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RURAL MARKETING CONSTRAINTS IN SOUTH KORDOFAN, SUDAN

With 3 figures and 2 tables

MARK SPEECE

Zusammenfassung: Hindernisse bei der Vermarktung landwirtschaftlicher Produkte in Süd-Kordofan, Sudan

Während sich die Planer in den Entwicklungsländern meist auf die Steigerung der landwirtschaftlichen Produktion konzentrieren, wird häufig übersehen, daß die Vermarktung von landwirtschaftlichen Erzeugnissen von entscheidender Bedeutung für die Entwicklung des Agrarsektors ist. Der vorliegende Aufsatz zeigt am Beispiel von Süd-Kordofan, daß die Verbesserung der landwirtschaftlichen Produktion nicht isoliert von den Fragen der Vermarktung gesehen werden darf. Probleme im Vermarktungssystem haben bisher in Kordofan die Versuche behindert, den Bereich des Regenfeldbaus weiterzuentwickeln, weil der Anreiz für die Bauern gering blieb, über den Eigenbedarf hinaus Überschüsse zu produzieren. Die Schwierigkeiten der Vermarktung können drei Kategorien

zugeordnet werden: 1. Eingriffen des Staates, 2. Mängeln der materiellen und institutionellen Infrastruktur sowie 3. Einflüssen der natürlichen Umweltbedingungen. Eine Prüfung dieser Bereiche macht deutlich, daß den Vermarktungsproblemen in der Regel durch vergleichsweise einfache politische Maßnahmen begegnet werden könnte.

Introduction

Marketing is a fundamental activity in agricultural economic development. Unfortunately, development planning often addresses only production issues, although this is usually not sufficient to bring increased prosperity to most agriculturally based economies. Surplus crop must be moved from the farm to areas of

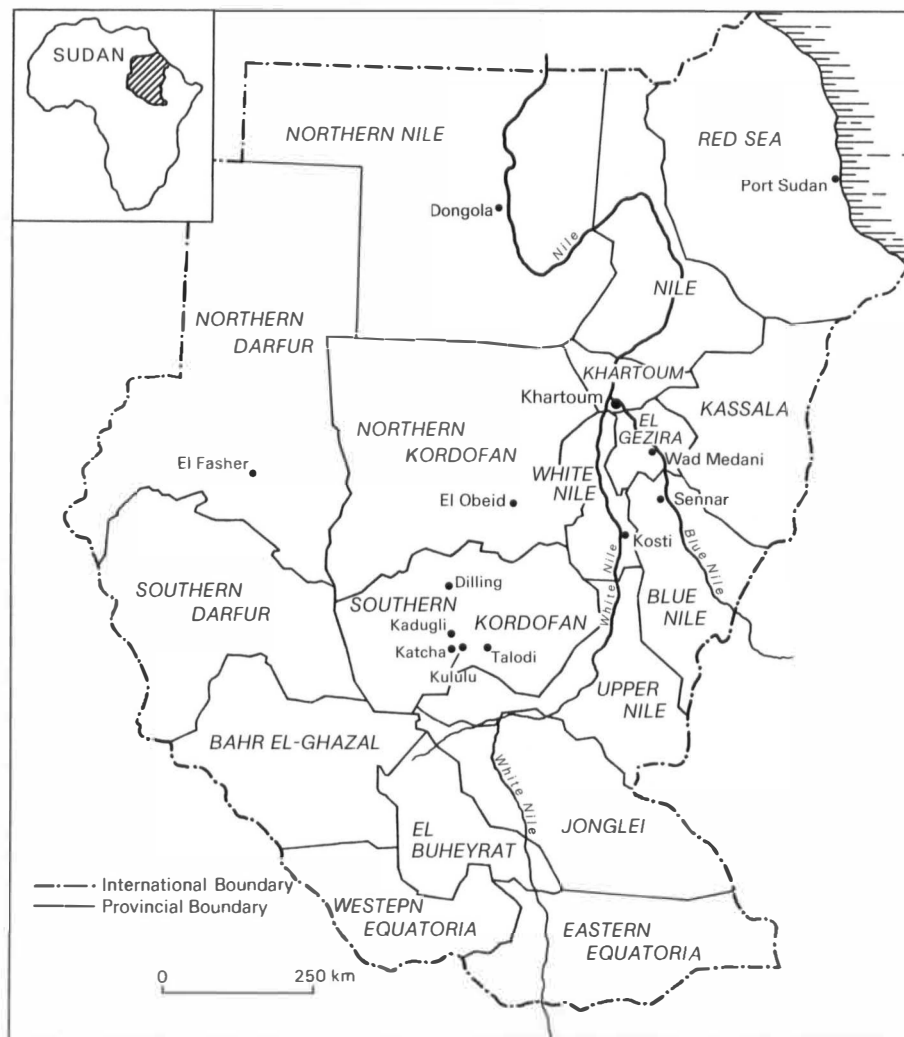


Fig. 1: Map of Sudan

Source: SPEECE 1987

Karte des Sudan

demand, or neither farmers nor consumers benefit from production above what can be consumed on the farm. Even when agricultural products do reach them, consumers benefit only if their purchasing power has increased through access to greater volumes and better assortments at lower prices. Furthermore, technical improvements which allow increased production usually require new agricultural inputs, which the market or some other mechanism must supply.

The nature and organization of the market mechanism itself can influence how much and what is produced by farmers, which translates into how much surplus and what kind of assortment consumers will see. Farmers must receive a satisfactory return for

their crops or they will not continue to produce for market sale. Thus, the effectiveness and efficiency of the marketing system in moving goods and services is critical to the achievement of development goals. Marketing should be a central issue in any developing economy, and marketing structures in the economy need to be extensively analyzed. This study illustrates these issues by examining marketing constraints which existed in South Kordofan, Sudan, in the mid-1980s.

Data on marketing in Kordofan was gathered by the *Western Sudan Agricultural Research Project (WSARP)*, an *Agricultural Research Corporation, Sudan (ARC)*, *World Bank*, and *U.S. Agency for International Development (USAID)* project (SPEECE 1985). Kordofan lies in the

vast rainfed agricultural sector of central Sudan (Figure 1), which has become increasingly important due to failure by the irrigated sector to achieve goals set in the early 1970s (Sudan 1970; EBRAHIM 1983, D'SILVA 1985, World Bank 1985, WALLACH 1988). WSARP was one component of attempts to shift some effort back to the rainfed sector. The marketing study was undertaken because planners knew almost nothing about issues such as how movement of agricultural products was organized, or how public policy affected marketing structures. Such lack of knowledge has been cited as an important impediment to better development planning in Sudan (World Bank 1985).

South Kordofan agricultural systems

Marketing structures have evolved to serve Kordofan's production systems, and both marketing and production are heavily influenced by the physical environment. South Kordofan is semi-arid. As in other such dry regions, life is precarious even when inhabitants think conditions are good. Only one crop per season can be raised in Kordofan; there is no surface water which could serve as an irrigation source. This one crop must provide food for the entire year until the new crop is harvested in the next season. Nearly all rainfall comes in the late summer rainy season. Rains occasionally begin as early as late May and sometimes last into October, but most come in July and August. The amount of annual rainfall is highly variable, and the intensity and spacing of rains are highly unreliable (OLIVER 1969, SPEECE 1982, TRILSBACH a. HULME 1984). LEBON (1968) specifically cited shortage and unreliability of water supply as a major contributing factor in Kordofan's economic underdevelopment.

Sedentary agriculture is the primary economic activity, and primary crops are sorghum, groundnuts, and sesame. Nomadic livestock production is also common, and perhaps a quarter of South Kordofan's nearly 1.5 million people are nomads, raising mainly cattle, but also some sheep and goats. There are some large scale mechanized schemes, but the vast majority of farmers are small scale subsistence producers. Traditional farmers in South Kordofan are mostly Nuba, and subsistence agriculture in the province is largely organized in Nuba farming systems, which utilize at least two separate farms. The house farm, *jubraka*, averages slightly under one feddan (1.038 acres) and is typically located near each family's living compound at the foot of the moun-

tains. Far farms are located in the plains on the characteristic cracking clay soils of South Kordofan.

Main crops on the *jubraka* are maize and short-maturing sorghum, but groundnuts, cowpeas, and a wide variety of other vegetables are also grown. Women traditionally manage and work the *jubraka*. They use their crops both for family consumption in the several months "hunger period" before the main harvest and to supplement family income through market sale. Far farms average around eight feddans, often scattered in two or more fields, and are primarily managed by men, although women also work on them extensively. Main crops include long-maturing sorghum and sesame, although some cowpeas and groundnuts are also grown. The Nuba utilize the *nafir* institution, a reciprocal labor arrangement among the population of one or several villages, and *nafir* groups do much of the work on the far farms.

Land preparation begins around April, and planting begins after the onset of summer rains, although some farmers risk their seed by anticipating the rains and planting beforehand. Most planting is in June and July. *Jubraka* harvests may begin in late August, but most *jubraka* crops mature and are harvested in September and October. The harvest in far fields begins in November, and most crops are in by December and January. This harvest provides most food and cash needs (through market sale) to the family throughout the year. Families have used most of their stores by mid-summer, and the mid-summer period before substantial harvests begin is called the "hunger period". Poor harvests because of droughts, unreliable timing, or spatial variation of rains extends the length of the "hunger period" and many people may face starvation (ARAUJO 1981, TEITELBAUM 1984, ABU SABAH a. PATRICK 1984, NMAC/GTZ 1985, WSARP 1985).

Agricultural marketing channels

In any marketing channel, certain functions must be performed to move goods from producer to consumer. One set of functions involves such things as buying/selling, which entails identifying, locating, and negotiating with parties interested in selling/buying products. A second set has to do with the actual physical movement of product. Agricultural commodities must be assembled, transported, stored, graded/sorted, and broken down into lot sizes which customers/consumers are willing to buy. A third major set concerns facilitating functions. Financing/credit provisions must be made, risk must be assumed

on transactions, and market information must be available. Typical channels consist of levels of wholesalers and retailers, who assume responsibility for performance of various functions. In economies where producers carry on large scale operations, though, such as in Western industrial economies, producers retain considerable control over many marketing functions.

Channels in South Kordofan's agricultural sector are similar to traditional marketing structures found elsewhere in the Middle East (BOYD, EL-SHERBINI a. SHERIF 1961, SAMLI 1964) and Africa (NORMAN, SIMMONS a. HAYS 1982). Most producers are small scale, so channel members rather than producers retain responsibility for most marketing functions. However, capital scarcity, poor transportation, and inadequate storage facilities, among other things, also keep marketing operations relatively small scale. The generally risky conditions dictate that there be many channel members so that risk is widely shared. The result is long, complex marketing channels with multitudes of middlemen.

Still, agricultural marketing channels at most levels in South Kordofan are quite efficient and effective given the adverse conditions found there. To be sure, farmers do not always receive prices which are as high as they would prefer, and consumers cannot always buy as low as they might want. However, this is usually because of market conditions, not exploitation. In the free commodity markets, it is very easy to become a small-scale retailer or wholesaler, so small-scale merchants are subject to intense competition. Many small businesses fail for lack of good business skills, but there is ample opportunity for successful small operators to gradually build their businesses to fairly large scale, so there is always new competition coming into higher levels of channels. These conditions do not allow excessive profits. Some successful merchants certainly do become rich, but they do so by gaining small profit margins over large volume, not by exploiting farmers or customers on individual transactions (SPEECE 1985, 1987).

Some level of profit must be retained. Performing any marketing function entails costs, and merchants must cover these costs in their prices or their business will fail. Some observers have mistakenly assumed gross margins to be profit margins, and criticized Kordofan merchants for excessive profits (e. g., ARAUJO 1981). In fact, most of the gross margins in free markets in Kordofan go to cover costs of providing marketing functions. The real problems stem from conditions imposed upon marketing. These add costs to marketing functions, increase risks, restrict

competition, and reduce options available to buyers and sellers, thus distorting the free market and indirectly inhibiting agricultural production. Such constraints can be categorized into three broad areas: limitations imposed by political intervention, by inadequate infrastructure (physical or institutional), and by physical environment. These issues are discussed below, and policy recommendations are offered which illustrate possible means of overcoming the constraints.

Government intervention in marketing

Government intervention has taken many forms. Control of cotton marketing, initiated around 1970, has resulted in the near end of cotton production in Kordofan (Figure 2). Farmers receive about 18 percent of export prices, but over 30 percent is required to make cotton cropping economically attractive. The Gum Arabic Company was given a monopsony in 1969, which led to drastic production declines. Oil seed production consistently dropped until public control over that market was ended in the early 1980s. Since then, producer shares have risen to between 35 and 50 percent and production of groundnuts and sesame has recovered. In addition to discouraging production, government marketing corporations are so inefficient that they constantly drain the public budget. For example, the Nuba Mountain Agricultural Corporation, which controls cotton marketing, has posted large deficits every year since it was set up in 1970, and had accumulated losses of nearly £S 15 million by 1985 (Hunting 1981, NMAC/GTZ 1985, SPEECE a. GILLARD-BYERS 1986, SPEECE 1989b).

Public marketing of agricultural inputs has been no more successful. Sometimes the government competes with the private sector, though not very successfully. For example, most farmers prefer higher priced, higher quality tractor work by private merchants when they can afford it. Some feel that no tractor at all is better than the poor job done by state tractor services. For most inputs, such as fertilizer, seed dressing, pesticides, and improved seed varieties, the government does not compete, but holds a monopoly. Policy gives the irrigated sector top priority, very little is allocated to the rainfed sector, and when these inputs are made available, they are for use in mechanized agriculture. Many small farmers would like to buy such inputs, and technical research has clearly shown economic benefits from their increased use, but they are simply not available to small farmers (SPEECE 1985, 1987).

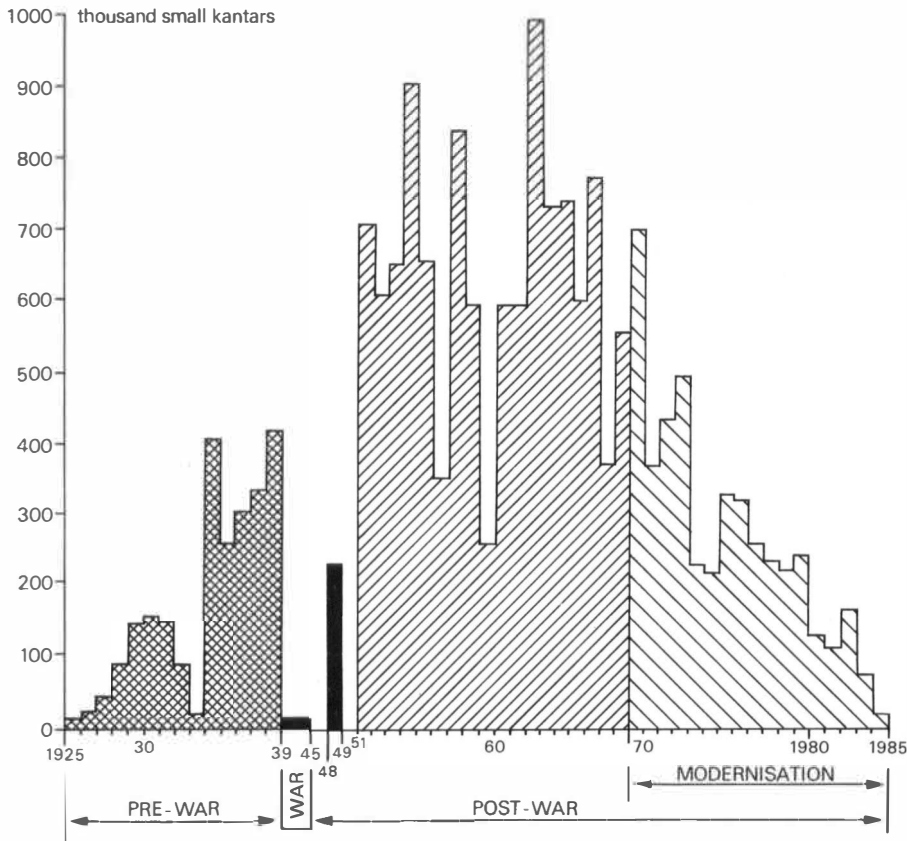


Fig. 2: Cotton production in the Nuba Mountains area
 Source: NMAC/GTZ 1985
 Baumwollproduktion im Gebiet der Nuba-Berge

An artificially strong £S is a disguised tax which reduces the domestic price farmers receive for exported crops. Table 1 illustrates how free exchange rates would have improved groundnut prices in 1982. Imports have artificially low prices, sometimes with additional subsidies. Bread subsidies have made artificially cheap imported wheat much more attractive to the consumer than domestic sorghum (D'SILVA 1985, 1986), reducing incentives to produce and market sorghum. Domestic price controls on agricultural products also discourage production, leading to artificial shortages. Kadugli officials have been among the most energetic in upholding price regulations, especially on meat, and in that city many price controlled goods simply became unavailable in the early 1980s. They could still be purchased in the outlying villages, where the regulators did not reach, but it was not profitable for livestock producers or traders to move their stock to Kadugli at official prices. Renewed efforts to enforce price controls in

1989 have led to similar results (Louis Berger 1983, Sudan Studies Association Newsletter 1989).

Restrictive licensing policy inhibits entry of competitors into some markets. In Kordofan, upper levels of wholesaling are sometimes less competitive because potential new channel members cannot get a license. The government has been particularly reluctant to grant licenses to exporters in the hide industry, for example. As a result, there are only a few firms licensed to export, and it is not difficult to keep producer prices low. Producer living standards in Western Sudan, a major livestock region in the country, are held down to benefit large, urban-based export firms. Policy also restricts entry of large grain wholesalers into the market¹⁾.

Policies for achieving increased agricultural output in Kordofan would eliminate most of the government

¹⁾ SPEECE a. GILLARD-BYERS (1986) contains more detailed discussion of these issues of government intervention.

Table 1: Groundnut farm gate prices and merchant profits under various assumptions in 1982

Erzeugerpreise und Händlergewinne für Erdnüsse 1982 unter verschiedenen Annahmen

Situation:	1	2	3	4	5	6
Producer price (£S/metric ton)	384	434	514	480	458	504
Producer share (%)	39	37	44	41	39	43
Merchant gross margin (£S)	267	382	267	315	347	281
Merchant profit margin (%)	7.3	16.0	6.1	10.3	13.0	7.3

Situations:

- 1: Actual market prices. Regulations required sixty percent of export revenue to be converted at £S 1.32/\$; forty percent at the market rate of £S 1.80/\$. With this exchange regime, the cotton export price was £S 983/ton. Situations 2-6 are hypothetical prices with 100 percent conversion at market rate, which result in an export price of £S 1170/ton. The situations assume:
- 2: merchants paid what farmers had originally asked in the auction where this data was gathered. The original price was not profitable to merchants under artificial exchange rates, but would have been under free rates.
- 3: merchants accepted the same £S gross margin that they had accepted under artificial rates.
- 4: merchants received the same percentage share of export price that they had accepted under artificial rates.
- 5: sellers in the auction received the same percentage share as they had accepted under artificial rates.
- 6: merchants operated with the same percentage profit margins as they had under artificial rates.

Source: SPEECE 1987, derived from market prices cited in *Louis Berger* 1983

intervention noted here. The government should not operate marketing channels. It should let financial markets determine exchange rates, let commodities markets determine crop prices (cease price controls and subsidies), and eliminate licensing policies which restrict new competition. Dissolving public corporations in Kordofan would allow resources to be shifted to those areas where public intervention is greatly needed. The Nuba Mountain Agricultural Corporation lost over £S one million in 1984/1985 alone (*NMAC/GTZ* 1985), which could have been allocated to programs that enhanced production instead of discouraging it. A great many observers have pointed out to Sudan the need for reform in these areas. The *World Bank* (1982), for example, specifically called for shifting reliance to the private sector in rainfed agriculture areas.

Physical infrastructure deficiencies

Government intervention is needed in some areas, because individual firms cannot overcome system-wide deficiencies in infrastructure. Transportation and storage facilities are very poor in Kordofan. During the rainy season, for example, transport is seriously restricted, and shipping rates can increase up to 700 percent during the late summer and early fall. Some wholesalers try to ship large quantities to customers or partners in more remote areas before the rainy season starts, so that they can stockpile to avoid excessive transport costs. Poor storage limits this strategy for perishable products. These problems restrict the ability of village shopkeepers to operate profitably and competitively. Large operators can deal with the high cost of poor roads and inadequate storage by spreading the cost over a large volume. Small operators must either take losses or substantially raise consumer prices (or lower producer prices) to remain profitable (SPEECE 1985, 1987).

One grain wholesaler we interviewed stated that poor transportation during the rainy season helped his business. This merchant operated on a regional scale, and was not supplied from outside Kordofan. Transportation problems limited the movement of grain (including free Relief Aid grain) into Kordofan and shielded him from competition with outside merchants. Such examples make it clear that transportation deficiencies (mainly lack of all-weather roads) significantly raise costs to consumers and lower prices to producers. Sometimes, as in this case, this is because local merchants take advantage of reduced competitive pressure. Usually, though, it is because poor road systems make transportation expensive and unpredictable, and poor storage makes it difficult to avoid seasonal transportation problems. Merchants who import products into Kordofan would clearly prefer to avoid higher costs and the necessity of raising prices if they could (SPEECE 1985, 1987).

Storage constraints reduce the ability of channel members to overcome predictable transportation problems. Traditional storage methods actually work well for small volumes, and small farmers generally face little loss in storing their crops for up to about nine months. However, traditional methods are not adequate for large volumes. Grain wholesalers lose about 20 percent when holding grain up to half a year, and nearly 50 percent of crops held for the whole year. *Louis Berger* (1983) shows that if a merchant in Kordofan holds grain for six to nine months, prices must have risen at least 72 percent for him to break even. Together with high transportation costs, these

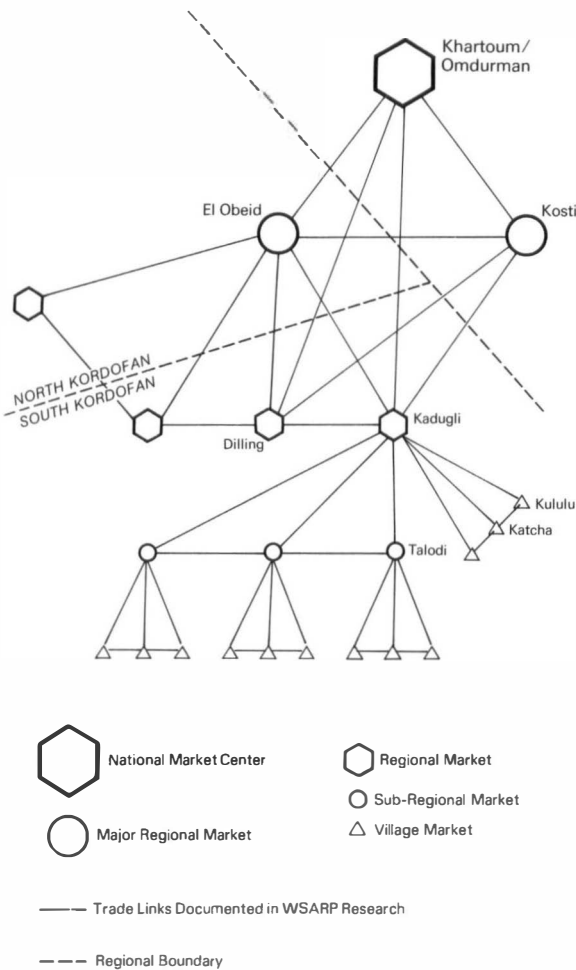


Fig. 3: Spatial market structure in South Kordofan, 1985
 Source: SPEECE 1987
 Räumliche Marktbeziehungen in Süd-Kordofan 1985

storage problems contribute substantially to the very high prices faced by consumers in the pre-harvest months. Intensified regulation of merchants cannot hold prices down in such situations, because they are high mainly due to infrastructural problems.

Government investment in a network of all-weather roads is needed. Of course, many development planners recognize this (BORS DORF a. HAQUE 1984, USAID 1985). But projects must concentrate on feeder roads and a regional network, or lower level market centers may decline. COUGHENOUR a. NAZHAT (1985) report that some villages in North Kordofan have suffered reduced levels of economic activity and fewer shops, which may be tied to be construction of trunk roads between al-Obeid and other large towns without many feeder roads. South Kordofan is

developing many horizontal links within its market hierarchy (Figure 3), and these links need to be strengthened. Costs and risks are reduced for low level channel members when the market structure affords many options, but increased if trade is restricted to major centers by transportation networks. Local and regional trade usually offers producers and small traders better deals and less risk than does involvement in supplying distant national and/or international markets.

Government investment in modern storage facilities is also essential (and recognized; BORS DORF a. HAQUE 1984, USAID 1985). Most merchants feel they have insufficient expertise to manage storage facilities. They are reluctant to invest in them, preferring to rent storage space. Provincial governments should be granted ownership of publicly financed facilities, so that storage policy remains closely attuned to local market needs. Facilities should be run on a profit-making basis. Cumulative storage losses currently limit the ability of merchants to hoard grain, because losses may rise faster than prices. With better facilities, losses will be lower, and fees must be correspondingly higher to discourage hoarding. Management contracts should be granted to private firms and renewed based on acceptable profit performance. Aside from the public sector's dismal performance in operating efficiently, expertise is in short supply in government, but more readily available in the private sector. Over time, such a plan would increase private sector experience with storage management, and eventually lead to increased private sector investment in storage facilities.

Lack of institutional infrastructure

Credit, an important facilitating function, is only available to small farmers through the high cost, traditional sheil system. In this system, loans are valued at prevailing commodity market prices. At harvest they are repaid with crops, now valued at lower harvest-time prices. Merchants do not really earn exorbitant profits, but actually lose if the default rate exceeds about 20 percent. Nevertheless, farmers clearly lose when they must repay loans in a commodity worth substantially less than when the debt was incurred. Because the government covers its constant deficit, the Agricultural Bank offers loans at lower interest. However, state institutions are usually unwilling or unable to deal with small farmers. Even when they do, terms may not be much better than those available through the sheil system. The Agri-

cultural Bank and the Nuba Mountain Agricultural Corporation also usually require repayment at harvest time, when the farmers' assets (crops) have low values, and sometimes even set prices below the already low prevailing market prices.

Farmers need mechanisms which allow them to avoid selling immediately upon harvest to pay debts or to resupply the family's stocks. At harvest time, prices are low, labor demands are high, and farmers must utilize lower return channels within the village because there is no free time to assume more marketing functions. With more time, they could perform more marketing functions themselves, bypass the lowest levels of the marketing channel, and gain higher shares of prices which were themselves higher than in the immediate post-harvest period. Such mechanisms would also help consumers by reducing seasonal price differentials. A key part of such a mechanism would be credit for small farmers, and since large institutions rarely lend to them, village level credit cooperatives would probably have to offer this credit.

Such co-ops could grant production loans in the planting season and short-term consumer loans at harvest time to come due later when prices had stabilized at higher levels. Local loan decisions and community pressure on borrowers greatly decrease default rates, so costs to such co-ops would be lower than for large institutions. Cost would also be lower for the borrower, since the portion of the crop allocated to repaying the loan would be less. Further, increased competition would force lenders to improve their terms. As with storage, however, credit should not be subsidized, but must reflect real operating costs. To generate cash, co-ops could engage in other activities. For example, WSARP was successful at introducing ox-carts into several villages in South Kordofan. These ox-carts were owned by village co-ops, managed by village leaders, and rented to villagers to haul crops and other goods. They freed labor during labor shortage periods, and helped small farmers bypass very expensive local hauling methods (WSARP 1985).

Market information of many kinds is also deficient in South Kordofan, although agricultural commodity price information is generally widely known. However, information about inputs such as hybrids, fertilizers, or seed dressing is very poor. Farmers do not understand the concept of hybrids; do not know planting instructions or growth characteristics of new varieties they are asked to try; or do not know that fertilizer can be effective outside of the irrigated sector. Since extension services are nearly non-existent in

Kordofan, farmers would learn more about such innovations if agricultural inputs were available through private marketing channels, even in small quantities. COUGHENOUR a. NAZHAT (1985) found that the most important sources of information were merchants and traders who carried the inputs and personal contacts.

Now, government policy rarely allows agricultural inputs into private channels, so merchants do not know much about them, and few of a farmer's personal contacts have much experience. However, if fertilizer, e. g., were available on the private market, most of it would be sold in rainfed agricultural areas, including Kordofan, because merchants would not be able to compete with government suppliers in the irrigated sector. Merchants and farmers who bought fertilizer would gain experience. It is also likely that they would allocate some of it to their own research programs. WSARP found that farmers who were given seed or fertilizer for on-farm trials often conducted their own trials also. Information they gained from use and experiment with agricultural inputs was spread much more rapidly than by any means WSARP could use.

Institutions are an important source of information locally (COUGHENOUR a. NAZHAT 1985). Agricultural research projects such as WSARP or INTSORMIL must incorporate local farmers into on-station research programs and increase the use of on-farm trials. Then, the common problem of how to introduce an innovation to farmers would disappear. Farmers would see first-hand how it worked, could evaluate its usefulness, and would know how to use it correctly from hands-on experience. Farmers themselves would lead the introduction of promising new technology (c. f. also TRAIL 1985). Projects, though, reach relatively few people on a regional scale. Therefore, information must also be disseminated by other means. Radio is quite popular, but is not currently used much for agricultural education. Programs should be developed which provide understandable information about such things as fertilizer, insecticides, new seed varieties, and other inputs, and to explain basic agricultural marketing principles, so that farmers will be able to evaluate various marketing options better.

Climatic influences on marketing

Wide seasonal price differentials and extreme price volatility constitute the final major constraint noted here (c. f. SPEECE 1989 a). In South Kordofan, price

Table 2: Correlations between price risk and price level 1984/1985
Korrelationen zwischen Preisrisiko und Preisniveau
1984/1985

Crop	Correlation	t-statistic
Sorghum	0.312	5.88
Sesame	0.566	12.28
Peanuts	0.478	9.77
Cowpeas	0.690	17.11
Lentils	0.367	7.06
Onions	0.647	15.23
Rice	0.428	8.51
Sugar	0.307	5.75

Note: Price risk is measured by a 21 day moving standard deviation of prices. Price level is measured by a 21 day moving average of prices. The t-statistics show that all correlations are significantly different than zero.

Source: SPEECE 1987

fluctuations on the order of 100 percent within a few days were not at all uncommon for most agricultural commodities. Volatility increased as prices increased throughout the season (Table 2). This inhibits movement of product to market, because it greatly increases risk on market transactions. Subsistence farmers are not profit maximizers, they are risk avoiders: they prefer enterprises with low yield and low risk to activities which may be more profitable but carry higher risk. Small shopkeepers and traders in South Kordofan are very risk conscious as well. They regard themselves as farmers first, with only supplementary commercial activities, and they have the same mentality as other farmers. Even some slightly larger merchants who regard trading as their primary occupation sometimes choose not to move product because of high price risk.

Drought conditions make the situation even worse by extending the length of the high price/high volatility period. Drought also changes cost and compensation relationships of channel functions, and functions shift to the lower ends of channels. In 1983/85, large operators restricted credit/financing to lower risk, but village shopkeepers had to extend more credit to keep customers, further increasing their risk. Shopkeepers also became more responsible for other functions such as buying/selling, assembly, and storage. Farmers were less willing to take their crop to distant markets themselves and face price risk, so the shopkeepers had to purchase a relatively greater share of the marketed crop. Responsibility for the transportation function shifted to them, because fewer merchants came to

villages from the larger markets when the prospect of a good buy on crops was diminished.

Small operators are less able to finance additional functions. Furthermore, during the 1983/85 drought, more responsibility did not bring increased compensation to shopkeepers. Price data showed average markups of 20 percent or less on sorghum sales by small merchants in Kadugli area villages in 1985 (SPEECE 1985), but markups of 40 percent in 1980 (ARAUJO 1981). Rather than taking advantage of the drought situation, a charge which is often leveled at merchants, it appears that they cut their markups. With diminished markups but increased functional responsibility, one can safely conclude that profits suffered. The profit margins documented in 1985 were fairly low, on the order of a few percent. The fact that small operators do not receive increased compensation in return for shouldering additional costs makes them reluctant to take on these additional functions during drought. As a result, product flow is impeded.

Some recommendations discussed above would help reduce price differentials and volatility, but further price moderation could be achieved through a floor and ceiling price set by the provincial government. The floor should not be imposed upon private traders, but rather a trigger price at which the government steps in to buy grain for a regional stockpile. It should be determined at harvest time and set only slightly above prevailing market prices. Neither should the ceiling be fixed or imposed upon private merchants. It should be set slightly below prevailing prices during the hunger period. Sales would be made out of the stockpile accumulated during the harvest. The objective is to moderate the seasonal price differential, rather than to eliminate it, and to accumulate modest stockpiles for drought years (c. f. e. g. Louis Berger 1983).

Such a program must be self supporting. Subsidized prices which forced private merchants out of business would result in large government deficits, which neither the central nor provincial governments can finance. Nor would consumers be well served if the government held a virtual monopoly over a particular crop, as experience has shown. Realistic prices would insure that a modest stockpile could be accumulated, but the government would not be forced to buy major portions of the harvest because the private market would continue to operate. Government competition would force merchants to reduce costs to remain profitable, but they must be able to compete profitably, or no grain will be stored by private firms. In particular, there would be greater incentive to

reduce storage costs, which contribute the major cost involved in taking advantage of seasonal price fluctuations.

Conclusion

The discussion presented here shows that marketing considerations play a critical role in agricultural economic development. Improved production cannot be separated from policies which influence products available on the market, prices of products, the way the products are moved, and information flow about market conditions. Technical advances alone do not address these aspects, and cannot usually succeed without close attention to marketing issues. Kordofan serves here as a case study on the integration of marketing into the analysis of rural development. For many regions which are similar in climate, production systems, and marketing structures, much of the analysis and many of the recommendations will be directly applicable. The greater value of this discussion, however, is probably the presentation of a framework on how to approach some of the key issues.

Regardless of the climate a region has, a thorough analysis is needed on how climatic factors influence the marketing of products. Regardless of how production and marketing are organized, improving agricultural production requires a thorough understanding of how inputs reach farmers and how output is moved to consumers. Government intervention into marketing can easily do more harm than good, and detailed economic analysis of policy impacts must replace ideological biases as the basis for decisions. Public intervention should not replace private firms when they are operating as effectively and efficiently as possible, but should focus on overcoming marketing problems which private firms cannot solve individually.

It is hoped that this discussion will contribute to current debate among those interested in Sudan's agricultural development. Kordofan has enormous agricultural potential. Unfortunately, that potential has largely been squandered over the past several decades, and one factor which has contributed significantly to poor performance by the agricultural sector has been poor policy decisions regarding marketing aspects. Further research and better data may certainly force modification of some specific details presented here, or allow improvement upon some specific recommendations. The general analysis, however, provides a sound framework for

further research on marketing's role in the agricultural development of Kordofan and other regions of Sudan.

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BUCHBESPRECHUNGEN

BREMER, HANNA: Allgemeine Geomorphologie. Methodik - Grundvorstellungen - Ausblick auf den Landschaftshaushalt. V und 450 S., 65 Abb. und 8 Tab. Gebrüder Borntraeger, Berlin/Stuttgart 1989, DM 58,-

Das Werk ist kein geomorphologisches Lehrbuch im üblichen Sinn, sondern stellt eine kritische Auseinandersetzung mit herrschenden Lehrmeinungen und aktuellen Problemen der geomorphologischen Forschung dar, setzt also schon gründliche Sachkenntnisse voraus. Der scheinbare Dualismus zwischen struktureller und klimagenetischer Morphologie findet seine Auflösung in der Erkenntnis, daß beide Forschungsrichtungen nicht parallel zueinander verlaufen, sondern daß die klimagenetische Betrachtungs-

weise die eindeutig umfassendere ist und die strukturell beeinflussten Erscheinungen eo ipso mit einbezieht. Dieses Credo der Verfasserin wird in scharfsinnigen, streng methodisch und systematisch geführten Diskussionen begründet. Große und kleine Bausteine fügen sich zueinander, und so gerät die Darstellung zu einem durch Beobachtung und Logik wohl fundierten Wissenschaftsgebäude.

Ausgehend von der Feststellung, daß es derzeit infolge sehr unterschiedlicher Arbeitsrichtungen und Methoden nur sehr wenige gemeinsame, allgemein anerkannte Grundvorstellungen gibt, durchleuchtet die Verfasserin den irdischen Formenschatz in seiner ganzen Vielfalt und Breite. Über die Modellvorstellungen von DAVIS und