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**The Role of Warehousing in Africa -
Lessons for Warehouse Receipt
Financing from South Africa,
Tanzania and Uganda**

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Glossary

AMS	African Marine Surveyors
ACDI/VOCA	Agribusiness Development Centre/Volunteers in Overseas Co-operative Assistance
CFC	Common Fund for Commodities
CIF	Cost Insurance and Freight
DU	District Union
EU	European Union
FOB	Free on Board
GAFTA	Grain and Feed Trade Association
MDB	Marketing Development Board
NBC	National Bank of Commerce
NBC	National Bank of Commerce
NMC	National Milling Company
PMB	Produce Marketing Board
PS	Primary Society
SADC	Southern Africa Development Community
SGR	Strategic Grain Reserve
TRC	Tanzania Railway Corporation
UCA	Uganda Co-operative Alliance
WFP	World Food Programme

Summary

This report is an output of a research study financed by DFID's Renewable Natural Resources Research Strategy Crop Post-Harvest Programme, the main purpose of which is to determine optimal strategies for development of agricultural warehousing in Africa. Three country case-studies are presented, covering South Africa, Tanzania and Uganda. The grain marketing systems of these three countries is outlined, and information is provided on storage infrastructure, warehouse receipt financing initiatives (involving both grain and other commodities), contractual arrangements and risk management arrangements.

The work of the Natural Resources Institute (NRI) on the role of warehousing and the prospects for warehouse receipt financing now include a range of countries with lessons drawn from contrasting environments. Approaches differ depending on the culture of central regulation, the respect for the involvement of the public or private sectors and the overall level of development of a country's agricultural sector.

General Observations

Any system of warehouse receipt financing is underpinned by efficient operation at each node of the "triangular relationship". The key interactions are between warehouse management, traders (or other users of warehouse receipts) and the banks (or other providers of finance).

To make a system of warehouse receipt financing work, we need to address the failures in the present grain marketing system in these three areas and think about how models from elsewhere might be employed in the African context.

The main areas of concern are in the management of warehouses and in the trading environment. We have also identified some areas in which new financing initiatives could be employed, which the banks as yet have been slow to adopt. However, insofar as the infrastructure of warehouses, trading and banking are concerned, the main deficiencies lie in the first two of these three.

Trading Environment

In Tanzania and Uganda, inter-temporal arbitrage (i.e. seasonal storage of grain) involves significant risks (unhedgeable price risks and risks of unforeseen political intervention) but much higher profits than in South Africa. One of the outcomes of the insufficient competition in Uganda and Tanzania are the differing levels of inter-seasonal price stability; lean season prices are typically 25% above harvest prices in South Africa, but 80% or more in the other countries.

Earlier findings by Coulter (1997) for Zambia are confirmed in this study for Tanzania and Uganda. There is a clear need for steps to: (a) reduce trading risks, and; (b) increase competition among players. In the US in 1916, these objectives were met by adopting the following measures:

1. Central regulating body which ensures that warehouses operate in the interests of the farmer and trader
2. Grain standards which ensure that parties and counterparties use commonly accepted weights and measures
3. Standard contracts underpinned by an arbitrating body

Acknowledgements

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The US model represents something of an ideal in terms of the impact which this infrastructure has on the number of disputes over grain contracts, the familiarity of the industry about grain quality and condition and on the cost of storage. However, the US model has been far more reliant on governmental will, dynamism and resources than we could hope to achieve in the African context. Hence, in our conclusions we place more stress on the private sector.

In South Africa there is beginning to be concern that the trading environment is suffering from a growing level of industrial concentration in the storage and marketing of maize by the larger international companies, and fears that the country has moved from a situation of over to under-regulation. These companies have moved into other parts of Southern and Eastern Africa too. To this may be added concerns expressed in some quarters about the small number of companies which are able to compete in food aid bids. Further research would be needed to determine whether or not there is a problem which merits countervailing action by Government and farming sectors.

Key elements of an efficient trading environment are price transparency and liquidity. Especially for the trading of warehouse receipts, we can learn much from South Africa. South African experience underlines how effective a commodity exchange can be at providing assurance to the seller and buyer of grain. South Africa's experience with the South African Futures Exchange (SAFEX) is undoubtedly a fortunate one compared with that of the rest of Africa. Apart from the often-quoted benefits of price transparency, SAFEX warehouse are licensed, produce is inspected, only reputable silo owners and sites are used. In addition, the exchange provides liquidity and the user can be confident that he or she is achieving optimal prices, since market information on SAFEX reflects both local and international market conditions.

An exchange itself can be used for spot, forward or futures trading. Small rural exchanges sometimes operate on the basis of "buyer beware", then might be developed to incorporate an inspection on site to give a quality and quantity certificate. However, since we are interested in the role of warehousing in easing access to credit, using warehouse receipts as a form of collateral, we should be mindful that the banks to whom these receipts are marketed are united in preferring to trade in *paper* rather than the physical commodity. This is why SAFEX has come into increasingly common use in South Africa, since the banks could add to the volume which is traded by trading SAFEX receipts.

Strategies for the Development of Warehousing

The second key element for the operation of warehouse receipts is well-managed warehousing. The differing experiences of the grain trade in South Africa, on the one hand, and Tanzania and Uganda, on the other, confirms the importance of having a strong warehousing sector. In South Africa this is provided by the co-operatives. The options for other Sub-Saharan African countries are a) licensing the warehouses to management by international collateral management companies such as SGS or Cornelders, b) licensing to international trading companies who would manage their own stock as well as storage for other users c) some variant of these two options but using local companies d) developing the capacity in-country, upgrading local warehouse management and inspection companies to international standards. Since these operators issue warehouse receipts which are then used as collateral, it is not advisable to allow there to exist any doubt regarding the competence or probity of the issuers. The most reliable (but most expensive) solution would be to use international collateral management agents.

The implication of the above is that reputation and trust are crucial, especially if there is to be little external regulation. It has taken a period of fifty years or more for the co-operatives in South Africa to establish a reputation with grain traders. Even now, some of the banks will only lend against receipts which are issued by SAFEX, not the co-operatives.

In all of the countries visited for this report, there has been no system of arbitration. This is now changing in South Africa where the Maize Forum has approved the wording of a standard contract. It is likely that this will be adopted by the trade. In Tanzania and Uganda, it is difficult for parties to trade with each other if they have no previous trading experience with each other. Hence, traders have to perform a great deal of investigation into their counterparty before they can feel satisfied that the other half will perform, i.e. deliver the contract and pay the consideration. This is a cost to the industry and restricts the liquidity of markets.

Of the countries visited, Uganda appears to be better prepared for such initiatives, due to the groundwork carried out by the Warehousing Receipts Task Force, the interest generated in the commodity exchange, and a generally favourable policy environment. In Tanzania, there is a need to first address local policy concerns and measures which tend to deter the development of a competitive system.

Financing

The third element in the operation of warehouse receipt financing is the finance itself.

As we mentioned at the start of these conclusions, a number of different financing solutions are being tailored to meet the needs of customers involved in agri-business. These include growth and collateral funding, and credit factoring which are starting to be used in South Africa. Some of these may help to address the needs of smaller operators and to inform the banks about risk profiles in the agricultural sector where the agricultural sector has newly liberalised and expertise in agricultural credit risk is lacking.

The experience from other field visit to investigate warehouse systems is reported separately. It is sufficient to note here that warehousing initiatives are currently being developed in Eastern Europe (notably Poland) under USAID and World Bank auspices, and fundamentally involve an adaptation of US practice of public sector licencing and inspection. Such a system is likely to prove difficult to implement in most African countries because of the general weakness and underfunding of public sector services (at this point in their development), and the difficulty in insulating such services from day-to-day political intervention in politically-sensitive areas involving consumer, farming and business interests. The difficulty of establishing such services in newly independent countries is underlined by South American experiences, e.g. in Brazil, which still lacks a credible warehousing sector 95 years after the passing of the relevant legislation.

Conclusions

Ultimately, African Governments will have to decide which way they intend to proceed. We can identify the following suitable and feasible strategies. The most important hurdle is to improve the management of warehousing as a precondition for any financing initiatives to work. Grain standards, regulations, inspection bodies and commodity exchanges all help the achievement of successful warehouse receipt financing but are subsidiary to this overriding need.

- A market solution - deliberately avoiding complex legal and regulatory arrangements, with the result that warehouses management services are *bought* from international inspection companies, and other international companies which have the confidence of the international banking community. Legal reforms would be introduced only if they facilitate the operation of these companies. Warehousing companies might themselves form associations to establish and enforce professional standards. A purely laissez-faire approach would not change the development of finance from the present situation. Rather this strategy would employ the experience and credibility of companies who are highly familiar with warehousing management and trade finance. Their involvement would be sought to address market failure, e.g. where individual companies have not yet become involved because of the lack of other credible parties that they can contract with.
- An independent licencing and inspection body — sanctioned by Government, but deliberately insulated from the political process. This would have its own sources of financing (e.g. a per tonne levy on all produce moving through the marketing chain) and delegated authority to ensure compliance with the law. This is not an alternative to the market solution but rather a mechanism of oversight of private sector operators, akin to the Federal Government Inspection Service (FGIS) in the US. As an optional add-on it would be worthwhile only if it could be adequately trained to monitor warehousing activities. Again, these services could be bought from overseas companies qualified to do this, for example, the FGIS itself or the Canadian Grain Commission. Inspection companies which have formed from the privatisation of the Maize Board in South Africa might also be suitable. If a company were chosen to carry out the operations of the Independent Body, it would be desirable that it trained local inspectors and warehouse managers to improve the credibility of local companies in this important industry as part of its longer term mandate.

The creation of an independent inspection body is analogous to the action of the German and British Governments in passing decisions on their money supply to their respective Central Banks.

Recommendations

- Discuss with relevant African governments the type of strategy from the above choices they find suitable, acceptable and feasible.
- Continue our work to encourage the involvement of warehouse management companies and trade houses which have the credibility of the banking community. DFID has expressed its interest in the implementation of successful warehousing systems which help raise the living standards of the poor by financing part of the work to be carried out in conjunction with the Common Fund for Commodities.
- Assuming that some private sector solution is agreed upon, more detailed costings of these strategies are needed.

As a primary "shopping list", the above would represent important progress. Lower priority measures to include are:

- Efforts should be increased to make the use of standard contract forms and arbitration in the event of disputes more commonplace.
- We will need to monitor the progress of the Warehouse Receipt Task Force in Uganda to see how useful this legislative approach of the World Bank will be.
- Monitoring should be carried out of new finance initiatives such as growth, collateral and credit factoring.
- In the light of the transfer of ownership of silos in South Africa, we should consider to what extent that there should be a code of practice in any country governing the ownership and control of warehousing to avoid the problems of local monopoly or monopsony arising in the grain market post-liberalisation. This could be a particular problem in those cases where a co-operative has been sold to a large trade house where there is little other local competition.

Further Research

- Since we have identified the benefits of operating via an exchange, we should explore to what extent we can spread the benefits of using SAFEX throughout other SADC countries. We are mindful here of the problem of basis risk.
- Investigate the potential of a Ugandan commodity exchange, centred first on coffee. Pre-feasibility work has already been carried out by ACDI/VOCA under USAID funding and yielded positive conclusions regarding the acceptance of potential users and the earnings stream which could be expected under prudent assumptions.

Introduction

This work covers three country case-studies, on South Africa, Tanzania and Uganda, which are being carried out under Phase II of a project the purpose of which is to determine optimal strategies for development of agricultural warehousing in Africa. Better warehousing and related commodity financing is seen as a means of addressing problems of trade financing and price volatility in newly liberalised grain markets. The work is financed by DFID's Renewable Natural Resources Research Strategy Crop Post-Harvest Programme.

The objectives of the case studies were: (a) to draw conclusions about warehousing development strategies, and; (b) identify viable schemes worth monitoring in Phase III work and potential participants in this activity. In each country, detailed information was to be collected in the following areas.

The work reported here was commissioned by DFID's Renewable Natural Resources Research Strategy's (RNRSS) Crop Post-Harvest Research Programme. It is part of Phase II of the three phase project to investigate the role of warehousing in Africa. The essential problems which have been identified in this work are

As regards the programme of work, the author carried out desk research on relevant documents in the UK, and visited South Africa, Uganda and Tanzania. In each country rapid appraisals were made, based on documentary sources and the experience of relevant participants, i.e. trading houses, Government and marketing Boards, NGOs etc.. Initial desk work revealed that warehouse receipt financing and related trade innovations were more common in South Africa and Uganda, and he therefore concentrated his time on these two countries. A shorter visit was made to Tanzania, but this only permitted interviews in the capital, Dar-es-Salaam.

The main areas where our research was focused was as follows:

- Main commodities susceptible to warehouse development
- Trade structures
- Details of the more important warehouse operators
- Market shares
- Systems of contracting and dispute settlement
- Details of warehousing capacity
- Types of operator
- Professional organisation and training activities in warehousing
- Public policies regarding storage and their application
- Current systems of trade financing
- Leading banks involved
- Seasonal price variability
- Marketing initiatives in the private and public sectors
- Stakeholders and researchers

South Africa — the role of warehousing

Some Background to the Agricultural Sector

The history of the agricultural sector in South Africa is one of central control boards from the time of the 1937 Marketing Act. These determined prices, collected levies, issued export permits and established a single market channel for crops.

With the increase in control of the maize crop exerted by the Maize Board, the board had to appoint agents to receive, handle and store maize. Initially, there were a large number of agents but there was increasing consolidation until in 1994 there were only 24 agents, most of which were co-operatives. During this time the silo loan programme of the Land Bank, financed by the government, had facilitated the construction of an impressive silo warehouse infrastructure, largely owned and operated by the co-operatives.

New marketing legislation provides for the dissolution of all of the various control boards. The intention is to allow market forces to shape the pricing of agricultural products all the way along the value chain. The ownership of storage is still approximately 95% in the hands of the co-operatives. Some of these co-operatives have become limited companies, although the use of warehousing space is still regulated to maintain public access to co-operative storage. This may be more apparent than real, however. Even though there is excess capacity (capacity of 17 million tonnes, against maize output in a very good year of 10 million tonnes), new building of warehousing capacity continues, largely because co-operative warehouse rents are above the rates that could be achieved by an operator incurring the capital cost of construction itself.

The co-operatives *were* the principal traders in the grain trade, though as agents for the Board. Now, the co-operatives' function is mainly in handling and purchasing the crop from their largely white commercial farmer members, while private trade houses buy from these co-operatives for onward delivery.

Several important lessons arise from the South African case, the most important for warehousing itself is the danger of excessive control of storage in the hands of a few traders leading to collusive oligopolistic control of the grain market. South Africa is also a valuable case study which demonstrates the importance of negotiable silo receipts. This is expanded upon in the conclusions.

Main commodities susceptible to warehouse development

In South Africa, grain crops such as yellow and white maize, oilseeds and wheat are the main crops stored. There is a great deal of horticultural output in South Africa too. It is conceivable that this could be used for the purpose of providing collateral, where perishables are held in cold storage, thus extending the life of the produce to over a year (for example, pears and apples). In South Africa, however, the example of maize provides us with useful lessons and experience itself in warehouse receipt financing, while other innovations are also taking place in the field of commodity financing. For example, for most of the banks, lending to the agricultural sector is relatively unfamiliar territory. Hence, to assist the banks in understanding the risk profiles of the credit-constrained customers, consultancies have emerged as intermediary between lender and borrower. Financing solutions are sometimes tailored to the needs of the borrower.

Main surplus and deficit areas

Yellow and white maize are cultivated in roughly equal proportions in South Africa, with most of the outputs to the west and east of Johannesburg. As a whole, South Africa is a net exporter of maize, which is shipped to international destinations, mainly from Durban, and to the rest of Southern Africa, mainly by truck. Johannesburg and Pretoria are the principal deficit areas, although the maize producing areas are relatively close to those cities. Given the size of the country, transport costs are such that it may be cheaper to import maize from Latin America for the Cape Town market than to truck maize from Free State or Mpumalanga.

North West province is to the west of Johannesburg and borders Botswana, while Mpumalanga is to the east and borders Mozambique and Swaziland. Free State stretches south from Johannesburg and engulfs Lesotho.

Table 1: Maize Production per Province ('000 tonnes)

	1993/94	1994/95	1995/96
Western Cape	6	20	24
Eastern Cape	531	220	113
Northern Cape	178	160	150
Free State	4,346	1,266	3,286
Natal	659	357	481
Northern Province	168	68	128
Mpumalanga	2,760	1,192	1,875
Gauteng	716	281	470
North-West	3,878	1,272	3,401
Total	13,242	4,836	9,928

Source: Abstract of Agricultural Statistics, 1997

Trade Structure

Production

Grain production is overwhelmingly in the hands of commercial farmers who are members of the co-operatives. Their main role now is grain handling and storage after buying the grain from the farmer. Co-operatives own 95% of the storage capacity in the country, with one or two private grain handlers which have constructed their own storage facilities. There are 16.9 million tonnes of bulk storage capacity in South Africa, 85% of which is owned by a small number of summer grain co-operatives (and converted co-operatives). Sentraalwes, OTK and Noordwes own and operate 31.2%, 21% and 18.1% respectively of the bulk storage capacity in the summer rainfall area. Perhaps the most significant aspect, however, is the geographical concentration of co-operatives which means that they tend to own all of the bulk silos in their area.

At present farmers using the facilities of their co-operative have a number of options when it comes to the marketing of their maize. If they are lucky their co-operative may offer a full and final price for their maize. However, co-operatives prefer to offer conservative *voorskots* (initial payments) for maize delivered into the pools that they operate. This allows them to speculate with maize without associated price risk. The farmers' alternative is to deposit the maize at the silos and then request that it be transferred to the name of the buyer of their maize. However, co-operatives may well structure their storage charges (and the timing of payment) to encourage delivery into their pools.

Since the co-operatives were deregulated, a small number of the larger co-operatives have converted into public companies, raising a number of questions regarding the ownership and control of warehouses in South Africa. Since the warehouses were constructed with the help and funds of the Land Bank with government money, some question whether these commercial farmers should be allowed to appropriate the assets of the formerly public co-operatives. In addition, since the co-operative dominates warehousing in South Africa and each region of co-operative ownership, other private operators have to depend on the co-operatives to use warehouse space. The government has, in view of this, had to force the co-operatives to ensure free access by non-co-operative members.

Trading

The trade in grain is entirely in the hands of the private sector. Some of the end users, millers and feed compounders, are also traders in their own right.

Some of the most important traders in the industry are given in Table 2.

Table 2: Trading Firms Operating in South Africa

Company	Origin	Business
Cargill	International	Trading and milling
Louis Dreyfus	International	Trading
Glencore	International	Trading
Warings	South Africa	Trading
Premier Oil	South Africa	Trading
Exatrade Group	South Africa	Trading
Hochfeld Commodities	South Africa	Trading
Tiger Oats	Joint Venture of Imex and Conagra (US owned)	Trading and milling

Source: Abstract of Agricultural Statistics, 1997

It is always difficult to give estimates of market share. Hochfeld trades approximately 100,000 tonnes per annum, compared with Cargill's 1 million tonnes. Louis Dreyfus and Glencore would not divulge their volumes, but other traders suggest that Cargill is the most important trader with the remaining international traders handling a slightly smaller volume.

The largest of these operators, such as Cargill, rely on international sources of finances. In isolated instances, they may participate in commodity financing with local banks. (In Johannesburg, these are generally the branches of international banks).

Systems of contracting and dispute settlement

The system of dealing with non-performance of contracts for the delivery of maize has until recently relied upon negotiation through the courts. There is no special body for handling disputes of this sort. However, if grain is traded through the South Africa Futures Exchange, then SAFEX itself will intervene to provide protection to the user. Since roughly 20% to 25% of the maize crop (roughly 22,000 contracts of 100 tonnes each out of a total crop of between 8 and 10 million tonnes) is traded through SAFEX, then this proportion of the trade has the benefit of an arbitration procedure.

The Maize Forum and Wheat Forum, which are trade bodies which represent those sectors, of South Africa have just finalised the drafting of a new contract which has provision for arbitration in Johannesburg through an arbitration tribunal. Contracts are deemed to have been agreed in South Africa and users accept the terms and conditions of the South African Association of Arbitrators. As such, this is a significant step forward for the trade. It would

seem likely that the trade will adopt this contract form. By dealing only with traders who are prepared to abide by these rules, a selection mechanism is now in place which will screen credit worthy traders. Since those who refuse to abide by the rules will have their names published by the association, use of the contract terms should in a few years' time become more or less synonymous with credit worthiness. The drafting of the contract is not dissimilar to the contracts which are drafted by GAFTA for international grain trading and which are deemed to be agreed upon in London.

We should ask here at what point that disputes are most likely to arise. This forms the risk profile for different operators in the grain trade.

BOX A KEY RISKS IN GRAIN TRADING IN SOUTH AFRICA

- A. Farmer delivers to the co-operative warehouse. The risk here is that the farmer does not receive payment for maize, either the voorskot, or the final price. Another risk is that there is a dispute over the quality delivered. These risks are addressed at the point that the maize is delivered and is checked by the silo operator. The farmer receives a receipt that the maize has been delivered. Since the farmer is an owner of the co-operative, payment is an internal matter.
- B. A trader buys the maize from a farmer for delivery to its own warehouse or to a miller. The warehouse receipt is then transferred to the new owner. The risks here are again that maize of poor quality is delivered. The warehouse receipt stipulates the maize that has been purchased. Hence, if poor quality grain has been delivered then it is either the silo operator at fault or deterioration which has occurred in the process of transportation. There appear to have been few cases of actual disputes arising in this case. The co-operatives contest that their reputation is reliant upon the probity of the silo operator which is the main check against the information on the warehouse receipt being inaccurate. In the case of freight losses, a dispute would be against the freight company or with the insurers. If there were a collateral management company to oversee the storage and movement of grain, it would be liable.
- C. The bank lends funds to the trader on the basis of maize already held, using the warehouse receipt as proof of collateral. The bank makes a loan facility available which is drawn upon by the borrower. At the end of the credit period, say six months, the borrower does not repay the loan. The bank is covered in this eventuality since it a) may have only lent up to 75% of the value of the loan in the first place. The bank has title of the maize with a receipt which is tradeable. Many banks in South Africa will only recognise a SAFEX receipt as adequate collateral. Since almost all warehouses in the country are registered to issue SAFEX receipts, and standard co-operative receipts may be converted to SAFEX receipts, the bank may liquidate its collateral quite easily. Spot, forward and futures positions are traded on SAFEX. The liquidity on SAFEX is determined by the volume traded daily and for further out positions.
- D. The bank or trader sells a SAFEX warehouse receipt to another. If the buyer attempts to liquidate this paper for maize and finds that no maize is available, SAFEX will honour the fulfillment of the contract from maize elsewhere, or by Open Market Operations (OMOs).
- E. The security of SAFEX itself is supported by the capital of that exchange. The Agricultural Markets Division (AMD) is just one, relatively small element of the exchange that comprises currency, bond, equity and interest rate management too. More specifically, SAFEX has a clearing company, SAFCOM, which is non profit-making and is reimbursed by SAFEX. This ensures that at the end of each day, all margin calls have been paid. Hence, if a broker on one side of a trade has to pay margin calls on account of having made a paper loss on the value of a maize future which it has bought, for example, and does not have the funds to meet this demand, then the Clearer will pay the margins. Of course, the Clearer needs adequate capital to do this because, on the other side of the trade another broker will have a net short position and will expect payment from the clearer on account of a paper trading profit.

Looking ahead, the AMD is planning to introduce wheat futures before the planting of the 97/98 crop and the listing of a wheat contract as the wheat market moves into a deregulated market in the latter part of 1997. The contract specification for wheat is included as Appendix 2 to this report. It is clear from this that payment for goods has to be through the Clearing House of the Exchange. The seller is responsible for all storage and handling charges. In the event of a default by the seller or buyer to make or take delivery of the silo receipt, SAFEX has special default procedures which involve liability for a minimum penalty determined from time to time by the Clearing House. The attachment to the maize contract in Appendix 2 also includes

- a list of the approved silos, which are located in all parts of the country.
- a SAFEX silo receipt, which has a record of the transferors and transferees of the maize. At the bottom of the receipt, it is clear that SAFEX and its clearing house do not accept claims in respect of maize deliveries in respect of the non-performance of silo owners when silo owners have failed to perform. Nevertheless, the conditions to become a recognised silo owner are rigorous.
- requirements to become an approved silo owner.
- requirements for approved silos.
- procedures for issue, transfer, delivery and presentation of SAFEX silo receipts. A copy of the SAFEX silo receipt is sent to the Clearing House, ensuring that all movements and transfers of ownership of maize are registered centrally. The original receipt has to be properly endorsed by the seller, ensuring that the risks of fraud are kept to a minimum.
- procedures for the close out and delivery of the futures contract.

When the bank makes an advance to a borrower using whichever form of collateral, a Structured Trade Facility is drafted between the two parties. An example of such an agreement is included as Appendix 3. This was obtained from one of the leading banks involved in commodity financing. Even for the banks whose procedures are most advanced in warehouse receipt financing systems, there are few explicit procedures dedicated to warehouse receipts. Nevertheless, the trade facility is the main agreement which is entered into. The main security is the Letter of Guarantee which provides reassurance for whichever form of collateral is taken. This might be the list of present and future debtors, fixed assets, the overall net assets of the business or the stock, i.e. the maize itself.

In addition to the security provided by SAFEX, there are agreements which specify the responsibilities of the owner and manager of collateral in collateral management agreements.

International inspection companies including SGS also carry out collateral management in South Africa, but according to their international practice issue non-negotiable warehouse receipts. Services are provided according to a standard attornment agreement - see Appendix 2 of Coulter and Shepherd (1995).

Location, status and current utilisation in warehousing

The list of the warehousing capacity (included as Appendix 4 to this report) in South Africa reveals a highly impressive stock of silo space. Most of this is in the north, in the areas to the west and east of Johannesburg, the largest owners being Sentraalwes, OTK and Noordwes, which have 31%, 21% and 18% shares of the northern capacity, respectively. The total capacity for the northern region, southern region and other capacity, which is owned mainly by the maize millers and wheat processors is approaching 17 million tonnes.

The throughput of maize is relevant is given in Table 3. These figures are based on the volume of maize which was received from producers by agents and registered bodies in 1994/95, the most recent year which we have available. This is included in the following table. This does not include deliveries of wheat to these silos, although the vast majority of deliveries are maize.

Table 3: Maize Received from Producers by Agents and Registered Bodies, 1990/91 to 1994/95 ('000 tonnes)

Marketing Season	Co-operative Agents	Miller Traders	Trader Agents	Total
1990/91	6,938	392	130	7,458
1991/92	6,295	502	126	6,923
1992/93	2,006	282	33	2,321
1993/94	7,121	940	127	8,188
1994/95	9,894	706	117	10,717

Source: Various Maize Board Annual Reports

In an exceptional year, the utilisation rates of these silos is just over 70%, using the 1994/95 figure for maize deliveries and adding wheat production of roughly 2 million tonnes. In previous years, the volume of maize being received was far less than 1994/95, and the utilisation rates of capacity, assuming capacity was at a similar level in those years, was accordingly lower.

In Appendix 4, we provide some details of storage charges levied by three of the major co-operatives. Different tariffs may be charged depending on whether the user chooses to pay an all-inclusive fee, which will cover elevation, fumigation and storage under an annual contract or whether to charge per tonne, per day. Daily storage charges have been converted to monthly rates. A typical all inclusive rate of USc60 to USc70 per tonne per month is chargeable if the user contracts for a year. This is much cheaper than the equivalent daily rates converted to a monthly basis.

The co-operatives issue silo receipts to anyone depositing maize at one of 113 silos. The storage charges on such silo receipts are payable by the owner of the maize, i.e. the depositor, until the maize is delivered on SAFEX, and the buyer of the maize after delivery of the receipts. It has been agreed that until the end of the April 1999 the storage charges on maize stored on a SAFEX silo receipt will continue to be R17c/tonne/day, equivalent to US\$1 per month. The trade considers these to be expensive and they are certainly well above the all inclusive charges or roughly US65c per month, including elevation and fumigation.

Public policies re storage and their application

From the 1950s onwards, a bulk grain storage and handling infrastructure was built up in South Africa by the agents of the various control boards with an interest in grains. Many of these agents received Land Bank loans to assist in the erection of the bulk silos, and were remunerated by the boards to cover their costs. These control boards have now been dissolved.

Public policies regarding storage in South Africa are notably absent, particularly when one makes the comparison with the extent of government involvement in the past. Current thinking is being developed about what are the best routes forward insofar as regulation of the co-operatives' storage space, now that some of them are entering the private sector. Some of these options are

- to avoid differentiated access to silos between member and non-member
- to avoid the potential for silo ownership to translate itself into control of the grain market
- to deal with the problems stemming from monopoly
- to ensure the reliability of tradeable silo receipts
- to ensure an equitable credit market
- to leave things to the market

There are obvious dangers of the sudden privatisation of large stocks of warehousing in the hands of a small number of private co-operatives. The concentration of ownership is enormous. The three biggest co-operatives account for 60% of ownership, while for the biggest seven this figure rises to 78% (equivalent to 92% of summer grain co-operative). Indeed, this concentration has heightened since some co-operatives have merged. Since 1992, Sentraalwes have taken over Kroonstadwes, Senpak, Wesko and Vaalharts; Noordwes has taken over Marico, and OTK has taken over Lydenburg Voorspoed.

As such, it appears that the grain market could move from being over-regulated to being under-regulated. Fortunately, the role of regulator has in effect been undertaken by SAFEX in the private sector — but only for maize which is traded through SAFEX. Its rules for the nomination of silo operators and accredited silos are tightly worded and the exchange has a great deal of discretion, should the commercial probity of an operator be doubted. Those warehouses which operate outside SAFEX are themselves subject to the scrutiny of commercial reputation.

Current systems of trade financing

For the farmer, the need for finance depends on how he markets the maize to the co-operative. They have a number of options. In some areas they can sell their maize to the co-operative for a full and final price. However, it would appear that this happens only when the co-operative is acting as buying agent for another purchaser. Normally, the co-operative seeks to avoid the risk of a significant long position with the maize stock fully paid-up. Hence, the co-operative pays the farmer a voorskot (advance payment) which allows the co-operative to speculate on the maize price. This also reduced the co-operative's need for working capital before the sale of the stock on to a miller or trader.

It appears that the co-operatives have to offer conservative (i.e. relatively low) voorskot prices for maize delivered into their pools. The farmer is then certain of (depending on the co-operative area) a minimum price, with the hope that the co-operative can get more for the maize in the form of the payment of an agterskot (after payment) to the farmer.

In some cases, the co-operative is a large trader itself. This is especially the case with the co-operatives which are being converted to private companies and which are not, therefore, directly answerable to farmers. Hence, the trader will take long positions in maize, and need to be financed. They do this either from retained reserves, but increasingly from receipt financing sources.

The third option for the farmer is to deliver maize to the co-operative and ask for a silo receipt so that he maintains ownership and control of his maize so that he has the option of selling it onto a trader. However, the co-operative then requires payment of elevation and storage charges in advance. Sometimes there is an extra per tonne charge for paperwork associated and transferring ownership of the farmer's maize to the buyer. Up front payments of this kind may be a significant discouragement at a time when the farmer's cashflow is at its worst. This tends to encourage some farmers to deliver their maize to the pool where no up-

front elevation and storage charges are required. Sometimes, moral pressure is also exerted on farmers to "support the pool".

The large trade houses such as Cargill are financed from their international finance sources and do not rely on national stocks of maize for credit. The rates of interest which they obtain via US or European capital markets are far superior to those available in South Africa. In any case, the balance sheets of these companies are such that recourse to the use of warehouse receipts has not been necessary. However, for those companies reliant on national sources of credit, interest rates achievable using silo receipts are similar to those based on balance sheet financing. (In one sense, the distinction between the two means of financing is blurred since the stock of maize should form part of the balance sheet's assets.)

SAFEX

It cannot be doubted that South Africa is extremely fortunate in having already developed a system of risk management prior to liberalisation. Maize contracts were being traded on SAFEX in 1996, prior to the wholesale abandonment of the Maize Board in 1997 (although this process started in 1995). The development of the exchange has taken place somewhat differently to that in other countries. SAFEX found that by progressing on from a liquid spot market to one that traded forward positions, there would not be sufficient marketability. Hedging and speculation volumes on the exchange still represent perhaps only 25% of the volume production. However, in order to attract the volumes which could be traded by the financial institutions, it had to design instruments which would be attractive to the banks. This led naturally onto the development of maize futures which the banks were happy they could dispose of as paper, rather than having to involve themselves in physical commodity trading.

What should be stressed here is that South Africa provides us with the lesson that banks are clearly more in favour of dealing with paper which they can easily dispose of and liquidate on an exchange rather than having to trade the physical commodity itself. The risk of default by a borrower is a much more manageable one if the warehouse receipt is easily negotiable. Otherwise, the bank prefer stock for which a market has already been found in a hard currency. Invariably, this means an export sales contract. Price risk can be managed by the bank on behalf of the borrower too.

While the use of such negotiable instruments may seem beyond the realms of feasibility for other African countries, it is conceivable that other central markets could be linked to SAFEX, with appropriate price differentials. Such differentials already exist in the case of all the delivery locations for maize within South Africa. This is an area where more research could be made since it might allow the whole Southern African market to benefit from the infrastructure which is already in place in South Africa. There are obvious difficulties, but some of these are in the process of being dealt with through the Southern African Development Community (SADC).

Rates of interest for warehouse receipt financing are similar to those for balance sheet financing largely because silo receipts do offer liquid and marketable collateral for the lender with limited risks. Indeed, a SAFEX receipt is probably the second most liquid element of a trader's or co-operative's balance sheet after its cash holdings. The ease of disposing of collateral in the form of a SAFEX receipt is high compared to other security that it might take.

For maize, other innovations in farmer finance have been introduced more slowly than in some other sectors, such as in fruit growing or packing. Some of the innovations are included in Box C.

BOX B — NEW INNOVATIONS IN CREDIT PROVISION AND MANAGEMENT IN SOUTH AFRICA

Contract Growing:

Farmers plant to a contract, using their own inputs and receive an agreed price on delivery. A pre-payment may be paid by the contractor for the part-financing of inputs. Alternatively, the contract company may provide all of the inputs for the farmer, even renting his/her land space. The farmer is then paid a price which reflects the deduction for inputs provided by the contractor.

Collateral Funding:

This is a system of providing credit which is sensitive to the movement of the output price. The lender agrees to lend up to a specified percentage of the value of collateral. For example, if the product is valued at 1,000 Rand and is financed at 50%, then if the value of the product falls to 900 Rand, then the borrower has to repay to the lender a sum of R50 (R500-R450). This is akin to margin calls on a futures exchange but is a method of protecting the risk exposure of the lender. The percentage itself is determined by some worst case scenario. For example, in the case of the fruit packer, it could be the value of fruit for juicing compared to fresh sales. For maize, it might be a 25% below average spot price should the lender seek to liquidate collateral.

Growth Funding:

The lender moves from the first tranche of lending onto successive tranches by taking an equity stake in the business in lieu of repayment. This allows the business to grow and provides some of the backing to the lender.

Credit Factoring:

Lending to small farms is unfamiliar territory for the banking sector in South Africa, as they have until recently been financed from the Land Bank, through co-operatives and control boards. This has provided a role for specialist companies to manage the risks for banks, which do not have a detailed knowledge of agriculture. These companies can help the banks by simplifying the lending process considerably, to the extent that the specialist provider simply has to submit its risk profile, invoice and cash flow workings to the bank. The credit factor agency can also help the borrower with discounts on the cost of inputs since it purchases for a number of farms or processors. The inputs which are purchased are the collateral list which the bank has a lien on while credit is being provided.

Leading banks involved

The main banks and collateral management companies involved in commodity financing in South Africa are Standard Bank, ABSA, Societe Generale and First National.

Seasonal Price Variability

Prices in South Africa are much more competitive than in the other two countries in this survey in the sense that the interseasonal price variability is much more in line with what we would expect the costs of storage to be.

Under the Maize Board, a small increment in price was allowed each month for the cost of storage. The absolute level of prices also rose once the Maize Board was removed from an average of R520 (US\$115) per tonne to R700 (US\$137) per tonne. This monthly price increment is still small by African standards. SAFEX estimates that the difference between high and low point prices is now usually 20% to 25% over the course of the year. (This compares with much higher price increases in Tanzania.) The latest crop prices, however, have climbed further due to the influence of El Nino, to 30% to 40% above their low points. This has resulted in SAFEX prices frequently moving to "limit up" and "limit down" and traders receiving or paying out variation margins on account of high volatility.

The National Maize Producers Organisation (NAMPO) argued that it was necessary to maintain a floor price after liberalisation, which began in 1995, because farmers were not yet sophisticated enough to use risk management tools and because farmers were likely to reduce plantings of maize otherwise. Indeed, plantings for the 1997-98 marketing year, at 3.2 million ha, were down 5% from the previous season and down 7% from the five-year average and this, of course, will have contributed to the increase in prices.

Public and private initiatives to improve market performance

Since the end of Apartheid and the start of the government of Nelson Mandela, the whole agricultural sector has removed from the jurisdiction of the Control Boards and trading systems have been progressively liberalised. This has taken place suddenly, leaving many parties struggling to understand their new roles in the South African grain trade. Public initiatives have been very limited. The private sector has been relatively innovative, however, employing methods of financing which benefit the lender and borrower. However, since the capital is rarely accessed by farmers and processors other than from the white sections of the population, the benefits of these initiatives are not widespread. There are a number of small programmes aimed to help the black farmer, for example from the Rural Finance Facility, Khula and the Land Bank. However, the people with whom we spoke generally agreed that so far there is not a coherent strategy for the credit constrained farmers in black farming areas.

Stakeholders and Researchers

The main stakeholders in the grain trade are the co-operatives, whose member farmers dominate the output of grain in the country. The co-operatives dominate the warehousing capacity. Trading in grain is performed increasingly by the large trade houses, while banks are active in providing credit against grain stocks to the coops. SAFEX provides the central co-ordination of grain markets via rules and regulation, contracts, price discovery and the physical and paper trading of maize.

The role of NGOs is minor. Indeed, no one referred to them in discussion since none of them have developed a strategy for the transition of black agriculture to the private sector.

The main organisation involved in research in agriculture in South Africa are the Land and Agricultural Policy Centre in Johannesburg.

Tanzania — the role of warehousing

Some Background to the Agricultural Sector

The whole agricultural sector in Tanzania was highly centrally controlled from independence in the 1960s until the mid 1980s when key food crops began to be liberalised. White maize is the staple food crop and over 80% of this is produced by small scale farmers owning between 1 - 3 ha of land. This contrasts with wheat which is produced mainly on large commercial estates.

The National Milling Company (NMC) was the sole buyer of maize from farmers until the 1984/85 season, when private traders were allowed to enter the trade to buy maize. The system of pan-territorial pricing was removed and replaced by market prices, although pan-territorial prices were still announced with little impact on the private trade and only as a means of fixing the Strategic Grain Reserve (SGR) buying-in price.

Output of maize is roughly 2.6 million tonnes, of which it is estimated that between 25% and 40% is traded. Given the trend of the economy towards cash and away from barter and subsistence, it is probable that the traded percentage has already edged up from 25% to at least 35%. 80% to 90% of this trade is handled privately, with the SGR absorbing roughly 70,000 tonnes, slightly over 10%.

Ownership of grain farming and trading is overwhelmingly in the hands of the private sector. The NMC and the Co-operative Unions ceased to have a significant role in farming and trading from the start of the decade. While there has been some dispute as to whether private traders are allowed to purchase directly from farmers rather than through primary societies, this is the common mode of operation.

The switch from pan-territorial to market prices has removed the distortion that was present in the incentives to produce in relatively isolated parts of the country. Liberalisation has resulted in substantial shifts in the incentives for different areas. Dodoma shifted from being a maize importer to overtaking the position of Iringa in supplies to DSM. For the Tandale market in Dar es Salam, for example, Dodoma's share of that market has grown to roughly 45%.

Main commodities susceptible to warehouse development

Table 4 reveals that maize is clearly the most important of the food crops, and accounts for a stable 45% of production volume.

Table 4: Production of Major Food Crops, 1984/85 to 1995/96 (000¹ tonnes)

Planting Season	Maize	Paddy	Wheat	Sorghum	Millets	Fresh Cassava	Pulses	Total
1984/85	2,093	427	83	1,024	n/a	2,052	441	6,120
1985/86	2,211	547	72	943	n/a	2,031	321	6,125
1986/87	2,359	644	72	954	n/a	1,709	425	6,163
1987/88	2,339	615	75	682	n/a	1,736	385	5,832
1988/89	3,128	718	97	894	n/a	1,948	503	7,288
1989/90	2,445	740	106	568	n/a	1,724	388	5,971
1990/91	2,331	624	84	750	n/a	1,566	425	5,780
1991/92	2,226	392	65	850	n/a	1,778	312	5,623
1992/93	2,282	641	59	719	210	1,708	406	6,025
1993/94	2,159	614	59	478	218	1,802	187	5,517
1994/95	2,567	723	75	839	411	1,492	378	6,485
1995/96	2,663	734	84	872	367	1,498	475	6,693

Source: Food Security Department (Ministry of Agriculture, Tanzania)

High volumes of output is a desirable criterion when considering establishing the use of warehouse receipt financing. High volumes suggest a high unexploited collateral base, a large market for bank lending and a high annual requirement of working capital in financing the crop. As far as could be ascertained, receipt financing has not been tried with maize. However, there has been experience in warehouse receipt financing in the cotton sector. Cotton is, of course, a much higher value crop and its main final products, lint and cottonseed are largely exported, providing added security to lenders.

Data for the cotton sector are given in the next section.

Main surplus and deficit areas

The bulk of the marketed surplus of maize, invariably white maize, comes from six regions, namely Dodoma, Arusha, Mbeya, Rukwa, Iringa and Ruvuma. Production statistics in these areas are given in Table 5

Table 5: Production of Maize in Major Maize Surplus Regions ('000 tonnes)

Season	Arusha	Dodoma	Iringa	Mbeya	Rukwa	Ruvuma	Sub-Total	% of National Total
1984/85	129	24	372	240	160	144	1,069	51
1985/86	198	17	282	232	136	206	1,071	48
1986/87	265	56	388	262	196	296	1,463	62
1987/88	242	45	436	336	129	241	1,429	61
1988/89	306	72	445	267	160	265	1,515	48
1989/90	229	36	457	275	160	212	1,369	56
1990/91	153	54	320	239	200	213	1,179	51
1991/92	161	21	465	288	217	231	1,383	62
1992/93	133	35	400	287	190	214	1,259	55
1993/94	64	53	326	213	202	141	999	46
1994/95	138	62	317	217	210	200	1,144	45
1995/96	143	86	318	216	204	202	1,169	44

Source: Food Security Department (Ministry of Agriculture)

The proportion of the total accounted for by the "big six" has declined to less than half but these areas remain, nevertheless, key surplus regions. With the exception of Arusha and Dodoma, these are in the south and south west regions closest to the borders with Malawi, Zambia and Mozambique.

The distribution of seedcotton production in Tanzania is revealed in Table 6.

Table 6: Regional Seedcotton Purchases ('000 tonnes)

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Mwanza	41.0	85.6	106.3	54.3	54.2	82.6	84.6
Shinyanga	68.0	112.9	123.0	60.6	68.2	106.8	107.8
Mara	18.3	30.3	23.6	11.9	17.2	31.9	26.9
Kagera	3.8	6.9	6.2	3.6	n/a	7.2	8.9
Tabora	2.0	14.4	17.0	7.8	5.2	12.3	13.2
Other Lake	1.6	2.4	5.6	2.2	3.4	1.1	0.9
Lake Zone	134.7	252.5	281.7	140.4	148.2	241.9	242.3
East Zone	5.4	14.5	26.5	8.6	6.6	8.3	10.8
Total	140.1	267.0	308.2	149.0	154.8	250.2	253.1

Source: Tanzanian Cotton Lint and Seed Board

In volume terms, maize clearly overwhelms seedcotton but once the value of the lint and seedcotton are taken into account, seedcotton is an important candidate for warehouse receipt financing. At roughly US\$290 per bale (the standard weight of a bale is 181kg), lint is valued at some US\$1,600 per tonne, approximately eight times the value of locally traded maize. Its export marketability is one of the main factors which facilitates the adoption of cotton for warehouse receipt financing.

Trade Structure

The maize marketing system is characterised by a very large number of small private traders who operate from production and urban centres alike. Almost all of these traders buy maize directly from farmers and bring the crop to wholesale markets. The procurement at village level is typically by direct contact between trader and farmer, with virtually no role for primary, or regional wholesale, markets.

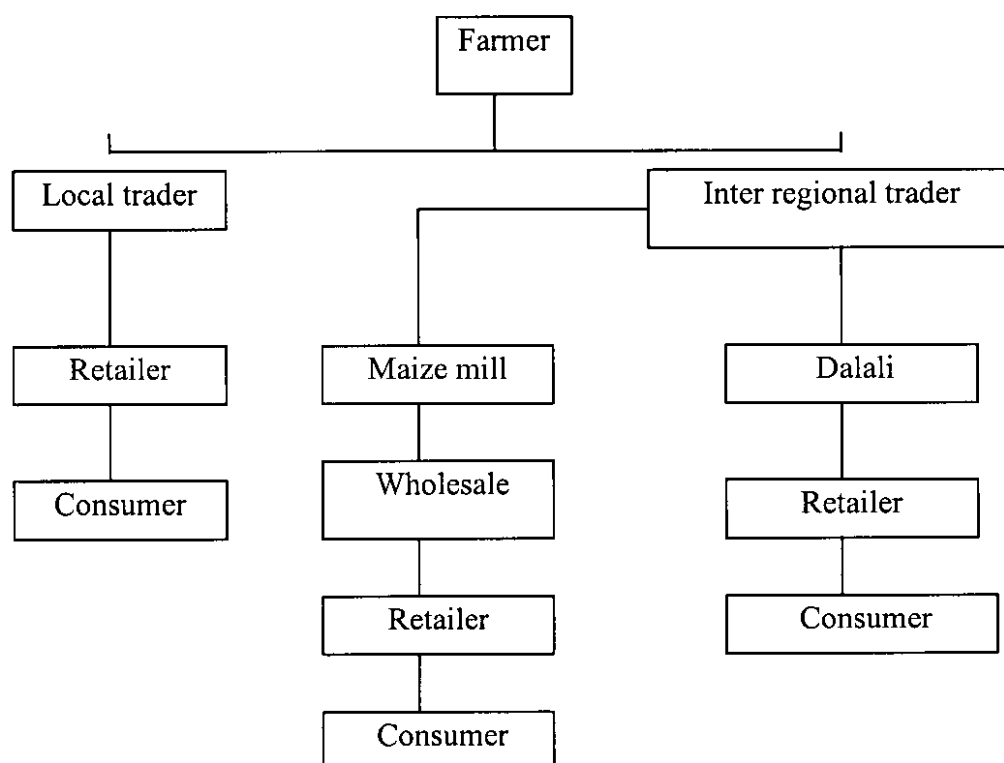
Most local traders in regional towns sell their maize on a wholesale basis to local retailers, while inter-regional traders servicing Dar es Salam sell their maize, almost exclusively through "Dalalis" (brokers which usually do not take title to the maize) to large millers or the export market or one of the food aid agencies, such as WFP. The "dalali" sell to the trade in general.

Large trade houses have emerged since the MDB study which showed trading to be almost exclusively in the hands of small indigenous traders with very few assets. Even now, the larger trade houses have little direct involvement in rural areas. Rather, they buy through medium sized trading firms who they use as agents. The skills of the larger trade houses are not primarily in buying in rural areas. Rather, they tend to buy through local traders which they use as agents. For example, Glencore trades maize in Tanzania or between Tanzania and overseas using Export Trading Company in Dar es Salam as its agent.

Consumers buy maize as an intermediate product, not as a final product. With the collapse of state monopolies, a notable feature of the maize trade was that maize grain rather than flour is traded all the way from the farmer to the retailer and consumer. One of the reasons for this notable feature is the collapse of the marketing system for flour and the proliferation of small hammer mills. However, maize millers are increasingly becoming an important link between the maize trade and the *sembe* (maize flour) consumer. Many of the small traders now deliver maize directly to the maize mills. In addition, several large scale private mills have been installed since 1992, particularly in Dar es Salam. Hence, an increasing number of consumers now buy *sembe* instead of maize. In general, the switch to a liberalised grain market has made generalisations about trading structures more difficult to make.

The delivery of maize to the larger millers is usually in small and regular quantities. This method is governed by the mills' inability to stock large quantities of maize as well as their difficulty in raising working capital to purchase large orders of maize.

The maize marketing chain can be depicted as follows:



So far as warehouse receipt financing is concerned, it is traded maize which is of potential relevance as collateral. MDB estimates that marketed production of maize for 1995/96 is 668,000 tonnes. Indeed, this accords with the marketed proportion of roughly 25% each year, though the MDB may have underestimated the traded proportion.

Figures which have been collected by the MDB in seven wholesale markets in five regional urban centres (of which there are 20) indicate that deliveries to the main markets are a small percentage of the estimate of 668,000 tonnes quoted above. The collection of this data has been patchy, not covering the same regions each year. Data are given in Table 7.

Table 7: Bags of Maize Delivered to Key Markets (tonnes)

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
Dar es Salam	33,926	58,552	52,764	67,095	78,793	71,935
Arusha	n/a	n/a	3,403	2,265	2,258	n/a
Mwanza	n/a	n/a	2,162	5,163	n/a	n/a
Lindi	n/a	n/a	1,104	1,757	2,008	n/a
Mtwara	n/a	n/a	1,508	3,044	3,331	11,213

Source: Marketing Development Bureau (MDB)

The figures for deliveries to the main markets have not increased as quickly as they might have done owing to the installation of additional new large-scale maize mills. This milling capacity is in addition to the existing milling capacity of 75,000 tonnes owned by the National Milling Company (NMC). The figure for deliveries to DSM is little more than 70,000 tonnes which, assuming a population of 3 million, indicates annual per capita consumption of 24 kg. This seems very low figure for a city where maize is the staple food and significant quantities are used in poultry feed; there may have been some under-recording. In the event of establishing a warehouse receipt system, this raises the question

of optimal location of warehouses; should one have a central location in Dar, with the danger of only capturing a small proportion of the milling market, or should it be decentralised in local rural sites, with corresponding diseconomies of scale.

Main wholesale operators (origin, legal status, activities and source of finance)

There are a large number of private traders who are wholesalers for maize. Consequently, it is difficult to estimate the market share of these operators. The main buyers of maize operate in Dar es Salam. So far as the development of warehouse receipt initiatives is concerned, it is sensible to focus *a priori* on those traders and their warehousing which can benefit from the infrastructure and volume of throughput of the capital, at least as a starting point.

Table 8: Wholesale Operators in Tanzania

Name	Origin	Status
Cargill	Multinational	Private trader and miller
Coast Millers	Tanzania	Private trader and miller
Export Trading Co	South Africa	Private trader
Fida Hussein	Tanzania	Private trader
Interchick Feeds	Tanzania	Private trader and feed compounder
Louis Dreyfus	Multinational	Private trader
Mohammed Enterprise	India	Private trader
Port parastatal	Tanzania	Dar es Salam harbour authority
Rajan Industries	Tanzania	Private trader and feed compounder
Said Salim Bakhresa & Co	India	Private trader and miller
Strategic Grain Reserve	Tanzania	Government agency
World Food Programme	Multinational	Donor buyer
Zainabu Mills	Tanzania	Private trader and miller

These buyers will typically establish buying stations in the bush to fulfil short positions or use their network of contacts to buy to a desired long position. Since this practice of selling short exposes the trader to the risk of non-performance of quantity or quality specifications of a contract, many of the traders in Tanzania choose to deal with the uncertainty of delivery from growing areas by buying before agreeing a selling contract with a miller, food aid agency or importer.

Apart from the private sector, the other main buyer is the Strategic Grain Reserve (SGR). This is an important buyer, especially in remote areas, although the SGR purchases are planned to come increasingly from areas closer to Dar es Salam. Since SGR warehouses are well placed to participate in a system of warehouse receipt financing, it is worth here providing some statistics on the trend of SGR purchases since the start of the decade. The SGR used to be part of the NMC. However, in 1990 it was moved to the government's Food Security Unit agency. Since it has the dual aims of ensuring food security without undermining the markets of harming local traders, its policy is to purchase locally through its buying centres rather than import wherever possible.

Table 9: Cumulative Purchases of SGR Maize (tonnes)

SGR Centre	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Arusha	4,656	5,135	6,029	751	1,987	16,125	15,000
Dodoma	1,554	1,663	2,903	463	2,231	13,140	15,000
Shinyanga		2,383			2,871	558	5,000
Rukwa	6,582	25,840	19,610	8,700	4,846	12,330	10,000
Mabambako	2,587	17,141	12,717	3,754	1,308	7,931	10,000
Ruvuma	5,988	20,837	22,988	12,621	3,491	21,631	10,000
DSM				13,370	6,400	1,291	25,000
Other regions	4,912	11,864	5,833	1,509	141	-	-
Total	26,279	84,863	70,080	41,168	23,275	73,006	90,000

Source: Food Security Department/KILIMO

The main sources of SGR purchases given in Table 9 have been the main surplus areas. These are mainly the Rukwa, Ruvuma and Iringa (Ludewa district) and Arusha (Kiteto) regions. However, during the 1996/97 marketing season the SGR has planned to alter its main sources of maize by significantly reducing its maize procurements in both Rukwa and Ruvuma. The SGR is then going to increase maize purchases in the Dar es Salam and Dodoma centres, where the quality of the output is generally higher so long as sufficient volumes can be found. It is likely, therefore, that market prices for Rukwa and Ruvuma maize will decline unless alternative buyers can be found. The SGR mode of purchase is moving towards a tendering system, whereby invitations are made to buyers with which the SGR has frequent business contact to deliver to SGR warehouses. Some members of the trade complain that tendering has not been without stifling bureaucratic problems. A similar system is also employed by the World Food Programme (WFP) which invites competitive bids for delivery to its warehousing which is located in Isaka and Kigoma in the west of Tanzania (from where it provides relief to Rwanda, Burundi or Congo Kinshasa).

The port parastatal in Dar es Salam has bought the silos which were owned by the NMC. There were no reports of this organisation trading in maize.

The World Food Programme buys maize when there is a surplus of maize in Tanzania. In 1996, it bought 65,000 tonnes of white maize, and for 1997 it is hoping to reach a target of 76,000 tonnes, which is being purchased at an average price of US\$215 per tonne and is mainly destined for the refugees in West Tanzania. In the course of these operations, the WFP moves 17,000 tonnes of maize per month, some of which is milled at the NMC mill at Isaka for supplying maize meal to the west and Burundi. This mill is sourced from the WFP transit warehouse in Isaka, which has a storage capacity of 8,000 tonnes. WFP has a share in a further warehouse in Kigoma, on the lakeside bordering Burundi and Zaire. This is managed by the Tanzania Railway Corporation (TRC), while the port of Kigoma is managed by African Marine Surveyors (AMS). The capacity of this site is 12,000 tonnes, 2,500 of this owned by WFP. The WFP has plans to purchase and expand this mill, which has a current capacity of 1,000 tonnes of maize per month.

Market Share

It was not possible to obtain reliable estimates of the volumes concerned.

Systems of contracting and dispute settlement

The system of contracting for the purchase and sale of grain varies considerably from case to case. There is no standard system of contracting.

None of the players with whom we spoke had confidence in the current system of independent judgement through the courts. Rather traders and processors rely on reputation which is established by positive business experience with a client. Generally, they reported few problems in meeting contract requirements since their clients are vetted by experience. One non-performance of contract or attempt at fraud, for example, would lead to that client being eliminated from future involvement with that company. Disputes are dealt with through the courts. However, since recourse to the legal system is no guarantee of compensation and is likely to be a costly and lengthy process with unpredictable outcomes, the private sector does not place reliance on legal protection, seeking assurance instead that legal recourse will not be needed. This, of course, reduced the number of players with which a company can trade and raises transaction costs.

There is scant use of standard GAFTA contracts, except in international contracts by the larger traders.

Location, status and current utilisation in warehousing

There are five main sources of warehouse capacity. First, we obtained a list of the warehouse facilities in Tanzania which were owned by the National Milling Company (NMC) prior to liberalisation, and which represent virtually the entire stock of warehousing space. This is attached in Appendix 6. There have been some transfers of this capacity to the Strategic Grain Reserve (SGR), the second source, and the private sector, the third source, which includes storage held by small and large trading firms and mills. The fourth source is approximately 300,000 tonnes of donor-funded warehouse capacity small 300 tonne units, roughly 1,000 in number dotted around the country. Finally, the co-operatives in Tanzania have their own system of storage. It is very difficult to be precise about much of this capacity without a more detailed field visit expressly for this purpose.

Those warehouses which have been sold by the NMC are generally in the grain-cultivation areas. Those which it has kept are in city locations. This would lend itself well to a warehouse receipt financing system based around deliveries and purchases at key marketing points. Some of the capacity which exists is in the form of silos, such as Iringa and Arusha in the surplus areas and Dar es Salam in the deficit area. We are not certain of the condition of this stock but these SGR facilities are well-located, as Table 10 reveals:

Table 10: Warehouse Capacity Owned by the Strategic Grain Reserve

Zone	No. Of Godowns	Storage Capacity (tonnes)
Arusha	1	30,000
Dodoma and Singida	4	34,500
Kipawa/Dar es Salam	4	52,000
Makambako and Mbozi	5	30,000
Shinyanga	1	10,000
Songea	2	25,000
Sumbawanga and Mpanda	3	29,400
Total	20	210,900

The data on warehousing stock gives only a partial picture. Private stores for all sorts of uses are being built all of the time, while some of the stores which were built with the intention of wholesale grain storage in mind have, according to some anecdotal reports, been adopted by other uses, such as football! At the same time, some warehousing space from Makambulu and further south is often inaccessible due to poor roads.

We are also aware of one thousand 300 tonne village warehouses having been built with funding from various donors under EU funding arrangements. Further work would be needed to assess whether these might be a useful conduit for rural financing initiatives in the light of their locations in relation to crops and the difficulty in supervising these facilities.

Public policies re storage and their application

The grain sector in Tanzania was liberalised in 1984/85, a process which was completed in 1990. The old system, involving a single channel involving NMC working with regional co-operatives and their primary societies, using pan-territorially centrally determined prices, is described on pages 420 to 430 of Coulter and Golob (1992). The system relied upon Government banks' continual provision of subsidised funding, but with the renewed emphasis on financial discipline at the end of the 1980s, it could no longer be continued. Under the old system, the National Milling Company (NMC) was the sole buyer and storer of maize, which was milled and redistributed by the company. Prices for maize were fixed pan-territorially, although the retail price for meal varied. The NMC never gave credit directly, although the co-operatives, which bought from local farmers were allowed cheap credit through the National Bank of Commerce (NBC), at rates which were typically 5% below the market rates, for example 25% compared to 30% for Tanzanian Shilling loans. The NMC also received funds at subsidised rates to buy from the co-operatives. The government and the NBC eventually ran out of funds to finance these operations.

Under the current system, the private sector receives no help from the government. Much of the NMC warehouse capacity is unused since it was designed specifically for a monopoly buying operation which no longer exists. As a result of disuse, there have been reports that some of the NMC warehousing stock has fallen into disrepair and requires reconditioning. The use of rail freight for large volumes from locations such as Arusha on Tanzanian Rail is also now inappropriate and has been universally replaced by truck transport. This is far more economically viable to groups of smallholders which can make up the volume for a 30 tonne truck.

While domestic grain trading has been fully liberalised, there is still some government involvement in the export trade. The Food Security Department may decide that in order to maintain stocks, exports should be restricted. Hence, there is a system of export quotas in

place which varies with the local supply conditions. According to reports from traders, some of these quotas and licences may be bought and sold corruptly.

Local government interacts with the private grain trade in a number of important ways. In particular, district or town authorities provide and regulate official markets in the towns, levy charges on traders both in the rural district where the crop is purchased and at the market where it is sold. In some cases, local government deliberately restrict the trade through requirements for permits to buy crops and/or dictating from where they may be bought.

There is no central co-ordination of these interventions and, therefore, their impact varies from one area to another. One trader expressed his frustration at the unpredictability of local village and district levies, marketing board levies, export stamps and so on.

There is some suspicion about the fairness of private traders in government circles. According to the MDB, the current system

"does not offer a completely free, fair and transparent competition because of various factors, including (i) the traders using containers, instead of weight, as a unit of purchase; (ii) traders roam the villages where they buy food crops from individual farmers at uncompetitive prices and (iii) there is no grading system which would provide an incentive to maintain the quality of crops"

Hence, recent reports of the Marketing Development Bureau (MDB) recommend that the MDB prepare trade guidelines and regulations to control private trading. It suggests that the Food Security Department be given the responsibility of regulating the trade.

Current systems of trade financing

Earlier it was mentioned that the experience of warehouse receipt financing in Tanzania is limited to the cotton sector. This was designed by the Common Fund for Commodities (CFC) to be based on the use of groups of local godowns.

Before liberalisation, the primary societies would pledge bales of cotton to the Cotton Board in order that they could repay for the inputs with which they had been supplied. Since this system has been scrapped, there is a need for a substitute system of finance. Since very few companies have the financial strength to raise capital on the basis of their balance sheets alone, the number of applications of spray (necessary for the treatment of boll weevil in seed cotton) has in many cases reduced from 5 to 6 (the optimum) to only one per annum.

The CFC wanted to start with regional warehousing, in groups of local level co-operatives. It hoped to introduce a system of warehouse receipts issued from these regional points. Banks would lend to traders, who are also ginners of seed cotton, while guarantees would be provided by the government's Registrar of Co-operatives. The Audit Unit from the Ministry of Agriculture would provide comfort that its guarantee would be safe. The hope was that with these new lines of finance, the traders would be able to purchase greater volumes from the co-operatives at local level (the primary societies) and even provide them with pre-finance for inputs such as sprays and fertilisers.

The CFC project was aimed at using primary society (PS) stores, each with a 3,000 tonne capacity. This is small compared with the stores of big ginneries, which can store up to 4,000 tonnes of bales each. We cannot comment more specifically on the CFC project but would point out that any warehouse which issues credible warehouse receipts needs the

management of a recognised company. The more geographically spread are these companies, the more costly this management will be. The CFC hoped to use roughly ten warehouses in three areas in the north of the country (30 warehouses), where the quality of seed cotton is high.

Quality of cotton lint is defined in terms of staple length (the length to which the fibres can be pulled without breaking); the maturity of the fibre; the colour (i.e. whiteness of the lint), and the absence of foreign matter. The last of these two can be examined by eye at the PS stores by the store keepers. However, samples have to be sent to the Cotton Board laboratories in Dar es Salam to be checked by the gin inspectors for more detailed analysis. For export orders, an export certificate is required. The majority of the ginneries are located in Shinayanga and Mwanza in the north. Hence, while the stores are close to their market, the warehouse receipt financing initiative is very demanding in terms of the number of inspectors which are required to check all deliveries in and out of the warehouses. This is one of the reasons that the industry has not been impressed with progress made by the scheme.

From the discussions that NRI had with local banks and traders, warehouse receipt financing is used in only a few cases, and even then for companies whose assurance is based on its reputation rather than its commodity collateral.

Leading banks involved

ANZ and UBS have provided most of the impetus in commodity financing. According to trade sources consulted in DSM, the PTA Bank project has so far made little progress in the development of receipt financing. Some traders criticised the PTA for imposing unduly strict loan conditions. However, due to the briefness of our visit, it is difficult to say whether these criticisms are altogether fair, or not. Moreover the project is at an early stage of development, and the PTA Bank may simply have been "testing the water" before committing further resources.

The quasi-monopolistic role of the NBC was mentioned as a significant constraint on the development of trade financing. It is a key organisation in the PTA scheme, providing guarantees as well as having a network of branches and contacts around the country. Since the NBC has been reluctant to release its monopoly over financing, however, for the purpose of receipt financing schemes, it resells finance which has come from overseas banks at higher rates of interest rather than allowing those banks to sell to clients direct. One large trade house, too, wanted to provide pre-finance to the cotton sector, using NBC as guarantor. However, since the NBC would only channel funds through itself and take a 2% margin, the company refused to make advances.

When considered together with the earlier discussion on public policy, this experience suggests that there may still be aspects of the policy framework which constrain the introduction of effective warehouse receipt financing systems.

Inspectors

The main inspection companies involved in Tanzania are SGS and African Marine Surveyors (AMS). The latter company charges US\$0.5 per tonne for inspection, with a minimum US\$300 for the weighing of grains, sampling, quality analysis, inspection of cleanliness and ventilation. It also estimated that the cost of management of a warehouse (20,000 tonne capacity) is approximately US\$250 per month, including a guard and insurance. Its qualifications for inspection are membership of the Materials Management Body of Tanzania and the International Marine Surveying Institute, based in London.

Another inspection company which is involved is Audit Control Expertise (ACE). Both AMS and ACE are independent companies.

Seasonal Price Variability

The risks of trading or broking in grain in Tanzania are clear. These risks include expropriation, sudden prohibition of movement of exports, or wide currency fluctuations. For many it is still a high margin business. This is clear if we look at the local wholesale prices for maize in selected regional markets. We have converted these prices using the US\$ exchange rate which gives us the figures in Table 11.

Finance costs can often be met from low rates of interest in either the US or EU.

Table 11: Average Wholesale Prices of Maize in Selected Regional Markets, US\$ per tonne

Marketing Season	DSM	Mwanza	Mtwara	Songea	Shinyanga	Iringa	Dodoma
1993/94							
Jul	106.05	97.12	106.05	139.54	77.03	111.63	114.98
Aug	139.54	103.82	121.30	72.56	72.56	89.31	120.57
Sep	144.01	121.68	135.08	72.56	68.10	81.49	139.54
Oct	151.07	141.36	138.49	64.74	65.82	77.69	134.88
Nov	172.65	144.59	148.91	71.22	65.82	76.61	151.07
Dec	194.23	156.46	164.56	71.22	98.19	86.32	172.65
Jan	182.79	185.83	187.19	71.08	111.70	116.78	187.86
Feb	162.48	184.82	193.61	106.62	105.61	121.86	213.25
Mar	162.48	162.48	130.65	106.62	101.55	132.01	213.25
Apr	118.42	118.42	124.99	128.28	123.35	133.22	148.02
May	118.42	123.35	118.42	134.20	108.55	152.95	93.75
Jun	108.55	133.22	111.84	138.15	82.89	138.15	83.88
1994/95							
Jul	102.94	111.68	121.39	92.26	83.52	132.07	121.39
Aug	101.97	113.62	131.10	101.97	85.46	132.07	131.10
Sep	101.97	121.39	145.67	101.97	95.17	151.50	145.67
Oct	162.03	125.81	171.56	109.61	99.13	127.72	181.09
Nov	190.63	128.67	219.22	131.05	104.84	133.44	219.22
Dec	257.34	125.81	266.88	152.50	116.28	142.97	266.88
Jan	269.37	140.26	260.08	148.62	124.47	154.19	167.19
Feb	250.79	104.03	241.50	130.04	135.61	148.62	241.50
Mar	250.79	117.04	241.50	130.04	148.62	148.62	241.50
Apr	184.90	109.18	228.93	114.46	123.27	146.16	228.93
May	105.66	98.61	110.06	105.66	96.85	123.27	154.97
Jun	105.66	103.90	110.06	88.05	66.92	96.85	132.07
1995/96							
Jul	115.32	126.85	127.67	82.37	64.25	95.55	127.67
Aug	140.03	128.49	140.03	82.37	70.84	75.78	140.03
Sep	162.16	126.31	162.16	85.35	78.52	83.64	162.16
Oct	196.30	131.43	196.30	85.35	78.52	90.47	187.76
Nov	230.43	162.16	230.43	85.35	109.24	99.00	213.37
Dec	267.36	204.66	267.36	129.07	129.07	125.38	258.14
Jan	267.36	252.60	285.79	129.07	156.73	165.94	285.79
Feb	267.36	248.92	285.79	129.07	162.26	171.48	285.79
Mar	262.55	199.88	262.55	135.51	167.69	160.92	262.55
Apr	318.45	152.45	199.88	135.51	174.47	182.94	191.41
May	260.86	105.02	127.04	132.12	108.41	169.39	149.06
Jun	221.00	111.34	106.28	109.66	86.04	131.59	126.53
1996/97							
Jul	126.53	153.52	118.09	101.22	70.85	101.22	92.79
Aug	107.99	143.42	126.55	101.24	80.99	75.93	92.80
Sep	106.30	160.29	126.55	101.24	96.17	101.24	104.61
Oct	106.30	160.29	148.48	104.61	97.86	109.67	107.99

Source: KILIMO/MDB

The depreciation of the Tanzanian shilling has been only gradual. Hence, the strong performance of nominal prices is reflected in US\$ prices too. For contracts with the large food aid donors, such as WFP, contracts are expressed in US\$ in any case. Any depreciation of the local currency is, therefore, shielded against depreciation yet maize is bought in local currency with potential currency windfall gains.

It is interesting here to point out some features of the price data. The figures for nominal prices reveal some premia for maize from Dodoma and Songea, which traders often attribute to higher quality. If Dodoma has a good year then it will supply 70% of the maize

requirements in Dar es Salam, while maize in the extreme south-west of the country tends to be bought by Zambia. This is largely due to very high transport costs from that region, particularly when rural roads become impassable during and after the rains. Indeed, it is often cheaper to send maize from South Africa by sea freight from Durban to Dar es Salam than to freight maize cross-country.

The arrival of the rains in November usually sends prices into an upward spiral as stocks of maize become inaccessible. The movement to a new level has an impact in raising overall level of annual price volatility.

To elaborate on the returns available to storage a little more, Table 12 calculates gross returns to trading maize, following a July purchase.

Generally, July seems to be the cheapest month of the year to buy maize. In Table 12, a simple calculation has been performed, taking the percentage increase in the maize price over the July price. The table reveals impressive gross returns to the purchase of maize such that rates of 50% of more are usually achieved, on average, whatever month is chosen.

BOX C: Estimate of Returns to Storage for a Typical Trader with Access to Capital

average gross monthly return to storage, per tonne			
for 6 months	60%		
per month	9%	US\$110 =	\$ 9.90
monthly costs, per tonne:			
in-out handling	\$2 per 6 months =		\$0.33
storage charges			\$1.75
wear and tear of bags, 2 uses (\$8/12 months)			\$0.67
shrinkage	0.2%		\$0.22
insurance	0.145%		<u>\$0.14</u>
total direct costs			<u>\$ 3.11</u>
margin over attributable costs			\$ 6.79
i.e. about 6.2% per month on the initial investment in the grain			

In this way a wise investor in grain storage can make average returns of about 6.2% per month in real terms, net of all attributable costs. This can be compared to a monthly interest cost of about 1.2% per month, calculated as follows:

money interest rate	=	25% p.a
less est. currency depreciation	=	10% p.a.
real interest rate	=	15% p.a.
	=	1.20% per month

As in the cases of Zambia (Coulter, 1998), it is currently possible for judicious investors in inter-seasonal storage can make very high returns.

In certain cases, there is an uneven pattern of price movements. For example, in Mwanza and Iringa in 1994/95, there is a small 5% increase in price compared to increases of 75% in Dar es Salam. This may be due to the poor spatial integration of the regional markets which prevented the relative scarcity of maize in the capital being felt in the regions, or most likely that there were regional surpluses which prevented the regional price from moving in line with the capital city price.

At present, therefore, the private sector can usually make high returns from interseasonal storage. For instance, one of the traders with whom we spoke suggested that the cost of storage should be roughly 2 to 5 Tsh per bag per day. This is equivalent to approximately US\$1 to US\$2.5 per month, or US\$6 if we allow for financing and for the depreciation of the local currency too. (It should be remembered here that many sales contracts are specified in US\$, while the purchase of the grain is usually in local currency.) Box C illustrates the returns which can be made.

Table 12: Gross Returns, Based on Maize Bought in July, Sold in a Later Month (%)

Marketing Season	DSM	Mwanza	Mtwara	Songea	Shinyanga	Iringa	Dodoma
1993/94							
Aug	32%	7%	14%	-48%	-6%	-20%	5%
Sep	36%	25%	27%	-48%	-12%	-27%	21%
Oct	42%	46%	31%	-54%	-15%	-30%	17%
Nov	63%	49%	40%	-49%	-15%	-31%	31%
Dec	83%	61%	55%	-49%	27%	-23%	50%
Jan	72%	91%	77%	-49%	45%	5%	63%
Feb	53%	90%	83%	-24%	37%	9%	85%
Mar	53%	67%	23%	-24%	32%	18%	85%
Apr	12%	22%	18%	-8%	60%	19%	29%
May	12%	27%	12%	-4%	41%	37%	-18%
Jun	2%	37%	5%	-1%	8%	24%	-27%
Average	42%	48%	35%	-32%	19%	-2%	31%
1994/95							
Aug	-1%	2%	8%	11%	2%	0%	8%
Sep	-1%	9%	20%	11%	14%	15%	20%
Oct	57%	13%	41%	19%	19%	-3%	49%
Nov	85%	15%	81%	42%	26%	1%	81%
Dec	150%	13%	120%	65%	39%	8%	120%
Jan	162%	26%	114%	61%	49%	17%	38%
Feb	144%	-7%	99%	41%	62%	13%	99%
Mar	144%	5%	99%	41%	78%	13%	99%
Apr	80%	-2%	89%	24%	48%	11%	89%
May	3%	-12%	-9%	15%	16%	-7%	28%
Jun	3%	-7%	-9%	-5%	-20%	-27%	9%
Average	75%	5%	59%	29%	30%	4%	58%
1995/96							
Aug	21%	1%	10%	0%	10%	-21%	10%
Sep	41%	0%	27%	4%	22%	-12%	27%
Oct	70%	4%	54%	4%	22%	-5%	47%
Nov	100%	28%	80%	4%	70%	4%	67%
Dec	132%	61%	109%	57%	101%	31%	102%
Jan	132%	99%	124%	57%	144%	74%	124%
Feb	132%	96%	124%	57%	153%	79%	124%
Mar	128%	58%	106%	65%	161%	68%	106%
Apr	176%	20%	57%	65%	172%	91%	50%
May	126%	-17%	0%	60%	69%	77%	17%
Jun	92%	-12%	-17%	33%	34%	38%	-1%
Average	104%	31%	61%	37%	87%	39%	61%
1996/97							
Aug	-15%	-7%	7%	0%	14%	-25%	0%
Sep	-16%	4%	7%	0%	36%	0%	13%
Oct	-16%	4%	26%	3%	38%	8%	16%

Note: These figures assume no weight loss

Source: KILIMO/MDB

Public and private initiatives to improve market performance

The co-operative system established by government after independence was set up on a regional basis, for example the Iringa and Mufundi Regional Co-operative Union (IMUCQ). Their role has started to be replaced and reorganised along private sector lines under which farmers have set up co-operatives to market their produce.

In contrast with the produce markets for coffee, cotton, cashews and tobacco, maize has no regulating authority. These co-operatives' methods of marketing and pre-financing are quite different. In tobacco, for example, Tanzania is divided into seven regions which each have their own monopoly buyers under a system of contract farming. Credit which is given for inputs in each of these regions is easily recouped since the tobacco farmer will automatically sell the produce back to the provider of the credit.

Coffee, which is an auction crop in Tanzania, does not benefit from such segregation in input supply. Instead it uses a voucher system, with which the farmer can purchase inputs. There are two risks in such a system of credit, so far as the buyer is concerned. First, the farmer could use the inputs and sell to a competitor, though that would impair the relationship of the farmer with the buyer to the farmer's cost. Second, there have been instances of the voucher being traded or bartered, defeating its purpose.

The influence of government at local level is felt partly in the local levies which have to be paid by the trader. Since these are not uniform, they are an uncertain part of local trading and have affected trading margins adversely. For example, there are village and district (*ushuru*) level levies of between US\$2 and US\$5 per tonne of maize. There are also other levies which depend on the commodity in question. For cotton, for example, there is an export levy of 2%, a Tanzanian Cotton Board (TCB) levy of 2% and a stamp duty of 1.2%.

Agricultural credit is a key constraint, a problem which is related to the incentive of the farmer to take credit from a buyer and then sell to another buyer at a higher price which does not reflect the repayment of the credit. Cargill has attempted to persuade the Ministry of Agriculture to collect the credit from whoever buys the cotton, which would then be repaid to the supplier of the inputs. This would be possible in theory since all trades in cotton are registered with the Cotton Association

Stakeholders and Researchers

The Tanzania Cotton Lint and Seed Board is the main body representing the industry in marketing and operations of the cotton sector where the only attempts at warehouse receipt financing have been made. This has liaised with the Common Fund for Commodities, the funding agency and the PTA Bank which has acted as the project executing agency and guarantor for loans.

In the maize sector, the Marketing Development Bureau (MDB) is the main body which collects information on the maize sector. However, it has not taken any initiatives on financing. Similarly, other multilateral agencies such as the FAO or World Bank do not have any projects in the field of warehouse receipt financing.

Key constraints

- Storage is under-utilised since it was designed for the use of the National Milling Company (NMC) monopoly prior to liberalisation. For small volumes, the bagged and silo warehouses are too remote for the use of small farmers, who now send their produce to market by truck rather than using rail freight. On-farm storage for subsistence and for trading reflects the inappropriateness of NMC warehousing and the lack of local buying centres.
- Wholesale operations lack standardisation. For example, there are insufficient scales in the localities. As a result the weights of bags which are delivered to traders vary considerably sugar bags of 150 kg as well as 90 kg NMC bags are used for maize which are not filled to standard quantities.

- There is no system for the grading of maize, an exercise which has to be performed by the millers themselves.
- There is no system of warehouse receipts for grain stored in warehouses. At the same time, the movement of interseasonal prices reflects that insufficient use is being made of stocks over the course of the year. A system of warehouse receipt financing would allow traders better access to credit while at the same time dampening price volatility.
- There are few transit depots in Dar es Salam for imported maize. Hence, in times of drought or flooding when large quantities would need to be imported, the central port warehouses would be insufficient.
- The bagging of maize in Dar es Salam is performed under a monopoly agreement with the Tanzania Harbour Authority (THA) by a UK company, Nectar. Recently a vessel was stranded in dock because de-bagging could not be carried out by this operator since its equipment could not handle the size of bags that were available. Other operators were available to carry out the work and traders were lobbying the Ministry to allow one of these companies to perform the task. A legislative solution allowing greater competition in this field of operations would probably be more suitable.
- Standard contract forms are not used. Hence, disagreements may arise over contract terms for which there is no arbitration.

Uganda — the role of warehousing

Main commodities susceptible to warehouse development

The development of warehousing initiatives in Uganda could be applied to a number of crops which rely heavily on organised storage. These are coffee, cotton and maize. Others which are produced in high volumes are the country's matooke (cooking banana) crop.

It is conceivable that progress could be made in making credit available to the growers and traders of this crop too, given that it commands such importance in the local diet of East Africans.

Table 13: Crop Production, '000 tonnes

Crop	1992	1993	1994	1995	1996
Beans	402	428	378	387	405
Maize	657	804	950	912	938
Sorghum	375	383	390	398	405
Total	1,434	1,615	1,718	1,697	1,748

Source: National Agricultural Forum

In addition to the statistics in Table 13, the procurement of coffee in the country was roughly 264,000 tonnes in 1996/97 (4,402,909 bags of 60 kg each). Coffee exports in 1995/96 were valued at almost US\$389 million. There is also an output of approximately 22,000 tonnes of seed cotton with a value of almost US\$8.0 million. It is hardly surprising given these figures that the majority of financing initiatives in Uganda have been seen in the coffee sector.

A well managed bulk warehouse suits the role of a market location. In turn, a vibrant spot market which benefits from healthy liquidity is the ideal venue for a commodity exchange where produce may be bought and sold for current or future delivery, or even for price risk management using paper trades.

In this section on Uganda, we shall refer to some of the opportunities in maize as well as some of the experience in other crops.

Main surplus and deficit areas

Maize is grown in all parts of Uganda. However, the main maize growing areas are in the vicinity of Lake Victoria, extending to the central plateau. Other main areas are the high altitude areas of Kigezi, the Rwenzoris and the mount Elgon slopes. Overall production and area planted are given in Table 14.

Table 14: Maize Production 1992 to 1996, Uganda ('000 ha, '000 tonnes)

	1992	1993	1994	1995	1996
Hectares planted ('000 ha)	536	552	574	597	621
Maize output ('000 tonnes)	657	804	950	912	938

Source: National Agricultural Forum

Uganda grows mainly white maize (i.e. with less than 5% of yellow maize). This has two growing seasons. The first season crop, which accounts for about 70% of the annual crop are planted in March and April and harvested in August and September, while the second season commences in August or September while harvesting is in January/February. In the case of Kapchorwa, however, there is only one season for maize, with planting around March/April

and harvesting in November/December. Maize and beans together account for between 25% and 40% of the land under cultivation.

Trade Structure

The marketing of maize is essentially private. Right from the private sector through to export, the independent private sector is significant. Co-operatives which were mainly established by groups of private farmers are not significant in the maize trade, and indeed there is bitterness that earlier governments intervened to run co-operatives, which later failed and which are now being auctioned off by the government. At the export level, international food aid agencies like the World Food Programme, ICRC and the European Union play a more important role. However, WFP maize purchases are a small order of magnitude in comparison with overall maize production.

About 35% to 40% of the total maize produced in Uganda is consumed by the household on the farm, with the remainder being marketed. Hence, unlike in Tanzania, most of the maize which is produced is for sale.

Main wholesale operators (origin, legal status, activities and source of finance)

In the 1980s, the Produce Marketing Board (PMB) which had a monopoly for exporting the five non-traditional export crops, including maize, did not have sufficient working capital to buy all of the produce that it needed. The government, therefore, decided to liberalise trade, which had been marketed through single channels.

In the coffee sector, the number of traders has fallen as consolidation has taken place in the sector. There are as little as 30 traders now, compared to a number of 150 a few years ago. Many of these trade houses are international players, which can access finance on international commodity markets or from their Head Offices at rates of as little as 8% in US\$ terms. This has exacerbated the squeeze on the smaller trader. Warehouse receipt financing may help to put the smaller traders on more level terms with their competitors.

The main traders involved in the grain trade in Uganda are Magric, CEI and Lira. Cargill and the other multinational trade houses are not important players in the maize trade. Cargill's main involvement is in coffee and cotton.

Trade houses in Kampala typically buy from local traders who have lockups in the villages. Farmers may take their crop to these village traders or else a *bota bota* (agent delivering on the back of a bicycle) will deliver there.

Systems of contracting and dispute settlement

There is no central system of contracting or dispute settlement in Uganda. The only applicable system of contracting is that for international contracts, which would apply in any country. At the national level, problems mentioned included not having agreed procedures when a number of lorries arrive at a warehouse, confusion when different parcels of a crop are being delivered and book-keeping systems which do not work and which lead to disagreements about what was intended at the contract stage.

Location, status and current utilisation in warehousing

In order to estimate the stock of warehousing space in Uganda, we spoke to a number of organisations. The Produce Marketing Board (PMB) has some warehousing capacity, which

it rents out to the private sector at relatively nominal rents of US\$0.5 per tonne per month. These rates compare with typical storage charges of US\$1.25 to US\$1.50 per tonne, per month in the UK.

In the following table, we give estimates of warehouse capacity held by the PMB, the private sector, by the Uganda Co-operative Alliance (UCA) and by the Coffee Marketing Board (CMB).

Table 15: Warehouse Capacity in Uganda (tonnes)

	Tonnage	Other Capacity
1. Produce Marketing Board		
Nalukolongo	18,000	Cleaning 20t/hour
Tororo	20,000	
Jinja	20,000	Cleaning 150t/hour; Drying 15t/hour
Kasese	5,000	Cleaning 10t/hour
Kyazanga	15,000	Cleaning 30t/hour; Grain drying 10t/hour
<i>sub-total</i>	<i>78,000</i>	
2. Private Warehousing		
Lira Millers	4,000	
Ankole (Mbarara)	15,000	
World Food Programme	15,000	
Magric	3,000	
<i>sub-total</i>	<i>37,000</i>	
3. Other		
Coffee Marketing Board	60,000	
Uganda Cooperative Alliance (UCA)	150,000	
<i>sub-total</i>	<i>210,000</i>	
Total	325,000	

Storage capacity at the Produce Marketing Board (PMB) in Kampala was visited. Cleaning and fumigation facilities exist. There is a weighbridge, automatic bagging machines, a railway siding and physical and chemical grading facilities. Physical grading examines for moisture content, damaged and broken seeds and foreign matter. Chemical analysis examines for oil content, protein and starch.

In Appendix 5, we provide data on the revenues and costs of operating a PMB warehouse. Translating these costs at 1,130 Ush to the US\$, gives us monthly costs of around US\$3,900. The revenues of the warehouse which are received in ECU, translate to US\$4,700 per month, indicating the potential profitability of stores in Tororo.

In the Kampala warehouse, two of the three units are let out to the International Red Cross, (ICRC) and to the EU.

The storage space which is held by the Uganda Co-operative Alliance (UCA) has a capacity of at least 150,000 tonnes. The warehousing is organised at PS and DU levels in the co-operative hierarchy, although some of the space has been sold to non-co-operatives.

Levels of utilisation among these co-operative warehouses vary greatly, depending on the time in the year or the location. Overall, however, the rate is probably not in excess of 30% and may even be substantially below this. The 150,000 tonnes of warehousing capacity is in variable degrees of condition.

Public policies re storage and their application

Public policy regarding storage is set down in the Warehousing Act, which stipulates such matters as who may act as a warehouseman, how he may achieve a licence, the posting of a bond and the maintenance of stock. However, even the main participants in carrying out research and implementing new warehousing legislation are unsure of the time schedule for various measures to be carried out. While the Act contains many stipulations, they have to be supervised by the Authority, a government entity, which has yet to be nominated. Hence, in practice the implementation of a structured system warehousing has yet to arrive. The privatisation of the PMB would be an ideal time to add teeth to the central regulation of private operators.

Current systems of trade financing

There are severe difficulties in obtaining access to funding for farmers. Typically, the banks demand that the borrower raise a significant amount of collateral, for example, property in the centre of Kampala to the extent of US\$25 per acre. The banks are, therefore, very cautious in lending, preferring to deal with large farmers only. For the maize trade, this is a particular difficulty since small farms are the predominant form of cultivation. Indeed, we heard some anecdotal evidence from ACDI/VOCA that the East African Development Bank had turned down credit facilities to an Indian farmer in Sango Bay with one of the largest land holdings in the country, at approximately 200,000 acres — a farm with new equipment and a 11,000 tonne silo.

Some of the medium sized traders in Uganda such as Magric are able to obtain pre-finance from some of the larger traders such as ConAgra and Louis Dreyfus if they are acting as agents of the larger players. Hence, European US\$ rates of 10% to 12% are achievable, much lower than the rates available in Uganda which are around 20% for the same currency. Links with South African trade houses are also sometimes employed for commodity financing, for example, joint-venture purchases in the grain market by Exatrade and Magric.

Orient Bank is one of the more important banks in Kampala which are engaged in warehouse receipt based export financing. In most cases, the bank has a strong relationship with the borrower already. The bank stated that it would not consider giving funds to a domestic miller for operations solely within Uganda since it perceives this as a much greater credit risk. The lending policies of Greenland and Nile Banks are similar.

In the coffee sector, export financing is arranged but in practice lending from local banks is often simply a transfer from the central bank of the Head Office for the purchase of stock locally and is not a form of receipt financing at all. The stock is bought in Europe, for example, and is delivered to its destination and payment is made against the delivery of documents from the correspondent bank to the issuing bank. Coffee houses typically provide finance from foreign facilities straight to farmers as well, similar to a form of contract farming. In the sugar sector, in which there are three large factories, output is sold rapidly after production and requires only limited amounts of finance for stockholding purposes.

Warehouse receipts may be used in conjunction with different types of funding. The most common of these is the Letter of Credit (LC). Where maize, for instance, is bought as a raw material for processing by a miller, the bank may open an LC allowing the miller to raise the cost of processing against the warehouse receipt for grain held in bulk or bagged storage. This facility may be drawn upon from the start of the credit period in small tranches, with occasional peaks to coincide with seasonal demand for maize flour or mealie mealie. This is typical in cotton where a "green clause LC" is issued, allowing the ginner to draw down on

the facility until processing takes place. Once the form of the raw material has changed by further processing, then the warehouse receipt no longer represents the original stock and from this point credit cannot be given on that portion of the stock.

Banks which are involved in such arrangements need to perform considerable work to verify the status. This is the case to ensure that other parties do not have superior claims over the stock, especially tax authorities. Consequently, fees range from LIBOR +2% to +6%, as well as an upfront fee for "success" or "failure". In other words, the bank aims to cover its costs whether or not it is able to continue with the loan agreement. In addition, there is an arrangement fee which is in the order of 1% flat or 1% annualised (i.e. less if the loan term is less than a year).

Leading banks involved

The main banks involved in financing initiatives in Uganda are Stanbic, Greenland, Nile Bank and Orient Bank.

Seasonal price variability

When we consider the movement of maize prices in Uganda in Table 16, there is some evidence that the percentage level of price volatility over the course of the year has decreased although it is not possible to base concrete conclusions on a short time period. In 1995, for example, the June price was over three times the lowest price in the year, in January. In 1996, the highest price was slightly more than twice the lowest, while in the following year, the highest was less than twice the lowest. This suggests that the market is making better use of its warehousing potential and is achieving a higher level of market transparency than in Tanzania, for example. However, it has still not achieved a proper carry structure over the year, meaning that the interseasonal price movements still do not reflect the cost of capital and finance of holding stock.

Table 16: Wholesale Prices of Maize in Uganda, US\$ per tonne

	Kampala	Gulu	Mbale	Mubende	Jinja	Fortportal	Hoimama	Arua	Masaka	Mbarara	Masindi	Kabale	Kumi	Kasese	Soroti
JAN '95	73	76	43	60	35	58	60	45	70	58	65	53	55	85	
FEB '95	75	80	60	76	48	73	77	70	60	60	74	70	66	70	
MAR '95	85	80	63	118	63	91	87	100	67	88	80	96	91	80	
APR '95	110	98	104	134	90	133	165	124	110	118	104	117	127	102	
MAY '95	128	125	130	150	100	153	165	150	120	145	110	127	138	100	
JUNE '95	255	123	135	135	110	160		150	150	150	120	136	150	120	
JULY '95	96	124	130	94	110	165		160	160	123	163	133	150	104	
AUG '95	80	85	105	70	103	80		63	160	63	115	97	83	75	
SEP '95	94	76	93	96		98		130	160	86	114	98	66	82	
OCT '95	100	75	90	100	120	160	65	123	140	81	185	95	75	100	
NOV '95	118	105	93	153	120	100	68	150	155	100	125	110	103	115	
DEC '95	133	120	140	150	120	128	100	150	160	136	123	120	120	116	
JAN '96	130	120	150	141	120	128	113	150	140	123	140	110	140	128	107
FEB '96	150	120	145	143	120	120	127	150	160	133	165	127	130	123	120
MAR '96	155	133	120	154	120	130	140	150	153	138	128	137	100	127	
APR '96	120	113	110	133	100	140	125	150	158	140	105	140	150	130	130
MAY '96	147	153	125	165		135		187	163	157	140	148	150	150	137
JUNE '96	208	173	125	158	180	183	123	200	177	188	154	180	195	154	162
JULY '96	190	150	153	117	180	200	120	183	187	143	153	157	190	155	100
AUG '96	130	122	160	126	160	140	125	190	192	102	138	103	100	146	107
SEP '96	140	178	175	188	140	173	137	250	210	170	150	145	167	163	
OCT '96	203	210		250		220	143			210	200	195	200	208	167
NOV '96	244	228	260	238		238	133			250	253	230	228	234	203
DEC '96	223	240	285	237		225	150	330		233	253	245	250	223	
JAN '97	203	237	217	205	215	200	173		100	175	215	220	155	200	
FEB '97	208	230	200	200	190	160	168	233	203	170	217	200	148	227	
MAR '97	226	254	200	237	243	205	180	250	210	230	250	263	202	258	197
APR '97	283	320	270	267	265	250	230	285	288	280	240	350	300	420	307
MAY '97	340		283	337	280		245	320	295	316		335	340	420	398
JUNE '97	353		500	353	365			500	405	478	430		390	413	487
JULY '97	363		400	330	275	500	245	350	475	425	425	450	367	400	395
AUG '97	233	230	375	170	185	300	260	300	296	160	250	200	200	213	195
SEP '97	180	183	300	200	180	200	250	265	230	175	257	260	193	205	150
OCT '97	250	250	200	168		235	217	290	267	227	320	250	250	270	
NOV '97	250	248	200	223		230	183	320	263	202	320	210	201	270	250

Source: Ministry of Trade

Public and private initiatives to improve market performance

One of the main innovations which may take place in Uganda in the coming years is the launch of a commodity exchange. A feasibility study and business plan has been carried out by ACIDI/VOCA and it is anticipated that an exchange would start from a "buyer beware" market place, progressing to a venue for inspection and sampling. If it were to trade maize alone, then a volume of roughly 300,000 tonnes would be required. At US\$200 for maize and a 0.5% commission, this would provide an income of US\$300,000 per annum. In practice, an exchange could allow for trading in a variety of other, higher value crops too.

The main maize traders such as Magric welcome the prospect of an exchange to obtain produce at the most competitive prices. At the moment, the small number of traders each sending out market information with uncertain validity (such as tightness of stocks, when secret supplies are being stored) hampers the transparency of market information. Indeed, most of the local trade houses in maize are overleveraged and would welcome any method of achieving lower purchase prices and systems of securing cheaper finance. Since their balance sheets are not strong, warehouse receipt financing presents possibilities to raise funds where none were available before.

The Common Fund for Commodities and the Ministry of Trade and Industry are engaged in a project to explore ways of using the PMB as an exchange. Since the PMB stores are centrally located, they are at least an ideal location.

It is worth at this stage reporting a little on perspectives from the coffee sector. The establishment of a presence of several of the larger coffee trade houses in Kampala underlines their keenness to be involved locally. Between Cargill, Louis dreyfus, Newmann, Volcafe and Outspan there is a 60,000 tonnes warehouse capacity, which is providing the conditions for containerisation to take place at source, not just at Mombasa. The Coffee Marketing Board also has sizeable storage capacity, also 60,000 tonnes, which might well provide a suitable location for a coffee exchange. The Uganda Coffee Development Authority (UCDA) concurred with this view. Since Kampala might well become the final port of loading before Rotterdam or Hamburg, then it seems logical to consider Kampala as a trading point where traders would want to have access to transparent price information. While larger traders would guarantee the volumes traded and profile of the exchange, smaller traders could deliver to the exchange, be issued with a warehouse receipt, which they could then present to a bank to raise credit.

In the future, it might be possible to envisage a situation where the central data of stocks is updated with information of arrivals of coffee into remote locations. However, to be able to issue warehouse receipts based on arrivals at remote warehouses implies a need to monitor those arrivals independently, at great cost. This requirement might be relaxed where there is a system of certification of warehouse operators and owners and where the threat of losing an operating licence is sufficient deterrent to malpractice. Such a situation has been achieved over a considerable period of time in South Africa with the co-operatives.

Much work has been carried out by the ACIDI/VOCA group which are funded by the USAID. In Uganda, the progress in promoting the concept of warehouse receipt financing was made initially by the World Bank which proposed that a Warehouse Receipts Task Force be established. This then proposed that a Warehousing Act formalise such questions as who may perform the role of a silo operator and which silos are suitable. Prior to this Act, the only legislation in support of warehouse receipts was the Sale of Goods Act.

So far as the funding of other warehouse receipt financing initiatives is concerned, the Common Fund for Commodities has assisted the PTA Bank and the Swiss based company Commodity Risk Management (CRM) to devise schemes in the cotton growing areas of Tanzania as well as for coffee in Uganda. The latter has a inspection company which operates in several African countries called Audit Control Expertise (ACE). Banks which are involved in conjunction with ACE include the Nile Bank and Orient Bank. Their form of finance is mainly for coffee exports.

Stakeholders and Researchers

The main collaborators which are interested in developing ideas, research and implementation in this area is ACDI/VOCA. It would also be possible to approach Makerere University, the Ministry of Agriculture and private sector companies to canvass their interest in involvement.

Conclusions

Ultimately, African Governments will have to decide which way they intend to proceed. We can identify the following suitable and feasible strategies. The most important hurdle is to improve the management of warehousing as a precondition for any financing initiatives to work. Grain standards, regulations, inspection bodies and commodity exchanges all help the achievement of successful warehouse receipt financing but are subsidiary to this overriding need.

- A market solution - deliberately avoiding complex legal and regulatory arrangements, with the result that warehouses management services are *bought* from international inspection companies, and other international companies which have the confidence of the international banking community. Legal reforms would be introduced only if they facilitate the operation of these companies. Warehousing companies might themselves form associations to establish and enforce professional standards. A purely laissez-faire approach would not change the development of finance from the present situation. Rather this strategy would employ the experience and credibility of companies who are highly familiar with warehousing management and trade finance. Their involvement would be sought to address market failure, e.g. where individual companies have not yet become involved because of the lack of other credible parties that they can contract with.
- An independent licencing and inspection body — sanctioned by Government, but deliberately insulated from the political process. This would have its own sources of financing (e.g. a per tonne levy on all produce moving through the marketing chain) and delegated authority to ensure compliance with the law. This is not an alternative to the market solution but rather a mechanism of oversight of private sector operators, akin to the Federal Government Inspection Service (FGIS) in the US. As an optional add-on it would be worthwhile only if it could be adequately trained to monitor warehousing activities. Again, these services could be bought from overseas companies qualified to do this, for example, the FGIS itself or the Canadian Grain Commission. Inspection companies which have formed from the privatisation of the Maize Board in South Africa might also be suitable. If a company were chosen to carry out the operations of the Independent Body, it would be desirable that it trained local inspectors and warehouse managers to improve the credibility of local companies in this important industry as part of its longer term mandate.

The creation of an independent inspection body is analogous to the action of the German and British Governments in passing decisions on their money supply to their respective Central Banks.

Recommendations

- Discuss with relevant African governments the type of strategy from the above choices they find suitable, acceptable and feasible.
- Continue our work to broker warehouse management companies and trade houses which have the credibility of the banking community. DFID has expressed its interest in the implementation of successful warehousing systems which help raise the living standards of the poor by financing part of the work to be carried out for the Common Fund for Commodities.
- Assuming that some private sector solution is agreed upon, more detailed costings of these strategies are needed.

As a primary "shopping list", the above would represent important progress. Lower priority measures to include are:

- Efforts should be increased to make the use of standard contract forms and arbitration in the event of disputes more commonplace.
- We will need to monitor the progress of the Warehouse Receipt Task Force in Uganda to see how useful this legislative approach of the World Bank will be.
- Monitoring should be carried out of new finance initiatives such as growth, collateral and credit factoring.
- In the light of the transfer of ownership of silos in South Africa, we should consider to what extent that there should be a code of practice in any country governing the ownership and control of warehousing to avoid the problems of local monopoly or monopsony arising in the grain market post-liberalisation. This could be a particular problem in those cases where a co-operative has been sold to a large trade house where there is little other local competition.

Further Research

- Since we have identified the benefits of operating via an exchange, we should explore to what extent we can spread the benefits of using SAFEX throughout other SADC countries. We are mindful here of the problem of basis risk.
- Investigate the potential of a Ugandan commodity exchange, centred first on coffee. Pre-feasibility work has already been carried out by ACDI/VOCA under USAID funding and yielded positive conclusions regarding the acceptance of potential users and the earnings stream which could be expected under prudent assumptions.

Bibliography

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- Appendix 2 SAFEX maize contract
- Appendix 3 Silos owned by coops in South Africa
- Appendix 4 Co-operative silo charges
- Appendix 5 Revenues and costs for Produce Marketing Board warehouse
- Appendix 6 List of warehouses owned by the National Milling Company, Tanzania

Appendix 1: Nicholas Norvell Itinerary and List of People Visited

1/11/97 London to Johannesburg

South Africa

In Johannesburg and Pretoria

South African Futures Exchange — Rod Gravelet-Blondin and Chris Sturgess
Wintergrain Producers Association/South African Agricultural Union — Nico Hawkins

Cargill South Africa (Pty) Ltd — Alastair Riach

Hochfeld Commodities (Pty) Ltd — Steve Hochfeld

Land and Agricultural Policy Centre (LAPC) — Brendan Bayley

ABSA Bank — Christiaan Venter

First Derivatives — Andre van der Veer

Unie Graankoopersie Beperk — Dirk Kok

Sentraalwes — Dr Anton Lubbe

Louis Dreyfus — William Dujardin

Grain Quality and Arbitration Services — Gert Delport

In Cape Town

H. Gwynne Jones — Exatrade Commodities (Pty) Ltd

Protoil (Pty) Ltd — Mike Johnson

Societe Generale — Amedeo Anniciello and Ian van Emmenes

Agricon — Ika van Niekerk

17/11/97 South Africa to Tanzania

Tanzania

Said Salim Bakhresa & Co — Said Salim Bakhresa

African Marine Surveyors Ltd — John B.K. Mahemba

Food and Agricultural Organisation (FAO)/ Ministry of Agriculture — G.M.

Demissie

Nyanza Co-operative Union — Mabula Mageta

Export Trading Company — Jayesh Patel

Food Security Department (MinAg) — Emmanuel Msuya

Marketing Development Bureau (MinAg) — Albert Ngondo

Tanzania Cotton Lint and Seed Board — Thomas W. Fille

Cargill Tanzania Ltd — Murtaza Rashid

21/11/97 Tanzania to Uganda

Uganda

World Food Programme — Benedict Fultang

Cotton Development Organisation — Apollo Makabuya

Bank of Uganda — Odwongo

ACDI/VOCA — Dann Griffiths, Clive Drew and William Kedrock

ACDI/VOCA — Asaph Besigye

Orient Bank — Ketan Morjaria

Satya NBM — Orient Bank Ltd

Audit Control Expertise — Christian Baine

Magric (U) Ltd — John Magnay

Uganda Co-operative Alliance — Msemakweli Leonard
Uganda National Farmers Union (UNFA) — Moto Julius Peter— Stanbic
Uganda Coffee Trade Federation (UCTF) Frederick S. Mulalira Kawuma
Produce Marketing Board — Francis Nagimesi and John Kirungi
Uganda Coffee Development Authority (UCDA) — Julius Madira
Cotton Development Authority — Apollo Makubuya
Agricultural Policy Secretariat — Perez Karuhanga
Agricultural Policy Secretariat — Willie Odwongo

2/12/97 — Return to London

Appendix 2 — White Maize Futures Contract Specification, South Africa

1. **Definitions**

- “Approved silo”** means a silo listed in appendix A, owned by an approved silo owner and approved by the clearing house for each maize marketing season in terms of the requirements set out in appendix D.
- “Approved silo owner”** means a silo owner approved by the clearing house in terms of the requirements set out in appendix C.
- “Delivery notice”** means a document in the form set out in appendix F which shall be presented to the clearing house by a short position holder desiring to make delivery of Safex silo receipts in satisfaction of a maize futures contract, in the manner set out in this contract.
- “Maize”** means white maize grown on the African continent, of the grade “WM1” as defined in the Safex Quality Standards for Grains and Oilseeds.
- “Maize marketing season”** means the calendar year beginning on 1 May and ending on 30 April, applicable to the May, July, September, December and March contract expiry months falling in that period.
- “Safex Grains Committee”** means a committee of experts in the grains industry appointed by the Safex AMD Management Committee.
- “Safex Silo Tariff Committee”** means a committee consisting of three silo owners and three other experts appointed by the Safex AMD Management Committee.
- “Safex silo receipt”** means a document issued by an approved silo owner in the form and on the terms set out in this contract and appendix B, a copy of which has been received by the clearing house from the silo owner.

2. **Contract unit and general specification**

- (a) Throughout this contract specification, ‘contract unit’ shall mean 100 metric tons of maize in bulk storage in an approved silo.
- (b) Short position holders may elect to make delivery of Safex silo receipts on any delivery day in the expiry month. Short positions which remain at the close of business on the last trading day, must be settled by delivery of Safex silo receipts by the last delivery day.

3. **Price**

- (a) The contract price shall be in South African currency per metric ton, with minimum fluctuations of twenty cents per metric ton. Until the first notice day of a contract, the daily fluctuation in the contract price shall be limited by an amount determined from time to time by the clearing house.

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- (b) The contract price shall subject to sections (c) and (d) below reflect the full consideration payable by the buyer for delivery of Safex silo receipts through the clearing house in accordance with this contract specification.
The seller and buyer shall be responsible for payment of storage and handling charges in terms of section 7(d) of this contract specification.
The seller shall, subject to paragraph (d) below, be responsible for payment of any levies or taxes that may become due, notwithstanding the fact that legal liability for payment may fall upon the buyer.
- (c) The contract price shall upon invoicing be adjusted for location differentials as determined by the clearing house, in accordance with section 7(b) of this contract specification.
- (d) The contract price shall be exclusive of any value added tax which may be or may become payable thereon, which shall be added to the contract price upon invoicing and shall be payable by the buyer.

4. Ownership and risk

- (a) Unless the seller is in default, the risk shall pass from the seller to the buyer at the close of business on the delivery day for which the seller has given notice of delivery, being delivery of Safex silo receipts through the clearing house.
- (b) The right, title and interest of the seller in the maize shall pass to the buyer when the buyer's payment therefor is received in full by the clearing house or by a settlement agent appointed by the clearing house.

5. Trading days

Trading days shall be all business days, except for a day which is defined by the clearing house as not a trading day. The last trading day shall be the seventh business day before the last business day of an expiry month. The clearing house shall give a minimum of 14 days notice in declaring a business day as not a trading day, provided that the clearing house shall endeavour to do so before the expiry month in question begins trading.

6. Expiry months

Expiry months shall be December, March, May, July and September.

7. Delivery procedure

(a) Method of delivery

A short position holder who wishes to make delivery of Safex silo receipts in satisfaction of a futures contract shall provide the clearing house through a clearing member with a delivery notice which shall be assigned by the clearing house to a long position holder as described in paragraph (f) below. The clearing house shall notify the clearing member representing the long position holder of the delivery which has been assigned and shall furnish the clearing member representing the short position holder with the name of the clearing member obligated to accept their delivery.

Delivery by a short position holder to an assigned long position holder shall take place through delivery to the clearing house of Safex silo receipts on a delivery day, subject to compliance with all the terms of this contract specification.

(b) Delivery points and location differentials

Maize in bulk storage in an approved silo may be delivered in satisfaction of maize futures contracts by way of delivery of Safex silo receipts through the clearing house. Payment by the assigned long position holder shall be at the mark-to-market price for the trading day immediately preceding delivery day as determined by the clearing house, adjusted for value added tax (if any), location differentials and storage and handling charges in terms of this contract specification. The location differential shall reflect the lower of the average road transport rate obtained from three hauliers and the standard Spoornet tariff, in rands per ton, as determined by the clearing house, for bulk transport of 10,000 metric tons of maize between the silo and Randfontein, Gauteng, which shall be the reference point for the contract price.

(c) Validity of Safex silo receipts

In order to be valid for delivery against futures contracts, Safex silo receipts must comply with the requirements set out in appendix E.

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- (d) **Storage and handling**
Safex silo receipts shall be subject to the standard storage rate specified by the Safex Silo Tariff Committee for each maize marketing season. This rate shall include all storage costs payable to the silo owner. The rate shall be quoted in cents per metric ton per day. The seller shall be responsible for charges calculated at this rate from the date of receipt reflected on the silo receipt up to and including the delivery day for which the seller has given notice of delivery, being delivery of Safex silo receipts through the clearing house. The depositor shall be responsible for all handling costs payable to the silo owner, including inloading and unloading of maize onto truck alongside silo.
Outstanding charges due from the seller, which have not been endorsed on the silo receipt by the silo owner as paid, shall be deducted from the seller's proceeds by the clearing house. Prepayment of storage and handling charges is not permitted or allowed for.
- (e) **Delivery notices and notice days**
A short position holder desiring to make delivery of Safex silo receipts against open futures contracts, shall deliver to the clearing house through the clearing member, a delivery notice in the form required by the clearing house, on a notice day. A delivery notice shall be delivered by the close of trading on the second business day prior to the intended delivery day. The first notice day on which notices may be delivered, shall be the second last business day of the month prior to the expiry month. The last notice day shall be the third last business day of the expiry month. A notice day must be a business day, provided that the clearing house may declare particular days not to be notice days. The clearing house shall give 14 days notice in declaring a business day as not a notice day, provided that the clearing house shall endeavour to do so before the expiry month in question begins trading.
- (f) **Assignment of delivery notices**
The clearing house shall assign delivery notices on the notice day on which the notice is received, based on open long positions at the close of trading on that day. Assignment shall take place by allocation of delivery notices to long position holders on a random basis.
- (g) **Date of delivery and delivery days**
Delivery of Safex silo receipts against an open futures position may take place on any delivery day during the expiry month, as elected by the seller. The first permissible delivery day shall be the first business day of an expiry month. The last permissible delivery day shall be the last business day of an expiry month. A delivery day must be a business day, provided that the clearing house may declare particular days not to be delivery days. The clearing house shall give a minimum of 14 days notice in declaring a business day as not a delivery day, provided that the clearing house shall endeavour to do so before the expiry month in question begins trading. Delivery of Safex silo receipts against an open futures position in an expiry month, may take place on one or more delivery days. Open short positions at the close of trading on the last trading day shall be settled by delivery of Safex silo receipts on one of the remaining delivery days.
- (h) **Invoicing and payment**
An invoice reflecting the amount payable upon delivery of Safex silo receipts shall be included in the daily account summary by the clearing house to the clearing member representing the assigned long position holder and payment shall
-

take place by 12:00 on the delivery day. Payment shall be made at the mark-to-market price for the trading day immediately preceding delivery day as determined by the clearing house, adjusted for value added tax (if any), location differentials and storage charges in terms of this contract specification.

8. Default

- (a) Upon failure by the seller to make delivery of Safex silo receipts for the contract unit in terms of this contract specification, the seller shall be in default and the default procedures set out in section 20.3.5 of the Rules shall apply. The defaulting party shall be liable for a minimum penalty determined from time to time by the clearing house at its discretion.
- (b) Upon failure by the buyer to receive delivery of Safex silo receipts for the contract unit and make payment therefor in accordance with this contract specification, the buyer shall be in default and the default procedures set out in section 20.1.3 of the Rules shall apply. The defaulting party shall be liable for a minimum penalty determined from time to time by the clearing house at its discretion.

9. Alternative Delivery Procedures

- (a) Notwithstanding any other provision of this contract specification, a seller and buyer may agree to offset their open futures positions against one another and make delivery in a manner other than provided for in this contract.
- (b) In the event that the seller and buyer do so agree, they shall each immediately give notice of that fact to the clearing house in such form and containing such details as may from time to time be prescribed by the clearing house.
- (c) Upon receipt of such notices, the clearing house shall liquidate the parties' contracts and positions at the price agreed between the parties and shall cease, in respect of any arrangement made pursuant to this rule, to owe any obligations in respect of such contracts and positions towards the seller, the buyer or any other person.

10. Clearing house

All contracts shall (without prejudice to any other provision of these contract rules) be subject to such clearing house procedures as may from time to time be adopted by the clearing house, provided always that, if any conflict between the clearing house procedures and this contract specification shall arise, the provisions of this contract specification shall prevail. The clearing house may at its discretion at any time alter or add to the administrative procedures and any such amendment shall be circulated to members and shall have such effect on existing as well as new contracts as the clearing house may direct.

11. Exclusion of liability

The exchange and clearing house shall have no liability whatsoever for the condition of silos or acts of silo owners, for their availability or suitability for the storage of maize or for the performance by operators of such silos of any responsibilities they may assume towards members or other persons in relation to these contract rules or otherwise. Persons acquiring silo receipts, placing maize into such silos or taking delivery of goods from the same shall accordingly have no claim against the exchange or its representatives or the clearing house for any loss or damage thereby incurred, however such loss or damage may be caused. Neither the buyer nor the seller nor the holder of a silo receipt nor any other

WHITE MAIZE FUTURES

person shall have any claim against Safex, the clearing house or any of their members, representatives or employees for delivery of maize or for any loss or damage arising from non-delivery or defective delivery of maize or for unsuitability or poor quality of maize delivered or for the insolvency of a silo owner or for non-performance by a silo owner in respect of a silo receipt.

12. **Margins**

Initial margin payable in terms of the contract, as determined by the risk management committee, shall be specified from time to time by the clearing house. Initial margin will be held by the clearing house until all delivery obligations have been fulfilled. Upon expiry, the initial margin requirement will be doubled.

The clearing house may call for such additional margins at any time and from time to time as may be deemed necessary to preserve the security of the contract.

13. **Exchange monitoring**

To assist the exchange in monitoring the operation of contracts (but without obliging it to do so and without prejudice to any other power which it might have) the exchange may, at any time and from time to time, require members and other persons in whose name contracts subject to the contract rules are registered with the clearing house and the clearing house (or any of them) to supply to it such information as it thinks fit. Where appropriate the exchange may require such information to be supplied to it through the clearing house.

WHITE MAIZE FUTURES

APPENDIX A

Approved silos

SILO OWNER	SILO/DELIVERY LOCATION	LOCATION DIFFERENTIAL	SILO OWNER	SILO/DELIVERY LOCATION	LOCATION DIFFERENTIAL
SWK	Allanridge	-R49/t	SWK	Gottenburg	-R37/t
Suidwes	Amalia	-R61/t	OTK	Greylingstad	-R38/t
OTK	Amersfoort	-R56/t	OTK	Grootvlei	-R36/t
OTK	Argent	-R35/t	NWK	Halfpad	-R39/t
SWK	Arlington	-R55/t	SOK	Harrismith	-R73/t
OTK	Arnot	-R48/t	SWK	Hartebeesfontein	-R41/t
VRY	Ascent	-R48/t	Vaalharts	Hartswater	-R67/t
SWK	Attie	-R47/t	OTK	Harvard	-R46/t
NWK	Baberspan	-R47/t	OTK	Hawerklip	-R34/t
OTK	Balfour	-R36/t	SWK	Heilbron	-R42/t
Suidwes	Bamboesspruit	-R47/t	SWK	Hennenman	-R53/t
MGK	Battery	-R19/t	SWK	Heuningspruit	-R45/t
OTK	Bethal	-R45/t	OTK	Holmdene	-R40/t
OTK	Bloekomspruit	-R35/t	SWK	Hoogte	-R46/t
SWK	Bloemfontein	-R65/t	OTK	Kaalfontein	-R28/t
Suidwes	Bloemhof	-R58/t	NWK	Kameel	-R64/t
NWK	Bodenstein	-R34/t	Suidwes	Kameel	-R64/t
NWK	Boons	-R26/t	OTK	Kendal	-R36/t
SWK	Bothaville	-R43/t	Suidwes	Kingswood	-R56/t
SWK	Brandfort	-R61/t	SWK	Klerksdorp	-R37/t
OTK	Bronkhorstspuit	-R39/t	SWK	Koppies	-R41/t
SWK	Buckingham	-R27/t	NWK	Koster	-R31/t
NWK	Buhrmannsdrift	-R48/t	SWK	Kroonstad	-R48/t
SWK	Bultfontein	-R58/t	Suidwes	Leeudoringstad	-R45/t
OTK	Carolina	-R58/t	OTK	Leeuspruit	-R37/t
Suidwes	Christiana	-R61/t	OTK	Leslie	-R36/t
OVK	Clocolan	-R68/t	NWK	Lichtenburg	-R40/t
NWK	Coligny	-R39/t	SWK	Losdorings	-R50/t
OTK	Davel	-R48/t	OTK	Lothair	-R58/t
SWK	De Brug	-R67/t	NWK	Lottie Halte	-R39/t
NWK	Delareyville	-R49/t	OTK	Lydenburg	-R65/t
NWK	Derby	-R30/t	NWK	Madibogo	-R61/t
OTK	Devon	-R34/t	OTK	Maizefield	-R50/t
GWK	Douglas	-R97/t	SWK	Makokskraal	-R32/t
OTK	Driefontein	-R46/t	Suidwes	Makwassie	-R50/t
OTK	Dryden	-R33/t	OTK	Marble Hall	-R64/t
OTK	Eloff	-R31/t	NWK	Mareetsane	-R57/t
OTK	Endicott	-R32/t	OVK	Marseilles	-R71/t
SWK	Enselspruit	-R29/t	SOK	Meets	-R60/t
OTK	Ermelo	-R53/t	SWK	Melliadora	-R39/t
OTK	Estancia	-R52/t	OTK	Middelburg	-R46/t
VRY	Frankfort	-R45/t	SWK	Middelvlei	-R10/t
OVK	Ficksburg	-R66/t	NWK	Migdol	-R51/t
OVK	Fouriesburg	-R64/t	Suidwes	Migdol	-R51/t
SWK	Geneva	-R51/t	SWK	Mirage	-R42/t
NWK	Gerdau	-R44/t	OVK	Modderpoort	-R70/t
OTK	Glenroy	-R28/t	OTK	Morgenzon	-R52/t
OTK	Goeiehoek	-R36/t	OTK	Nigel	-R31/t

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SILO OWNER	SILO/DELIVERY LOCATION	LOCATION DIFFERENTIAL	SILO OWNER	SILO/DELIVERY LOCATION	LOCATION DIFFERENTIAL
SWK	Oberholzer	-R22/t	SWK	Theunissen	-R58/t
SWK	Odendaalsrus	-R50/t	SWK	Tierfontein	-R55/t
OTK	Ogies	-R37/t	OVK	Tweespurit	-R72/t
NWK	Oppaslaagte	-R42/t	OTK	Trichardt	-R40/t
KOLK	Oranjeriver	-R92/t	OTK	Val	-R39/t
NWK	Ottosdal	-R44/t	SWK	Ventersdorp	-R30/t
OTK	Overvaal	-R58/t	NWK	Vermaas	-R45/t
OTK	Pan	-R48/t	SWK	Vierfontein	-R41/t
TWK	Panbult	-R61/t	SWK	Viljoenskroon	-R41/t
VRY	Petrus Steyn	-R50/t	Allem Brothers	Viljoenskroon	-R41/t
OTK	Platrand	-R50/t	VRY	Villiers	-R39/t
SWK	Potchefstroom	-R31/t	VRY	Vrede	-R60/t
GWK	Prieska	-R123/t	Suidwes	Vryburg	-R56/t
SWK	Raathsvlei	-R27/t	VRY	Warden	-R80/t
SWK	Regina	-R41/t	SWK	Welgeleë	-R56/t
VRY	Reitz	-R54/t	SWK	Wesselsbron	-R54/t
SWK	Rooiwal	-R42/t	Suidwes	Wolmaranstad	-R49/t
NWK	Sannieshof	-R44/t	SWK	Wolwehoek	-R31/t
SWK	Schoonspruit	-R48/t	OTK	Wonderfontein	-R52/t
SWK	Schuttendraai	-R46/t			
Suidwes	Schweizer-Reneke	-R58/t			
SOK	Senekal	-R60/t	BEEF	Approved cold storage plants in a 50km radius around City Deep	
OTK	Standerton	-R44/t			
SWK	Steynsrust	-R53/t			
OTK	Stoffberg	-R60/t	NABI	No physical delivery	
NWK	Swartruggens	-R34/t			
NWK	Syferbult	-R25/t	SPUD	No physical delivery	

APPENDIX B

SAFEX FORM OF SILO RECEIPT

Receipt No 000001

STORAGE AND HANDLING CHARGES

The undersigned silo owner claims a lien on the said maize/wheat for unpaid storage and handling charges from the date of receipt, calculated at the standard rate as specified by the Safex Silo Tariff Committee for each maize/wheat marketing season. Storage and handling charges have been paid on the maize/wheat covered by this receipt up to and including the last date endorsed below by the silo owner.

ISSUED BY SILO OWNER: _____

IN RESPECT OF SILO: _____

STORAGE AND HANDLING CHARGES PAID UP TO AND INCLUDING:

DATE: _____

SIGNATURE FOR SILO OWNER: _____

ORIGINAL TRANSFERABLE SILO RECEIPT

Issued by the above silo owner in terms of the Rules of Safex and Safex white and yellow maize- / wheat futures contracts

STORAGE AND HANDLING CHARGES PAID UP TO AND INCLUDING:

DATE: _____

SIGNATURE FOR SILO OWNER: _____

RECEIVED _____ **FROM:** _____

(THE DEPOSITOR)

OF: _____

STORAGE AND HANDLING CHARGES PAID UP TO AND INCLUDING:

DATE: _____

SIGNATURE FOR SILO OWNER: _____

For storage in the above-named silo, maize/wheat of the quantity, class and grade as indicated hereon for which this receipt is issued, grade and weight according to the relevant references and in event of dispute as determined by an inspector appointed by Safex. The undersigned silo owner is not the owner of said maize/wheat either solely, jointly or in common with others unless otherwise stated hereon. Upon return of this receipt properly endorsed and after payment of storage and handling charges claimed hereon, physical delivery of said maize/wheat of the same or better grade will be made free on rail truck alongside the above-named silo to the above-named depositor or his ORDER described as transferee on the record of transfer below, provided that the receipt shall be returned and delivery made by no later than 30 April of the maize / 31 October of the wheat marketing season in which the receipt was issued, or shall be subject to a penalty storage and handling rate pre-determined by the Safex Silo Tariff Committee.

STORAGE AND HANDLING CHARGES PAID UP TO AND INCLUDING:

DATE: _____

SIGNATURE FOR SILO OWNER: _____

WHITE MAIZE (WM1)				YELLOW MAIZE (YMI)			
WHEAT	Protein	12% +	10% - 11.9%	Spec. Weight	79 kg/hl +	76 - 78,9 kg/hl	74 - 75,9 kg/hl
DATE OF RECEIPT	D	M	Y	Quantity (Digits)	t	Quantity (Words)	

STORAGE AND HANDLING CHARGES PAID UP TO AND INCLUDING:

DATE: _____

SIGNATURE FOR SILO OWNER: _____

STORAGE AND HANDLING CHARGES PAID UP TO AND INCLUDING:

DATE: _____

SIGNATURE FOR SILO OWNER: _____

STORAGE AND HANDLING CHARGES PAID UP TO AND INCLUDING:

DATE: _____

SIGNATURE FOR SILO OWNER: _____

ISSUED AT: _____

DATE: _____

SIGNATURE FOR SILO OWNER: _____

SIGNATURE FOR SILO OWNER: _____

SIGNATURE FOR SILO OWNER: _____

RECORD OF TRANSFER OF SILO RECEIPT

The undersigned transferor, who on the first occasion of transfer shall be the depositor, hereby endorses this receipt and certifies that on the transfer date stated he is the owner of the maize/wheat covered by this receipt and, other than the silo owner's lien shown on the face of this receipt, there are no liens or other encumbrances on said maize except as stated hereon.

REF	TRANSFER DATE	TRANSFEROR'S NAME	TRANSFEROR'S SIGNATURE	SAFEX BROKER'S CONFIRMATORY SIGNATURE	TRANSFEREE'S NAME	TRANSFEREE'S SIGNATURE	SAFEX BROKER'S CONFIRMATORY SIGNATURE
1							
2							
3							
4							
5							

Neither the buyer nor the seller nor the holder of this silo receipt nor any other person shall have any claim against Safex, the clearing house or any of their members, representatives or employees for delivery of maize or for any loss or damage arising from non-delivery or defective delivery of maize or for unsuitability or poor quality of maize delivered or for the insolvency of the silo owner or for non-performance by the silo owner in respect of this silo receipt.

APPENDIX C

Requirements for approved silo owners

- 1. Financial standing**
The silo owner shall be in good financial standing and credit, and shall have an ongoing net financial worth of R10 million. Financial net worth shall be determined as the aggregate of all classes of ordinary and preference shares, share premiums, capital redemption reserve funds, disclosed distributable reserves (including policy holder and member reserves), fully subordinated liabilities or liabilities repayable at the sole option of the company, specifically excluding any non-distributable reserves and tax reserves.
Applicants with a net financial worth of less than R10 million may provide sureties or guarantees in a form acceptable to the clearing house in lieu of such net financial worth.
- 2. Experience and expertise**
The silo owner and management shall in the opinion of the clearing house have adequate experience and technical expertise in the handling and storing of maize.
- 3. Legal standing**
The silo owner shall be a legal entity registered in the Republic of South Africa.
- 4. Compliance with rules of Safex and terms of maize futures contract**
The silo owner shall comply with the Rules of Safex and the terms of the Safex maize futures contract insofar as they relate to Safex silo receipts issued by such silo owner.
- 5. Record-keeping, inspection and reporting**
The silo owner shall maintain records reflecting the date of receipt, quantity, quality and silo location of the maize reflected on every Safex silo receipt in issue so as to facilitate audit and verification of the maize reflected on the silo receipt by an inspector appointed by the clearing house. The silo owner shall provide the clearing house with a copy of each Safex silo receipt within a week of its issue and shall notify the clearing house within a week of the presentation and cancellation of a Safex silo receipt previously in issue.
- 6. Insurance**
Silo owners shall have current insurance policies in place, covering silo buildings, equipment and commodities stored therein against the following minimum risks: fire, earthquake, earth tremor, malicious damage, storm, flood, spontaneous combustion and explosion.
- 7. Handling procedures**
Silo owners shall inload and outload maize consecutively without giving unreasonable preference to one receipt holder, depositor or owner of the maize over another. The maize shall on request by a receipt holder be outloaded at a minimum outload rate of 500 tons per day or at a rate which in the opinion of the

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Safex Grains Committee is commensurate with ordinary and reasonable practice of the silo owner for the silo concerned. Silo owners shall not be responsible for a delay in outloading whilst a condition of force majeure exists. All maize inloaded and outloaded shall be subject to adequate and accurate weighing procedures. Silo weighing equipment shall be certified as accurate by an SABS-accredited scale company at least once every 3 years.

8. Disputes

The silo owner shall refer all disputes relating to these requirements and silo receipts for arbitration or mediation in terms of section 17 of the Rules of Safex.

9. Decision by clearing house final

Notwithstanding compliance with the above requirements by a silo owner, the clearing house may in its sole discretion elect not to approve the silo owner if in its opinion this would not be in the interests of the maize futures market. The clearing house shall furnish the full reasons for its decision.

APPENDIX D

Requirements for approved silos

1. General

The silo must be situated at an operational rail siding, and have the necessary mechanical equipment in working order for the effective and expeditious inloading, storage and outloading of a minimum of 10,000 metric tons of maize in bulk.

2. Minimum load-out rate

The silo shall have a minimum load-out rate of 500 tons of maize per day, subject to the requirements described in point 7 of appendix C.

3. Decision by clearing house final

Notwithstanding compliance with the above requirements by a silo, the clearing house may in its sole discretion elect not to approve the silo if in its opinion this would not be in the interests of the maize futures market. The clearing house shall furnish the full reasons for its decision.

APPENDIX E

Procedures for issue, transfer, delivery and presentation of safex silo receipts

1. Safex silo receipts shall be prepared by a silo owner on sequentially numbered stationery provided by Safex, consisting of an original attached to two carbon copies.
2. Upon issue of a Safex silo receipt by a silo owner, one copy shall be sent to the clearing house, the other copy shall be retained by the silo owner and the original shall be handed over to the owner of the maize.
3. All transfers must be notified to the clearing house by sending a photocopy of the updated original receipt to the clearing house by fax, containing a Safex broker's confirmatory signature.
4. To be acceptable for delivery in satisfaction of a maize futures contract, a Safex silo receipt must have been issued by a silo owner, copies of the receipt reflecting all transfers must have been received by the clearing house by the close of business on the first business day prior to notice day, and the original Safex silo receipt must be properly endorsed by the seller as transferor.
5. Upon presentation of a silo receipt to a silo owner for physical delivery of maize, the clearing house shall on request by the silo owner confirm the identity of the current holder of the silo receipt by reference to its records of transfer. The silo owner shall notify the clearing house following the presentation and cancellation of the silo receipt.

APPENDIX F:

Form of Delivery Note

MEMBER'S REF:

SAFEX REF: MDN 22

Clearing House Use Only

The undersigned short position holder hereby gives notice to the Clearing House of intention to deliver as follows:

SHORT POSITION HOLDER:

Client Code:	NDQ43
Member Code:	SEN
Clearing Member Code:	RMBC

NOTICE DAY

29-Apr-96
01-May-96
WMAZ MAY 96
10
1000

DELIVERY DAY

FUTURES CONTRACT

TOTAL NO CONTRACTS

TOTAL QUANTITY IN TONS

PLEASE NOTE

The figures in this Appendix are provided for example purposes only.

SILO RECEIPTS TO BE DELIVERED

Receipt Number	Quantity Tons	Silo Owner	Silo Location	Storage Paid To	Days Storage	Storage Due Per Ton	Location Diff Per Ton	Discount Per Ton	Total Discount	Assign Ref - Clearing House Use Only
101	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
102	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
103	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
104	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
105	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
106	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
107	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
108	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
203	100	OTK	Bethal	02-May-96	0	R0.00	R45	R45.00	R4,500.00	
204	100	OTK	Bethal	02-May-96	0	R0.00	R45	R45.00	R4,500.00	
										R44,080.00

SIGNED FOR THE SHORT POSITION HOLDER:

For Clearing House use only:

CLOSING FUTURES PRICE ON DAY PRIOR TO DELIVERY DAY

R550

GROSS INVOICE AMOUNT

R550,000

NET INVOICE AMOUNT DUE TO SHORT POSITION HOLDER

R505,920.00

Assignment of Delivery Notice

SAFEX REF: MAN 1A

DELIVERY NOTICE REF: MDN 1

The Clearing House hereby gives the following long position holder notice of assignment of physical delivery as follows:

LONG POSITION HOLDER:

Client Code:	ABC022
Member Code:	FGH
Clearing Member Code:	FIBC

NOTICE DAY
DELIVERY DAY
FUTURES CONTRACT
TOTAL NO CONTRACTS
TOTAL QUANTITY IN TONS

29-Apr-96
01-May-96
WMAZ MAY 96
5
500

SILO RECEIPTS TO BE DELIVERED

Receipt Number	Quantity Tons	Silo Owner	Silo Location	Storage Paid To	Days Storage	Storage Due Per Ton	Location Diff Per Ton	Discount Per Ton	Total Discount	Assign Ref - Clearing House Use Only
101	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
102	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
103	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
104	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
105	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
									R21,925.00	

CLOSING FUTURES PRICE ON DAY PRIOR TO DELIVERY DAY R550

GROSS INVOICE AMOUNT

R275,000

NET INVOICE AMOUNT DUE BY LONG POSITION HOLDER BY 12:00 ON DELIVERY DAY

R253,075.00

Assignment of Delivery Notice

SAFEX REF: MAN 1B **DELIVERY NOTICE REF:** MDN 1

The Clearing House hereby gives the following long position holder notice of assignment of physical delivery as follows:

Client Code:	DEF021
Member Code:	GHJ
Clearing Member Code:	NBCC

LONG POSITION HOLDER:	Client Code:
	Member Code:
	Clearing Member Code:
NOTICE DAY	29-Apr-96
DELIVERY DAY	01-May-96
FUTURES CONTRACT	WMAZ MAY 96
TOTAL NO CONTRACTS	5
TOTAL QUANTITY IN TONS	500

SILO RECEIPTS TO BE DELIVERED

Receipt Number	Quantity Tons	Silo Owner	Silo Location	Storage Paid To	Days Storage	Storage Due Per Ton	Location Diff Per Ton	Discount Per Ton	Total Discount	Assign Ref - Clearing House Use Only
106	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
107	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
108	100	Sentraalwes	Bothaville	28-Apr-96	5	R0.85	R43	R43.85	R4,385.00	
203	100	OTK	Bethal	02-May-96	0	R0.00	R45	R45.00	R4,500.00	
204	100	OTK	Bethal	02-May-96	0	R0.00	R45	R45.00	R4,500.00	
									R22,155.00	

CLOSING FUTURES PRICE ON DAY PRIOR TO DELIVERY DAY R550

GROSS INVOICE AMOUNT

R275,000

NET INVOICE AMOUNT DUE BY LONG POSITION HOLDER BY 12:00 ON DELIVERY DAY

R252,845.00

APPENDIX G

Procedures for the close-out and delivery of maize futures

1. Deliveries on or before the last trading day (expiry day)

- | | |
|---|---|
| Notice day
Day before
delivery | <ol style="list-style-type: none">1. Clearing member representing short position holder delivers Delivery Notice to Clearing House by the close of trading 12:00.2. Based on closing positions for the day, the Clearing House assigns delivery to one or more long position holders on a random basis.3. The Clearing House closes out the futures positions of the short and long position holders that are due for delivery at the mark-to-market price, and establishes equivalent positions in physical maize contracts at the standard margin. The Clearing House invoices the assigned long position holders for the full amount due on delivery at the mark-to-market price.4. Clearing House completes delivery and assignment notices and notifies clearing members and members representing the long position holders and short position holders accordingly. |
| Delivery day | <ol style="list-style-type: none">1. Clearing member or authorised person representing the short position holder delivers silo receipts to Clearing House by 12:00. After checking the validity of the silo receipt(s), an authorised signatory for the Clearing House issues a receipt therefor.2. Clearing members representing assigned long position holders collect silo receipts between 14:00 and 17:00 against signature acknowledging receipt therefor. Before handing over silo receipts, the Clearing House checks that payment has been made. The Clearing House transfers payment received from long position holders to short position holders.3. After delivery is completed, the Clearing House closes out the positions of the short and long position holders in physical maize contracts, repaying margin the following day. |

WHITE MAIZE FUTURES

2. Deliveries after the last trading day (expiry day)

- | | | |
|----------------------------|----|---|
| Expiry day | 1. | The Clearing House closes out the futures positions of all short and long position holders at the expiry price and establishes equivalent positions in maize physical contracts at <u>double</u> the standard margin. |
| Notice day | 1. | Clearing members representing short position holders deliver Delivery Notices to Clearing House by close of trading 12:00. |
| Day before delivery | 2. | Based on closing positions for expiry day, the Clearing House assigns delivery to one or more long position holders on a random basis. |
| | 3. | Clearing House completes delivery and assignment notices and the clearing members and members representing the long position holders and short position holders accordingly. |
| Delivery day | 1. | Clearing member representing the short position holder delivers silo receipts to Clearing House by 12:00. After checking the validity of the silo receipt, an authorised signatory for the Clearing House issues a receipt therefor. |
| | 2. | Clearing members representing assigned long position holders collect silo receipts between 14:00 and 17:00 against signature acknowledging receipt therefor. Before handing over silo receipts, the Clearing House checks that payment has been made. The Clearing House transfers payment received from long position holders to short position holders. |
| | 3. | After delivery is completed, the Clearing House closes out the positions of the short and long position holders in physical maize contracts, repaying margin for the following day. |

Appendix 3: Silos Owned by Coops in South Africa

Grain Silo Information Pertaining to Northern Cooperatives

Cooperative	Number of Silos	Current Capacity	Percentage of Total Northern Cooperative Capacity
Griekwaland Wes	2	78,446	0.5%
Kolk	1	55,054	0.4%
MGK	4	154,307	1.1%
Natal	8	359,154	2.5%
NTK	15	497,922	3.5%
Noordwes	35	2,605,546	18.1%
Oranje	1	6,231	0.04%
OTK	45	3,022,574	21%
OVK	8	304,908	2.1%
Sentraal-Oos	12	578,153	4%
Sentraalwes	53	4,483,141	31.2%
Suidwes	16	1,242,536	8.6%
Tvl Wattel	2	104,077	0.7%
Vaalharts	3	111,616	0.7%
Vrystaat	15	763,273	5.3%
Total	220	14,366,938	100%

Source: Uniegraan

Appendix 3 (contd): Silos Owned by Coops in South Africa

Grain Silo Information Pertaining to Southern Cooperatives

Cooperative	Number of Silos	Current Capacity	Percentage of Total Southern Cooperative Capacity
Bredasdorp	5	112,658	11.6%
Caledon	4	143,430	14.7%
Calvinia	1	5,391	0.6%
Oos-Kaap	1	31,094	3.2%
Humansdorp	1	20,391	2.1%
Moorreesburg	7	173,516	17.8%
Porterville	8	130,054	13.4%
Riversdal	2	37,032	3.8%
Suidwes	2	30,836	3.2%
Sentraal-Suid	6	104,688	10.8%
WPK	8	180,641	18.6%
Villiersdorp	1	3,125	0.3%
Total	46	972,856	100%

Source: Uniegraan

Other Silo Capacity Nationwide By Category of Owner

Category of Owner	Number of Silos	Capacity (tonnes)	Percentage
Traders	1	158,692	10.1%
Millers	81	629,248	40.2%
Commercial Traders	30	279,099	17.8%
Manufacturers of Maize Products	3	15,538	1.0%
Manufacturers of Sorgum Products	3	123,600	7.9%
Wheat Processors	18	358,127	22.9%
Total	136	1,564,304	100%

Source: Uniegraan

Appendix 4: Co-operative Storage Charges, South Africa

Co-operatives tend to break down their silo charges as follows. There is normally a charge for elevation (i.e. the process of grading, weighing and depositing grain into the silo - this charge sometimes also covers eventual discharge into road or rail trucks). Then there are storage charges per tonne, which may be payable per day, per month or per year. Co-operatives also tend to differentiate between farmer members and non members (whether they be farmers, traders or processors).

Table 4: Silo Charges for Warehouses in South Africa

Location	Elevation (US\$/t)	Fumigation (US\$/t)	Storage (US\$/t/m)
Balfour, OTK	1.96	0.39	1.06
Frankfort, Vrystaat Koop	2.55		1.06
Frankfort, Vrystaat Koop 1		0.65	
Sentraalwes 1		0.62	
Sentraalwes (May to Sept)	2.35		1.18
Sentraalwes (Oct to Apr) 1			0.71

Note: 1 Fee includes elevation, fumigation and storage

Source: Survey of co-operatives

If a farmer wishes to transfer ownership of maize to a buyer, Sentraalwes charges R2/t. Noordwes charges R43/t per annum (including elevation and discharge) or elevation of R12/t, R4/t discharge, and 18c/t/day. Noordwes charges R1/t to transfer ownership. Suidwes charges farmers R30/t per annum, and traders and millers R35/t per annum (elevation and discharge included) and charges nothing to transfer ownership. A number of co-operatives have made it clear that they have negotiated lower rates per tonne with larger storage customers.

Appendix 5 — Tororo Warehouse Revenues and Costs, Uganda

Rental charges for the use of a typical warehouse facility are as follows: This is for Tororo warehouse which has three units of 6,000 tonnes bagged warehousing space. This is let to the EU. Data here relate to 1997.

Table : Rental Charges for Tororo Warehouse

Rental	5,160 ECU per month
Handling	1.9 ECU per tonne
Pest control	1.3 ECU per tonne
Rebagging and stiching	0.95 ECU per tonne
Insurance	0.4% (of value above 10%)

Source: Produce Marketing Board

Using the exchange rate for November 1997, (ECU= 0.911 US\$), these revenues translate to US\$4,700. Against these revenues, it was interesting to collect data on costs which are incurred in the course of running the 18,000 tonne warehouse.

Table : Tororo Warehousing Costs, million Ugandan Shillings

Salaries	1.4
Wages	0.6
Clerks	0.2
Security	0.5
Water	0.2
Power	0.2
Telephone	0.2
Transport	0.6
Miscellaneous	0.5
Total	4.4

Source: Produce Marketing Board

At 1,130 Ush to the US\$, monthly costs are around US\$3,900. Based on rental revenues alone, the warehouse makes a small net margin.