Ouagadougou. Wholesalers and transporters divide the payments. The wholesalers pay the customs service, which is concerned with merchandise. The drivers pay the gendarmes, police, and others who are concerned with vehicle violations. A similar tale about roadblocks and delay was told in every wholesale market. For example, in Abidjan, wholesalers enumerated six customs posts in Burkina Faso and six between Bouaké and Abidjan. And they counted between 22 and 26 police and gendarme posts between Kantchari and Abidjan, depending on whether they counted the posts at each end of town separately or together. In Benin and Ghana, several wholesalers remarked that the government periodically cracked down on these practices with temporary effect. Nevertheless, a Burkina Faso businessman claimed that the corruption in Ivory Coast was organized from "top to bottom," and a Togolese implicated "the chiefs." Elhadji Zakari claimed that some traders in the Treichville market in Abidjan had even given up importing Nigerien onions because of rent seeking.

Credit

Only the three or four major informal sector importers we identified in each country and one informal importer in Ghana had access to bank credit. We found that the absence of bank credit constrains informal sector traders' abilities to develop linkages with formal sector import/export firms. Nor do any of the informal sector marketers have access to insurance that would shield them from loss of shipped product. Although total loss of shipments is unusual, it does occur. We saw the shell of a truck that Madame Vias, the major Togolese wholesaler (interviewed at her home in Lomé, Togo), reported was burned by customs agents who were angered by her driver's failure to pay the customary bribes. Such a loss would spell bankruptcy for most traders. The threat of unsecured loss heightens traders' perceived risk, adding to disincentives for expanded trade.

Virtually all of the thousands of participants have access to some form of informal sector credit. For example, wholesalers receive credit from transporters; they pay half the transport costs in advance of delivery in Accra or Abidjan; they pay the other half on delivery or within 10 days of delivery (Accra). Wholesale traders advance goods to retailers. Theoretically, payment in full is due after a delay of from 7 (Niamey) to 15 (Lomé) or 20 (Abidjan) days. Wholesalers often have considerable amounts of capital, the retail value of one or two truckloads of onions, tied up in these arrangements with retailers. Because onions are perishable, wholesalers have considerable interest in rapid stock turns; advancing product to retailers with flexible payback is a form of risk pooling that is not uncommon in the region (Udry 1994).

Onion importers operating in Ghana prefer to rent Ghanaian trucks that off-load imported salt in Niamey. This arrangement enables some of them to operate a kind of product buyback scheme. The Ghanaian drivers receive the sales revenue of the salt off-loaded in Niger. Then, a Nigerien onion merchant borrows money from the Ghanaian driver to finance his load, to round out the load if his financial

resources are limited, or simply to reduce his financial exposure. In addition, the transporters offer a transportation discount of some \$.24 per sack to avoid returning to Ghana with an empty truck. The onion importer pays half of the transport costs upon arrival in Accra and the rest 15 to 20 days later, thereby enabling him to pay this fee at a discount and from the proceeds of his sales. This arrangement works well for Nigerien merchants as well, because they are able to pay transport in a weak currency, the Ghanaian cedi. And because there are few points of leverage in the channel, this cost savings is welcome. The preference of wholesalers in the Ghanaian channel to employ Ghanaian trucks leads to horizontal conflict with Nigerien truckers. They resent the loss of business even though many do not like to travel in Ghana because of the rent seeking they are subject to there.

Infrastructure

Members of the market channel face several infrastructural barriers to improved marketing. The first involves the road network. The international highway network is gradually improving in the subregion, especially in border regions where roads have been poor historically. However, the dismal state of rural roads in Ghana, Togo, and Benin hinders the extension of channels of distribution for Nigerien onions.

The second infrastructural constraint to the expansion of onion marketing is the telecommunications grid. The limited ability of marketers in Accra, Kumasi, Lomé, Parakou, Cotonou, Ouagadougou, Bobo-Dioulasso, and other major market towns to telephone assemblers or their agents in Arewa easily contributes to disorder in the market channel and increases the risks that traders will lose money. Marketers say that two key pieces of information are needed on a timely basis: market prices and volumes in stock in consumer markets. In addition, information regarding prices and quantities traded in markets in the secondary producing zones such as Bawku, Ghana, and Malanville, Niger, would be useful to assemblers and importers on a seasonal basis. Traders in Abidjan, Lomé, and Ouagadougou make some use of the telephone to communicate price and demand information in some markets. Intermediaries in Arewa claim that they are ignorant of market prices in coastal markets.

Producers and importers' agents in the Tamaské and the Galmi areas who have access to public telephones use them. They keep tabs on both market prices and quantities available. If the market becomes glutted (*kasiwa ta cika*), agents moderate their buying schedule and sell onions off en route to Abidjan. A wholesaler in Ouagadougou reported a similar practice of selling excess stock in roadside markets in Burkina en route to Ouagadougou. Some informal sector traders remain unaware of the benefits that might accrue to improved telephone, fax, and telex services, but others would be pleased to have improvements in this area.

The availability of storage facilities is a third important component of the onion market infrastructure. There is virtually no formal sector financial support available to make investments in infrastructure associated with Nigerien onion marketing. Bulking agents at Galmi, Magaria, and especially Arewa have invested in both *rudu* storage huts and "shipping docks." The latter are little more than traditional adobe houses that cost approximately 150,000 francs and

may be amortized over a five-year period. Storage costs at the point of sale are nominal; producers may tip intermediaries a small sum for the privilege of placing sacks in the adobe shipping docks.

Major importers rent rude shelters, cement market stalls, or warehouse rooms in or adjacent to the marketplace from other citizens or the government. Storage costs in the consuming markets are nominal, less than 5% of the CIF. Costs are usually charged on a volume rather than time basis. They average from \$.09 per sack to \$.40 per sack in Abidjan. It costs approximately \$300 a month to rent a warehouse in Abidjan, or \$.07 per sack. It costs \$.24 per sack in the Makolo market in Accra, Ghana. Wholesalers in Lomé pay \$.10–\$.15 per sack for warehouse space. Wholesalers in Katako Market, Niamey, pay \$.03 per sack; those in Dantokpa Market, Cotonou, pay \$.40 per sack. The reason for the low storage costs is that wholesalers quickly place produce with semigross sellers and retailers; the costs of storage are spread over participants in the channel.

Importers face significant economic and political disincentives for investment in storage infrastructure and other incentives for rapid stock turnover. These include spoilage, of course, but also the risk of exposure to rent-seeking behaviors from government agents who act on the three myths cited previously. In addition, wholesalers are acutely sensitive to the opportunity cost of capital tied up in relatively unproductive infrastructure. Rather than invest in infrastructure, both marketers specializing in assembly and importers prefer to increase the velocity of stock turnover so that only small stocks remain in storage at any time. In stark contrast to widely held beliefs, traders tell dark tales about those who have tried to store against price rises and incurred substantial losses. Again, increasing the rate of turnover is one of the few ways wholesalers can improve their returns.

Processing and Packaging

Sorting and grading onions is widely undertaken at the retail level in the consumer markets. Wholesalers reason that it is better to lose some part of every shipment than all of a shipment of some particular grade because of spoilage. Sorting, grading, and locational utilities provided by retailers add value to the product and provide the rationale for their markup. However, no brand marking of Nigerien onions occurs. Both wholesalers and retailers recognize the preference of institutional customers, such as hotels, for larger bulbs and of individual housekeepers for smaller bulbs. The latter preference has to do with price; smaller bulbs are cheaper. If the price is right, most customers will buy the larger bulbs. Retailers typically sort onions into three or four grades on the basis of bulb size and quality. They are then sold in piles of four to five bulbs for \$.20–\$.30, \$.15–\$.20, \$.10, and \$.05, respectively. Retailers can respond to changing patterns of demand by adjusting the sizes of the bulbs marketed in different piles though not the number of bulbs so marketed. Sorting and grading will probably remain a retail function.

Virtually no onions produced in the subregion undergo any special form of processing or packing aside from artisanal drying. Low-cost recycled jute sacks and locally produced baskets remain the packing materials of choice. In Togo and Benin, onions are typically transferred from the

jute sacks, in which they are transported from Tahoua, to large baskets to improve aeration. Onions from Nigeria are often transported in huge baskets. In Lomé and Cotonou, small baskets containing 40 onions and smaller ones containing no more than 6 onions are typically offered to retail customers. Recycled Dutch onion nylon sacks were becoming common in Abidjan, where detailers appreciate their aerating qualities; some projects were experimenting with small retail-size sacks in Ouagadougou. Dealers in Katoko market, Niamey, are aware of the use of improved nylon sacks on the coast but do not use them. They are not available in Niamey.

Literacy and Numeracy

Interviews and observation of marketplace behavior led us to infer that less than 10% of even the largest informal sector marketers have received any formal technical, financial, or functional literacy training. However, many of them have children or assistants who are literate and numerate in French or English. Some of the latter provide accounting or communications functions for senior traders. West African lingua franca and Arabic are adequate for transacting business in the subregion, but limited international language skills can be a barrier to developing links with formal sector agribusiness firms.

Development projects working in the producing zone claim to have invested in cooperative accounting training. Scores of cooperative members have allegedly received such training. Given the poor results of cooperative training achieved through the regional agricultural productivity projects in the 1970s and 1980s (République du Niger 1985), it would be imprudent to overestimate the impact of the training received on marketing practice.

Conditions That Contribute to Onion Marketing Inefficiency

Consumer prices might be distorted by the existence of several factors, including excessive profit taking by market intermediaries, government revenue policies, or rent seeking. Little evidence of exaggerated profit taking by marketing intermediaries throughout the market channel could be detected.

Our extensive interviews with regulating authorities and the secondary data collected suggest that government policies in most countries in the region are moving toward simplified, more streamlined, and lower-cost procedures for gaining entry to the onion trade, as well as other commercial activities. Ghana had made dramatic but fragile strides in this direction at the time of our research. Nigerien customs officers we interviewed claimed that simplified customs procedures introduced after 1990 meant that most customs duties were paid in the producing zone and only a minimal "taxe statistique" was paid at the frontiers. We heard of these policies from officers in Niamey, agents in the field, and transporters. Unfortunately, customs officers admitted privately that the police and gendarmes did not see eye to eye with them about the need to facilitate exports.

Nonetheless, regulations are unstable and conflicting rules persist. Madame Daniba was among those reporting widely varying Burkinabé customs duties from year to year, for example. Wholesalers in Niger, like those in Ivory

Coast, complained that export licensing procedures that were supposed to protect them from rent seeking had little deterrent effect on the behavior of the gendarmes and police. An Ivorian official told us that the imposition of travel in armed convoys between Bouaké and Abidjan, a measure that was supposed to halt both banditry and rent seeking, worked for only six weeks before four police posts sprang up again. We also found that some channel members in every country confuse formal regulations with informal arrangements. Indeed, we had trouble keeping them straight.

Private traders as well as the national treasuries of the nations involved in the onion trade suffer from the effects of illicit rent seeking undertaken by customs agents, gendarmes, and police in each country. Illicit rents, strictly defined, account for 6% to 10% of the CIF price in the consuming markets. However, several of the agriculture and laissez-passer controls imposed abroad constitute little more than formalized rents that add costs but no value to Niger's onion exports. In addition, because of delays at border posts, transport times escalate. These delays add marginally to transport costs. And because "onions are like a baby," as our Togolese informant Madame Vias told us, delays increase transport losses. As a result, we estimated that consumers face prices one-tenth to one-fifth higher than they would ordinarily.

Rent seeking has several other negative consequences that we uncovered in our research. It discourages traders from undertaking investments in extending channels to marginally profitable areas between the major bulk-breaking centers. Therefore, we found that small towns even on the main transit routes were ill provided with onions. Rent seeking dissuades wholesalers from undertaking investments in improved storage and processing, because this would call attention to their apparent commercial success. And it discourages them from regularizing their status with tax and licensing authorities, because they find that paying their export and marketing licenses affords them no protection from rent seeking and simply increases their fixed costs. Illicit rent seeking helps suppress the prices traders are willing to pay to producers and may even discourage producers from undertaking investments in production that might attract too much attention to them. Illicit enrichment and informal arrangements between agents of the state and marketers rob national treasuries of revenue, perhaps 50% of legitimate fees and revenues. However, it is probably fair to say that rent seeking limits the market power of wholesalers. And it spreads the benefits of onion trade to the rent seekers, who spend their rents on consumer goods. Unfortunately, they usually purchase imported luxury products rather than invest locally or save, as neoliberal economic policymakers would prefer (Carmody 1998).

Consumer Prices

Consumers in the subregion are avid onion users. Even when compelled to use onions that do not lend themselves to African culinary practices, such as the Dutch varieties, demand remains strong. But marketers state that price is a significant factor in their purchase decisions. This is why consumers prefer small, less expensive onion bulbs. Price also explains the lack of loyalty to Violet de Galmi onions when consumers are offered a considerably less costly alter-

Table 6. Official Nigerien Onion Exports in Metric Tons 1989-93

Month	1989	1990	1991	1992	1993	Average Monthly Total	Percentage of Total
January	285.4	340.5	2096.2	255.3	1325.30	1004.33	.04
February	235.9	1680	2497.2	512.3	1566.2	1298.32	.06
March	952.1	2423.9	2661.3	949.4	3144.9	2026.3	.09
April	2324.3	3343	3592.8	2014.6	3037	2862.3	.12
May	3995.2	4151.8	3817.9	2916.2	4518.5	3879.9	.17
June	3442.4	2985.8	4004.7	2945.6	3248.4	3325.4	.14
July	2493.4	2334.3	2314.7	1776.5	3785.7	2540.9	.11
August	1874.6	1949	2109.1	1496.2	3039	2093.6	.09
September	946.1	1133.9	1179.3	1224.6	2482.5	1393.3	.06
October	824	711.6	257.2	666.5	1456.1	783.1	.03
November	242.9	910	836.9	763.8	1229	796.5	.03
December	477.1	2076.6	154.4	1146.7	1964.4	1163.8	.05
Total	17,808	24,040	25,522	16,668	30,797	22,967.0	
Mean	1618.91	2003.37	2126.80	1388.98	2566.42		

Source: Arnould and Mahatan 1994a.

native. Consumers in Lomé may expect to see prices double (or viewed alternatively, halve) from one season of the year to the next. Under these conditions, consumers would be expected to limit consumption in periods of high prices and seek out low-cost alternatives. The 64% seasonal price differential in favor of Dutch onions in the Abidjan market (see Table 4) may help explain their recent diffusion to markets in Ghana and Burkina. Similarly, the import of Nigerian onions into Dantokpa market, Benin, may be explained by their 56% seasonal price advantage over Nigerian onions (\$20 per sack versus \$36 per sack in August 1992).

Reinforcement and extension of marketing channels to areas in the consuming countries that are currently underserved would create economies of scale for wholesalers. These economies should in turn bring down consumer costs throughout the marketing network. Increased production and especially increased on-farm storage should smooth out interseason price variation for consumers. However, considerable extension of marketing channels cannot be expected in the current climate of unofficial hostility to commercial activity. But high channel costs may be driving the development of alternative producing centers in the savanna zone in the subregion.

Onion Marketing Prospects

There is no reliable data on consumer sales volume or trends. But Nigerien export data from 1989 to 1993 shown in Table 6 reveal an increase of 32% in volume (and 98% in tax revenues) over this period. The only published sources of longitudinal data are official import/export figures of dubious reliability and evident inconsistency and some abbreviated price series identified in some countries. For example, figures collected at the Chamber of Commerce in Abidjan showed no Nigerien onion imports of the 20,272 total tons imported in 1989; 5461 tons, or 24% of the total imports, in 1990; and 19,089 tons, or 69% of total imports, in 1991.

Official customs data collected in the consuming countries provide information of limited reliability to assess

Table 7. Mean Nigerien Exports to the Countries Studied

Country	Export Tonnage	Share of Exports (%)
Ivory Coast	16,160	63.55
Ghana	3378	13.30
Benin	2352	9.25
Togo	1700	6.70
Burkina Faso	912	3.60
Other destination	912	3.60
Total	25,414	100

Source: République du Niger 1990.

competition and market potential for Nigerien onions over time. Some data show that 1991 onion imports to Ivory Coast increased 63% over 1981 levels (République du Côte d'Ivoire 1987-91). Onion consumption in Ivory Coast was reported to have increased from 35,000 to 42,000 tons between 1987 and 1992. Similar import figures collected from official sources in Togo showed that imports increased 500% between 1986 and 1991, from 11,638 tons to 47,388 tons (République Togolaise 1987-91). Onions were not reported separately in Ghanaian customs data, but Ghanaian imports of dried vegetables from Economic Community of West Africa (ECOWAS) countries, which may include onions, increased 216% from 1986 to 1991. Over this period, Burkina reported 164% increases in imports, while the onion export/import balance decreased from +166% to +20% (Burkina Faso 1987-91). Official customs data show dramatic fluctuations in Nigerien market shares between 1986 and 1991, but no clear trend.

The mean exports reported in official Nigerien data from 1989 to 1992 are given in Table 7. Given the population distributions in these countries, the data suggest that there are significant additional opportunities throughout the region, especially in Ghana. The data also suggest that these figures are probably underestimated. For example, wholesalers

declare their exports in sacks rather than kilograms. Ghanaian wholesalers estimate that their sacks weigh 130 rather than 100 kilograms. There is surely some clandestine exporting across Niger's relative porous borders. Bribery may lead to undercounting and undervaluations. And subtracting exports of approximately 25,000 tons and Nigerien national consumption estimates of 16,000 tons from the production of approximately 199,000 tons leaves approximately 158,000 tons unaccounted for (Arnould and Mahatan 1994a).

We prospected the formal sector for interest in Nigerien onions. Little was detected. Neither formal sector firm contacted in Abidjan was interested in buying Nigerien onions. Both cited financial risk, limited availability, variable quality, storage risk, and transport headaches as obstacles to their involvement. A local Nestlé plant that uses dried onion in its food products manufacturing cited the rigid norms applied to the dried onion powder they use as an obstacle to substituting Nigerien onions. In contrast, hotels, schools, and other Ivorian and Togolese institutional buyers purchase them for their kitchens. Therefore, we concluded that demand for Nigerien onions will be consigned to popular consumer markets for the foreseeable future.

Conclusions

Three sets of conclusions derive from our research. The first involves the value of ethnography in producing data useful for policy dialogue (White 1990). In a region where formal record keeping is fragile, international language literacy is limited, and commercial and institutional practices are embedded in a variety of culturally particular arrangements, ethnography is well suited to collecting policy-relevant data. Typical of effective RAPs (Beebe 1995), we were able to identify, collect, and synthesize both qualitative and quantitative data from widely dispersed sources of varying quality. They enabled us to describe in detail a robust indigenous marketing channel.

In a political environment marked by volatility and uncertainty, and consequently where information management is a defensive strategy, multidisciplinary ethnography identified and gave voice to the conflicting interests at play in the marketing channel. Indeed, this research fueled and legitimated a national debate on the channel, in which representatives of most major stakeholders resolved for a neoliberal vision of limited state intervention into marketing and a reduction (albeit temporary) of informal rent seeking (Arnould and Mahatan 1994a; Lubeck 1992).

The second conclusion involves the value of our results for evaluating the distribution of benefits in the channels and the three myths about marketers. These results were reflected in an action plan and in the design of USAID's Agricultural Marketing and Export Promotion project (Arnould and Mahatan 1994b). We showed that all channel members stand to gain something from onion marketing, though farmers' share is relatively low. Farmers who sell standing crops or panic-sell at harvest do not realize the full benefits of their labor. However, weak earnings can also be attributed to farmer-to-farmer land-lease arrangements that do not necessarily benefit downstream channel members.

In terms of organization and income, our data should have mitigated belief in the first myth that the informal private sector consists of parasitic intermediaries who exploit farm-

ers and consumers. On the contrary, onion marketing entrepreneurs have grown a large regional consumer market, fueled local development, and increased off-farm incomes, all desirable outcomes in reigning development ideology (Liedholm and McPherson 1994). Incentives in the channel lead wholesalers to forward-buy and squeeze producer prices all they can, but competition between buyers, the growth of a large supply crowd, and the actions of assemblers and cooperatives forestall gross exploitation.

Our results also suggest that a second myth, holding that the private sector is collusive and oligopolistic, simply distorts the fact that successful marketers rely on close relationships with trusted partners to obtain supplies and liquidate stock. Furthermore, rent seeking, competition from onions arriving through emerging channels (Holland, Burkina, or Nigeria), and retailer opportunism forestall the concentration of market power in any group of wholesalers' hands. Assembly agents in a given market exert oligopolistic power, subject to competition from other markets and official rent seeking. The third myth is that private businesses realize supernormal profits from speculation. Our data on regional wholesale margins do not support this contention.

The third element of our conclusions consists of the ethnographically grounded policy recommendations summarized in Table 8. In accord with best practice (Ervin 2000), these recommendations generally follow theoretical currents (institutionalist) in African development thought (Lubeck 1992). Consistent with both the terms of reference of the research and the spirit of applied ethnography, we offer policymakers a holistic set of recommendations germane to macroeconomic policy and institutional reform, production, and farm gate marketing, wholesaling, and retailing. Together, these contextually specific proposals support development that bolsters entrepreneurial elements in the informal private sector while mitigating the institutional problems that typically plague turnkey development projects in West Africa (Carmody 1998).

Our macroeconomic proposals seek to regularize and formalize the market environment, reduce uncertainty and volatility in the channel, and reduce the likelihood that "entrenched interest groups" would "capture" a disproportionate share of benefits through corruption (Browne 1992; World Bank 1994). Similarly, farm gate marketing and production recommendations seek to improve input supply and increase investments in infrastructure and on-farm storage that would transfer benefits upstream to producers from other channel members, one of the key problems in African agriculture. Our recommendations pertaining to wholesaling are few, other than arguing against a role for the widely discredited centralized parastatals in the channel (Lubeck 1994). Wholesalers do a fairly good job under onerous conditions. Further liberalizing commercial activity seems like the best bet to improve wholesalers' performance and profitability. We envision considerable improvements in retailing through our recommendations. These range from efforts to encourage the penetration of onion retailing to underserved markets to improving the handling and branding of Niger's Violet du Galmi onions. The action plan and the design of USAID's Agricultural Marketing and Export Promotion project (Arnould and Mahatan 1994b) incorporates these recommendations.

Table 8. Policy Recommendations

Policy Domain	Recommendations
Macroeconomic	<p>Initiate counterpart fund to provide adequate salary support to customs, gendarmes, and police during a transition to a rule-governed administration.</p> <p>Support Ministry of Foreign Affairs/Cooperation efforts to negotiate suppression of internal customs and control points with ECOWAS partners.</p> <p>Hold round tables with truckers, wholesalers, customs, gendarmes, police, Ministry of Commerce, and Ministry of Plan/Finance on problems and progress toward resolution.</p> <p>Publish and broadcast in French and national languages regulations about vehicular maintenance, commercial licensing, liberalized export rules, and so forth, both in Niger and in Nigerien communities abroad.</p> <p>Monitor customs, gendarmes, and police checkpoints to ensure compliance with ECOWAS rules governing free circulation of people and goods.</p> <p>For a transitional period, reduce commercial licensing fees to a minimum. Use counterpart funds to defray lost GON revenues.</p>
Farm gate marketing	<p>Expand program of applied research and extension of improved on-farm storage on the basis of existing project models.</p> <p>Expand funding for harvest storage loans and deferred sales on the basis of Tarka project models.</p> <p>Improve telecommunications links between producing zones and consuming zones.</p> <p>Encourage projects to initiate input supply channels for seed and fertilizer.</p> <p>Reduce barriers to importing inexpensive pump sets.</p> <p>Provide funding to private sector contractors to develop labor-based feeder road construction projects on USAID–Accra model.</p> <p>Provide Food for Work funding for labor-based feeder road construction.</p>
Wholesalers	<p>Publish and broadcast in French and national languages regulations pertaining to vehicles, commercial licensing, liberalized export rules, and so forth, both in Niger and in Nigerien communities abroad.</p> <p>For a transitional period, reduce commercial licensing fees to a minimum. Use counterpart funds to defray lost GON revenues.</p>
Wholesale/retail marketing	<p>Fund private sector partner to begin import of plastic net sacks from Ghana or European supplier. Work with transporters to build transport into onion shipping. Explore feasibility of local sack production. Explore feasibility of producing local tags with "Galmi Onions" and "Produit du Niger" and orange, yellow, and green (national colors) labeling.</p> <p>Work with private sector actor to develop net packaging for local sales of onions and other fresh produce on the Flex Faso (Burkina Faso) model.</p> <p>Develop awareness-building radio and television commercials for broadcast in consuming countries promoting Galmi onions' spiciness, suitability for stewing, and healthful qualities (Ghana).</p> <p>Develop programs to strengthen and support channels through support to private sector in Niger and support to GON for ECOWAS negotiations on liberalizing the movement of perishables.</p>

Source: Arnould and Iddal 1992.

References

- Abdoul Azziz, Combarry, Aissa Diallo, and Zibio Alassane (1987), *Rapport de la Mission Commerciale Effectuée du 4 au 26 Avril 1987 en République du Cameroun, Congo, Gabon et Côte d'Ivoire*, photocopy. Niamey, Niger: République du Niger, Chambre De Commerce, d'Agriculture, d'Industrie et de l'Artisanat/Centre Nigérien du Commerce Extérieur.
- Arnould, Eric J. (1986), *Report of the Consulting Anthropologist*, Applied Irrigation Research Project, Cornell University. Niamey, Niger: Water Management Synthesis Project II/U.S. Agency for International Development.
- (1995), "West African Marketing Channels: Environmental Duress, Relationship Management, and Implications for Western Marketing," in *Contemporary Marketing and Consumer Behavior: An Anthropological Sourcebook*, John F. Sherry Jr., ed. Thousand Oaks, CA: Sage Publications, 109–69.
- and Sidi Mohammed Iddal (1992), *Export Marketing of Nigerien Onions*, The Agricultural Marketing Improvement Strategies Project. Niamey, Niger: U.S. Agency for International Development, The Post-Harvest Institute for Perishables, and Abt & Associates.
- and Chefferou Mahatan (1994a), *Atelier National. Commercialisation de l'Oignon du 17–24 Janvier 1994*, document de base. Niamey, Niger: U.S. Agency for International Development–Niger/République du Niger, Chambre De Commerce, d'Agriculture, d'Industrie et de l'Artisanat/ Centre Nigérien du Commerce Extérieur.
- and ——— (1994b), *Plan d'Action pour le Développement de la Filière de l'Oignon et de l'Ail*. Niamey, Niger: U.S. Agency for International Development, République du Niger, Chambre De Commerce, d'Agriculture, d'Industrie et de l'Artisanat, Centre Nigérien du Commerce Extérieur.
- and Melanie Wallendorf (1994), "Market-Oriented Ethnography: Interpretation Building and Market Strategy For-

- mulation," *Journal of Marketing Research*, 31 (November), 484–504.
- Arrachart, J.L. (1991), *Note sur Les Essais de Conservation des Oignons*, photocopy. Niamey, Niger: United Nations Development Program/International Labor Organization.
- Barhouni, Maliki (1990), *Etude sur la Commercialization des Principaux Produits Agricoles au Niger*, Projet PNUD/ONUDI/NER 88/003. Niamey, Niger: Ministère de la Promotion Economique, Direction du Développement Industriel.
- Beebe, James (1995), "Basic Concepts and Techniques of Rapid Appraisal," *Human Organization*, 54 (Spring), 42–51.
- Benedict, Ruth (1946), *The Chrysanthemum and the Sword: Patterns of Japanese Culture*. Boston: Houghton Mifflin.
- Browne, R. (1992), "Alternative Policy Frameworks for African Development in the 1990s," in *Beyond Structural Adjustment in Africa*, J. Nyang'or and T. Shaw, eds. New York: Praeger.
- Burkina Faso (1987, 1988, 1989, 1990, 1991), *Statistiques du Commerce Extérieur. Exportation-Importation, Pays/Produits*. Ouagadougou, Burkina Faso: Institut National de la Statistique et de la Demographie.
- Carmody, Padraig (1998), "Constructing Alternatives to Structural Adjustment in Africa," *Review of African Political Economy*, 25 (March), 25–46.
- Chambers, Erve (1985), *Applied Anthropology: A Practical Guide*. Prospect Heights, IL: Waveland Press.
- Clark, Gracia (1994), *Onions Are My Husband*. Chicago: University of Chicago Press.
- Cohen, Abner (1971), "Cultural Strategies in the Organization of Trading Diaspora," in *The Development of Indigenous Trade and Marketing in West Africa*, Claude Meillassoux, ed. Oxford: Oxford University Press, 266–83.
- Coudert, Jean P.B. (1980), *Culture et Commercialisation des Oignons dans les pays du Sahel et l'Afrique de l'Ouest: Leur développement dans le cadre des petites exploitations maraîchères*, Rapport ITC/DIP/8, photocopy, Centre de Commerce International/United Nations Conference on Commerce and Development/General Agreement on Tariffs and Trade.
- Darbera, Richard and Robert Hall (1992), *Local Public Finance and Institutional Reform in Niger*, Decentralization Finance and Management Project. Burlington, VT: Associates in Rural Development/U.S. Agency for International Development.
- Ervin, Alexander M. (2000), *Applied Anthropology: Tools and Perspectives for Contemporary Practice*. Boston: Allyn & Bacon.
- Gervais, Myriam (1995), "Structural Adjustment in Niger: Implementations, Effects & Determining Political Factors," *Review of African Political Economy*, 22 (March), 25–40.
- Goggin, J. (n.d.), *Storage and Processing: Review of Literature and Assessment of Constraints*, photocopy. Niamey, Niger: U.S. Agency for International Development/Agricultural Development Office.
- Green, Reginald Herbold (1998), "A Cloth Untrue: The Evolution of Structural Adjustment in Sub-Saharan Africa," *Journal of International Affairs*, 52 (Fall), 207–32.
- Groupe d'Intérêt Economique ALBASA (1992), "Dossier du Projet ALBASA," photocopy, Niamey, Niger.
- Guba, Egon G. (1978), *Toward A Methodology of Naturalistic Inquiry in Educational Evaluation*. Los Angeles, CA: Center for the Study of Evaluation, UCLA Graduate School of Education, University of California.
- and Yvonna S. Lincoln (1981), *Effective Evaluation: Improving the Usefulness of Evaluation Results Through Responsive and Naturalistic Approaches*. San Francisco: Jossey-Bass.
- Hahn, Robert A. and Kate W. Harris, eds. (1999), *Anthropology in Public Health: Bridging Differences in Culture and Society*. New York: Oxford University Press.
- Harsch, Ernest (1998), "Burkina Faso in the Winds of Liberalization," *Review of African Political Economy*, 25 (December), 625–41.
- Holtzman, John, Jerry Martin, and Richard Abbott (1988), *Operational Guidelines for Rapid Appraisal*, Agricultural Marketing Improvement Strategies Project, S&T/RD Project 936-5447. Washington, DC: Abt & Associates, U.S. Agency for International Development, Science & Technology, Rural Development.
- Iddal, Sidi Mohamed (1991), *Trip Report on Onions*, manuscript. Niamey, Niger: U.S. Agency for International Development/General Development Office.
- J.E. Austin Associates and The Services Group (1991), *MAPS Niger-Phase II: Private Sector Description*, Final Report, Private Enterprise Development Support Project II. Ernst & Young/U.S. Agency for International Development.
- Keller, Jack, Terrence Hart, Donald Humpal, Ray Norman, and Thomas Zalla (1987), *Niger Irrigation Scheme Case Studies*, Water Management Synthesis II Project Joint Field Study/Workshop, WMS Report 87, U.S. Agency for International Development Contract AID/DAN-4127-C-00-2086-00. Logan, UT: Utah State University.
- Krogt, Stijn van der and Andries Klaassebos (1991), *Les Echanges Frontaliers de Quelques Produits Vivriers entre le Bénin et le Niger*. Amsterdam: Université d'Amsterdam, Faculté des Sciences Economiques et Econométrie, ISMOG (Département d'Economie Rurale et de Développement).
- Lev, Larry S. and Millie A. Gadbois (1988), *Rapid Reconnaissance Study of Nigerien Onion Subsector: A Policy Oriented Analysis of Market Performance*, GTS Reports No. PIP/Niger/Jan 88/99. Moscow, ID: Post-Harvest Institute for Perishables/U.S. Agency for International Development.
- Liedholm, Carl and Michael McPherson (1994), "Small Enterprise Employment Growth in Rural Africa," *American Journal of Agricultural Economics*, 76 (December), 1175–82.
- Lovejoy, Paul E. (1973), "The Kamberin Beriberi: The Formation of a Specialized Group of Hausa Kola Traders in the Nineteenth Century," *Journal of African History*, 14 (2), 633–51.
- Low, Setha, ed. (1999), *Theorizing the City: The New Urban Anthropology Reader*. New Brunswick, NJ: Rutgers University Press.
- Lubeck, Paul M. (1992), "The Crisis of African Development: Conflicting Interpretations and Resolutions," in *Annual Review of Sociology*, Vol. 18. Judith Blake, ed. Palo Alto, CA: Annual Reviews Inc., 519–40.
- Mahamadou, Saley (1987), *La Commercialisation des Oignons dans le Département de Tahoua: Cas de la Zone de Galmi*. Cotonou, Bénin: Centre Panafricain de Formation Cooperative.
- Norman, W. Ray and Abdou Sani (1990), "Irrigation Water Costs Among Different Sahelian Systems: The Case of Niger," paper presented at the 1990 International Winter Meeting, The American Society of Agricultural Engineers, Chicago (December 18–21).
- Ouédraogo, Ismael (1991a), *Niger: Synthesis of NEPRP Findings and Recommendations—An Agricultural Marketing and*

- Agribusiness Agenda, Agricultural Policy Analysis Project, Phase II, Report No. 119, U.S. Agency for International Development Contract No. DAN-4084-Z-00-8034-00. Cambridge, MA: Abt & Associates.
- (1991b), *Niger: The Impact of Government Policies on Onion Production and Marketing in Tahoua Region: A Rapid Assessment of Recent Developments*, Agricultural Policy Analysis Project, Phase II, Report No. 120, U.S. Agency for International Development Contract No. DAN-4084-Z-00-8034-00. Cambridge, MA: Abt & Associates.
- Pottier, Johan, ed. (1993), *Practicing Development: Social Science Perspectives*. London and New York: Routledge.
- Projet Basse Vallée de la Tarka, Service de la Production Agricole (1990), *Compte Rendu de la Campagne de Contre-Saison, 1990-1991 sur les Périmètres Collectifs*. Madaoua: Fonds Européen de Développement, Projet Basse Vallée de la Tarka, Service de la Production Agricole.
- République du Bénin (1987, 1988, 1989, 1990, 1991), *Statistiques du Commerce Extérieur. Exportation-Importation. Pays/Produits*. Cotonou, Bénin: République du Bénin/Ministère du Commerce et du Tourisme.
- République du Côte d'Ivoire (1987, 1988, 1989, 1990, 1991), *Statistiques du Commerce Extérieur. Exportation-Importation. Pays/Produits*. Abidjan, Côte d'Ivoire: Ministère du Commerce.
- République du Niger (1985), *Evaluation de l'Impact de la Formation et de Ses Retombées au Sein de Projets Productivités de Maradi, Niamey et Zinder*. Niamey, Niger: Cellule d'Analyse et de Synthèse. Direction de l'Evaluation et de la Programmation des Projets, Ministère du Plan, République du Niger.
- (1990), *Commerce General. Balance Commerciale par Pays/Produits. Import. Niger, Année 1990*. Niamey, Niger: République du Niger/Ministère du Plan et des Finances, Direction Generale des Douanes.
- (1991a), *Atelier de Réflexion sur la Production, la Conservation et la Commercialisation de l'Oignon*. Niamey, Niger: République du Niger, Ministère de l'Agriculture et de l'Élevage, Projet Développement des Organisations Rurales, and Cooperative League of the USA.
- (1991b), *Rapport Annuel: Campagne de Cultures de Contre-Saison 1990-1991*. Niamey, Niger: Ministère de l'Agriculture et de l'Élevage, Direction de l'Agriculture, Service des Statistiques Agricoles.
- (1991c), *Résultats Définitifs de la Campagne Agricole, 1990*. Niamey, Niger: Ministère de l'Agriculture et de l'Élevage, Direction de l'Agriculture, Service des Statistiques Agricoles.
- (1991d), *Rapport Final: Enquête Cultures de Contre Saison, 1991*, photocopy. Keita, Niger: République du Niger, Département de Tahoua, Service de l'Agriculture de l'Arrondissement de Keita.
- République Togolaise (1987, 1988, 1989, 1990, 1991), *Statistiques du Commerce Extérieur. Exportation-Importation. Pays/Produits*. Lomé, Togo: Ministère du Commerce.
- Saul, Mahir (1987) "The Organization of a West African Grain Market." *American Anthropologist*, 89 (March), 74-95.
- Schensul, Jean J., Margaret D. Lecompte, and G. Alfred Hess, eds. (1999), *Using Ethnographic Data*. Walnut Creek, CA: Altamira Press.
- Seydou, Idrissa and Larry Lev (1988), *Rapport de Mission de Prospection Effectuée du 16 au 23 Janvier 1988 en République Populaire du Bénin et en République de Côte d'Ivoire*. Niamey, Niger: Chambre de Commerce, Centre Nigerien du Commerce Extérieur.
- Smith, John Warren (1986), *Onion Marketing in Niger*, photocopy. Niamey, Niger: Cooperative League of the USA.
- Speece, Mark (1990), "Evolution of Ethnodominated Marketing Channels: Evidence from Oman and Sudan," *Journal of Macromarketing*, 10 (Fall), 78-92.
- Stewart, Alexander (1998), *The Ethnographer's Method*. Thousand Oaks, CA: Sage Publications.
- Traeger, Lillian (1981), "Customers and Creditors: Variation in Economic Personalism in a Nigerian Market System," *Ethnology*, 20 (April), 133-46.
- Udry, Christopher (1994), "Risk and Insurance in a Rural Credit Market: An Empirical Investigation in Northern Nigeria," *The Review of Economic Studies*, 61 (July), 495-526.
- U.S. Agency for International Development (1991), *A Strategic Framework for Promoting Agricultural Marketing and Agribusiness Development in Sub-Saharan Africa*, Publication No. 91-1. Washington, DC: U.S. Agency for International Development, Agriculture and Natural Resources Division, Office of Technical Resources, Africa Bureau.
- U.S. Agency for International Development-Niger (1992), *PID: Agriculture Marketing and Export Promotion*, Project 683-0274. Niamey, Niger: U.S. Agency for International Development.
- Wallendorf, Melanie and Russell W. Belk (1989), "Assessing Trustworthiness in Naturalistic Consumer Research," in *Interpretive Consumer Research*, Elizabeth C. Hirschman, ed. Provo, UT: Association for Consumer Research, 69-84.
- White, Louise G. (1990), "Policy Reforms in Sub-Saharan Africa: Conditions for Establishing A Dialogue," *Studies in Comparative International Development*, 25 (Summer), 24-42.
- World Bank (1994), *Adjustment in Africa: Reforms, Results, and the Road Ahead*. New York: Oxford University Press.
- Zalla, Thom, Glenn Anders, Walter Firestone, Michael Gould, Emile Malek, Emmy Simmons, Malcolm Versel, and Teresa Ware (1984), *Niger Irrigation Subsector Assessment, Volume II: Annexes*. Niamey, Niger: U.S. Agency for International Development.

